



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

[Sponsored by Lavu Educational Society]

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad.)

Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301 Phone: +91 96529 10002/3



MoUs/Collaborations/ linkages related documents indicating the nature of collaboration and activities year wise.

S.No	Name of the MoU/ collaborations/Linkage	Purpose	Page No.
1	EducateNXT	MoU to Providing Training On GRE, IELTS, GMAT, GATE, CAT, Training on Advanced Technologies, Workshops, Seminars.	16-19
2	Samskruti Foundation	MoU for Cultural Based Leadership like Vivek Band, Samskruti Samvad, Rakhi for Soldiers, Yoga for Youth.	20-23
3	EdifyPath educational Services Pvt.Ltd	MoU for Awareness Program On Career Counseling, Expertise Training and Industrial Visit, Student Development Activities, Faculty Development Activities.	24-29
4	Huawei Services (hongkong)Co.Limited	MoU for Training Sessions With Hands On Experience and workshops	30-41
5	Edugene Technologies Private Limited	MoU to Conduct Workshops/ Industrial visit/ Add on Courses/Seminars	42-43
6	Cyient Ltd	MoU for Student Internship and Short term courses, Workshops and Software Development activities.	44-45
7	Stem World Innotech LLP	MoU for Enhancing Knowledge, Employability Skills and Internship	46-48
8	Deccan solutions	MoU for Student Internship and Short term courses.	49-51



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9	MCEE Solutions Private Limited	MoU for Skill Based Training like Java, Advanced Data Structures, Python Programming Language and Mou For Student Internship.	52-54
10	Internshala, ScholiverseEducare Pvt. Ltd	MoU for Student Internship and Training on Short term courses.	55-56
11	AmbestTechnovation Private Limited	MoU for Student Internship, Workshops, Seminars and Short term courses.	57-58
12	Path Creators, Sri Vaikunta Technologies Pvt. Ltd	MoU for Student Internship and Short term courses.	59-60
13	Coign Consultants Pvt.Ltd.	MoU for Enhancing Knowledge, Employability Skills and Training Programs on Advanced Technologies.	61-62
14	Six Phrase The Finishing School	MoU for Student Internship and Short term courses and Software Development activities.	63-68
15	Kodnest Technologies	MoU for Workshops, Seminars, Guest Lectures and Student Technical Skill Development Programs.	69-75
16	ACE Engineering College	MoU for Guest Lectures, Seminars, Workshops, Training Programs	76
17	Edunet Foundation	MoU for Seminars and workshops, Guest Lectures and Technical Programs	77-79
18	ADITI Software	MoU for Seminars and workshops, Guest Lectures, Technical Programs and Non Technical Programs	80-81
19	Truechip Solutions Pvt.Ltd	MoU for Providing Hands on Workshops, add on courses. Training on VLSI, Product Designs, Product Services	82-100
20	CALYXPOD Talent solutions Pvt.Ltd	MoU for Providing Online Coures For Students and Industrial Visit	101-107



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21	J.B. Institute of Engineering & Technology	MoU for Seminars and workshops, Guest Lectures	108
22	Indian Placement Service Center	MoU for Technical and Non Technical Training Programs	109-114
23	Fourth ambit Employability Services	MoU for Enhancing Knowledge, Employability Skills and Short Term Courses.	115-116
24	Techona Enterprises	MoU for Student Academic Projects, Workshops and Software Development	117-118
25	Samskruti College of Engineering & Technology	MoU for Seminars, Workshops and Guest Lectures	119
26	Tech Fort Solutions Services Pvt Ltd	MoU for Guest Lectures, Seminars and workshops,	120-121
27	Deeksha Technologies	MoU for students, Training programs, Workshops, add on courses	122-143
28	Joginpally B.R. Engineering College	MoU for Workshops, Seminars and Guest Lectures	144
29	Sri Gajanan E-Slates Pvt.Ltd	MoU to Conduct Technical Training Programs /Workshops/ Guest Lectures/Industrial Visit	145-151
30	CoCubes Technologies Pvt.Ltd.	MoU to Conduct Interactive Short Term Courses /Skill Enhancing Sessions For Students	152-165
31	Tagit Consulting	MoU for Seminars and Workshops, Guest Lectures, Training Programs	166-167
32	Brain o vision solutions Pvt.Ltd	MoU to Conduct Technical Training Programs such as Java, Python Programming, Web Technologies, Database Concepts, Workshops and Internships	168-170
33	FACE An IIM Graduates Enterprise	MoU for Training on Technical and Non Technical Courses	171-181
34	Elegant Embeded Systems Pvt.Ltd	MoU to Conduct Workshops/ Industrial visit/ Add on Courses/Seminars	182-213




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35	CodeMax IT Solutions Pvt. Ltd	MoU for Student Internship and Short term courses.	214-220
36	Telangana academy for skill and Knowledge(TASK)	MoU to Conduct Short Term Technical Training Programs /Workshops/ Guest Lectures/ Seminars	221-223
37	Bheri Overseas Education services	MoU for Career Short Term Training Programs such as Data Science, Artificial Intelligence, Machine Learning, Block chain etc	224
38	Armtronics	MoU for students Add on courses, Training Programs	225-226
39	Valmiki Foreign Education Services	MoU for Awareness of Career Counseling Programs	227-232
40	Suneetha Bulla, Koneru Lakshmaiah Educational Foundation, Vaddeswaram, Guntur	Research collaboration	233
41	B. Basaveswararao, Acharya Nagerjuna University		
42	K. Gangadhara Rao, Acharya Nagerjuna University		
43	K. Chandan, Acharya Nagerjuna University		
44	Dr. A.C. Priya Ranjani, Vijaya Institute of Technology for Women, Vijayawada	Research collaboration	234
45	Dr. Pradeep Venuthurumilli, ST.Mary's Women's Engineering College, Guntur		
46	Dr. A. Gautami Latha, Sridevi Women's Engineering College, Vattinagulapally, Hyderabad.		
47	Anjali Kumari, Gurunanak Institute of Technology	Research collaboration	235
48	Debabanjana Das, Gurunanak Institute of Technology		
49	Mahuya Maity, Gurunanak Institute of Technology		



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50	Plaban Mal, Gurunanak Institute of Technology		
51	Koushik Pal, Gurunanak Institute of Technology		
52	Poushali paul, Gurunanak Institute of Technology	Research collaboration	236
53	Ankit Kumar, Gurunanak Institute of Technology		
54	Adrita Rao, Gurunanak Institute of Technology		
55	Koushik Pal, Gurunanak Institute of Technology		
56	Shubham Joshi, SVKM'S NMIMS, MPSTME Shirpur Campus		
57	Hatim Z. Almarzouki, King Abdulaziz University Hospital, Jeddah, Saudi Arabia	Research collaboration	237
58	Piyush Kumar Shukla, University institute of Technology		
59	Ali Rizwan, King Abdulaziz University Hospital, Jeddah, Saudi Arabia		
60	C. Kalpana, SST College of Art and Commerce, Ulhasnagar		
61	Basant Tiwari, Ethiopia Hawassa University, Awasa, Ethiopia		
62	Sundarambai Balaraman, Chennai Institute of Technology	Research collaboration	238
63	Ramesh Ramamoorthy, Chennai Institute of Technology		
64	PT Kalaivaani, Vivekananda college of enginirreing for Women, Namakkal	Research collaboration	239
65	M. Supraja, Rajarajeswari College of Engineering	Research collaboration	240
66	Dr. M. Pavithra Jyothi, Shadan Women's College of Engineering & Technology		




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67	M. Supraja, Rajarajeswari College of Engineering	Research collaboration	241
68	Dr. M. Pavithra Jyothi, Shadan Women's College of Engineering & Technology		
69	Dr. M. Pavithra Jyothi, Shadan Women's College of Engineering & Technology	Research collaboration	242
70	M. Supraja, Quba college of Engineering & Technology		
71	Dr. K. Manjunathachary, GITAM University, Hyderabad	Research collaboration	243
72	Dr. B. L. Malleswari, Sridevi Womens Engineering College		
73	Shubhangi V. Urkude, ICFAI Business School	Research collaboration	244
74	Hasanuzzaman, ICFAI Business School		
75	Dr. Yerram Srinivas, Vignana Bharathi Institute of Technology	Research collaboration	245
76	Koushik Pal, Gurunanak Institute of Technology		
77	M. Parimala, CMR Institute of Technology	Research collaboration	246
78	G. Soujanya, JB Institute of Engineering and Technology	Research collaboration	247
79	M. Parimala, CMR Institute of Technology	Research collaboration	248
80	Samreen Begum, Sreenidhi Institute of Science and Technology		
81	J. Reddappa Reddy, Brilliant Institute of Engineering and Technology	Research collaboration	249
82	K. Lakshman Kumar, Venkatesa Perumal College of Engineering and Technology		
83	K. Sandhya Rani, Mallareddy college of Engineering	Research collaboration	250
84	G. Pratap, Narayanadri Institute of Science and Technology		




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85	A. Kalyani, Sumathi Reddy Institute of technology for women	Research collaboration	251
86	S. Vamshi Krushna, Samskruti College of Engineering and Technology		
87	P. Dastagiri Reddy, Rajeev Gandhi Memorial College of Engineering and Technology	Research collaboration	252
88	Pradeed Venuthurumilli, St marry's Womens Engineering College		
89	K. Lakshman Kumar, Venkatesa Perumal College of Engineering and Technology	Research collaboration	253
90	D. Srinivasulu, Kandula Obul Reddy Memorial College of Engineering		
91	E. Raju, Gurunanak Institute of Engineering & Technology	Research collaboration	254
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93	Prabhakar Cheeti, National Institute of Technology Kurukshetra		
94	Someswar Pola, National Institute of Technology Kurukshetra		
95	Maheshwar Reddy Mettu, Osmania University	Research collaboration	256
96	Jayapal Reddy M, Sreenidhi Institute of Science and Technology		
97	Siva Kumar J, Palamuru University, Mahaboob Nagar		
98	M Sangeetha, Guru Nanak Institutions Technical Campus	Research collaboration	257
99	M Vikranth Reddy, CSIR– Indian Institute Of Chemical Technology (CSIR-IICT)		




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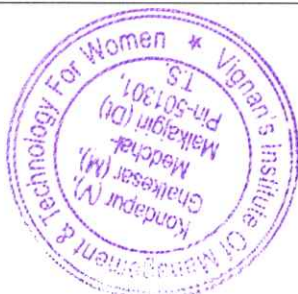
118	Parvathaneni Naga Srinivasu, VNR Vignana Jyothi Institute of Engineering and Technology		
119	Abdulaziz Alhumam, King Faisal University, Al-Ahsa, 31982, Saudi Arabia		
120	Chakunta venkata guru rao, SR University, Warangal.	Research collaboration	264
121	Dr. A. Brahma Reddy, Mallareddy college of engineering for women	Research collaboration	265
122	Rajendra Pamula, Indian Institute of Technology, Dhanbad	Research collaboration	266
123	PT Kalaivaani, Vivekananda college of engineering for Women, Namakkal	Research collaboration	267
124	Aparna Chaparla, RVR and JC College of Engineering	Research collaboration	268
125	J Sudhakar, St Martins Engineering College		
126	M Naresh, Kommuri Pratap Reddy Institute of Technology	Research collaboration	269
127	Dr. Vaka Murali Mohan, Mallareddy college of Engineering for women	Research collaboration	270
128	Dr. K. Srinivasa Rao, Yogi Vemana University	Research collaboration	271
129	CV Guru Rao, SR University, Warangal.	Research collaboration	272
130	Dr. A. Brahma Reddy, Mallareddy college of engineering for women	Research collaboration	273
131	Dr. A. Gautami Latha, Sridevi womens Engineering College	Research collaboration	274
132	K. Vara Laxmi, Holy Mary Institute of Technology and Science	Research collaboration	275
133	Jakeer Hussain Shaik, Vignan's Foundation for Science, Technology & Research	Research collaboration	276



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152	P Sanyasi Naidu, GITAM University	Research collaboration	290
153	S Prasad Babu Vagolu, GITAM University		
154	Dr. Kanaka Durga Returi, Malla Reddy College of Engineering for Women	Research collaboration	291
155	Dr. Vaka Murali Mohan, Mallareddy college of Engineering for women		
156	Dr. Archek Praveen Kumar, Malla Reddy College of Engineering for Women		
157	Yallanti Sowjanya Kumari, St. Ann's College Of Engineering & Technology	Research collaboration	292
158	Mekala Srinivasa Rao, Lakireddy Balireddy College of Engineering, Mylavaram		
159	K. Sandhya Rani, Annamacharya Institute of Technology and Sciences, Hyderabad	Research collaboration	293
160	Ch.V. Raghavendran, Aditya College of Engineering & Technology		
161	Vicky Malik, GITAM University	Research collaboration	294
162	S Prasad Babu Vagolu, GITAM University		
163	Aparna Chaparla, RVR and JC College of Engineering	Research collaboration	295
164	Jagadeesh Kumar Ega, Chaitanya – Deemed to be University	Research collaboration	296
165	Manohar Konda, Vignan Institute of Technology and Science	Research collaboration	297
166	Jagadeesh Kumar Ega, Chaitanya – Deemed to be University		
167	Kumara Swamy Jalla, R.D PG College		
168	P. CHAMUNDESWARI, Dr. Paul Raj Engineering College	Research collaboration	298




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169	PRADEEP VENUTHURUMILLI, St.Mary's Womens Engineering college		
170	E. Raju, Gurunanak Instituté of Engineering & Technology	Research collaboration	299
171	P. Dastagiri Reddy, Rajeev Gandhi Memorial College of Engineering and Technology		
172	A. Gauthami Latha, Sridevi Women's Engineering College	Research collaboration	300
173	B. Narendra Kumar, Sridevi Women's Engineering College		
174	KanusuSrinivasa Rao, Yogi Vemana University, Kadapa		
175	D. Srinivasulu, Kandula Obul Reddy Memorial College of Engineering	Research collaboration	301
176	A. Rupa, Samskruti College of Engineering and Technology		
177	PRADEEP VENUTHURUMILLI, St.Mary's Womens Engineering college		
178	J. Reddappa Reddy, Brilliant Institute of Engineering and Technology	Research collaboration	302
179	K. Sandhya Rani, Mallareddy college of Engineering		
180	S. Vamshi Krushna, Samskruti College of Engineering and Technology		
181	Dr. K. Srujan Raju, CMR Technical Campus	Research collaboration	303
182	Dr. R. Kanaka Durga, Malla Reddy College of Engineering for Women	Research collaboration	304
183	K. Kusuma Kumar, ANUCET, ANU	Research collaboration	305
184	Ch. Anuradha, VR Siddartha Engineering College		




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203	V.V.Prathibha Bharathi, Anurag Group of Institutions		
204	T. Hirwarkar, Sri Satya Sai University Of Technology And Medical Sciences	Research collaboration	316
205	P Sanyasi Naidu, GITAM University	Research collaboration	317
206	Dr.S.Krupa Sheela, KL University	Research collaboration	318
207	J. Reddappa Reddy, Brilliant Institute of Engineering and Technology	Research collaboration	319
208	More Praveen, Malla Reddy engineering College		
209	A. Eenaja, Holy Mary Institute of Technology & Science		
210	K. Chandra Mouli, Gokaraju Rangaraju Institute of Engineering & Technology	Research collaboration	320
211	MD. Fouziya, Holy Mary Institute of Technology & Science		
212	Dr. C. Veena, Kommuri Pratap Reddy Institute of Technology	Research collaboration	321
213	G. Anitha, AVN Institute of Engineering and Technology		
214	P. Dastagiri Reddy, Rajeev Gandhi Memorial College of Engineering and Technology	Research collaboration	322
215	B. Susheel Kumar, Yogi Vemana University	Research collaboration	323
216	V. Meena, Sri Satya Sai University Of Technology And Medical Sciences	Research collaboration	324
217	Battari Obulesu, G.Pullaiah college of Engineering and Technology	Research collaboration	325
218	Shikha Singh, Banasthali Vidyapith, Rajasthan	Research collaboration	326
219	K. Siva Krishna, Avanathi Institute Of Engineering & Technology	Research collaboration	327




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220	G. Rama Krishna, Sri Satya Sai University Of Technology And Medical Sciences	Research collaboration	328
221	Nagaraju Naddi, Vardhaman College of Engineering	Research collaboration	329
222	Ch Narasimha Chary, Sri Satya Sai University Of Technology And Medical Sciences	Research collaboration	330
223	Dr. Rp Singh, Sssutms, Bhopal		
224	Ch Narasimha Chary, Sri Satya Sai University Of Technology And Medical Sciences	Research collaboration	331



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MEMORANDUM OF UNDERSTANDING

BETWEEN

EDUCATENXT

AND

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN (VMTW)

This memorandum of understanding (here in after referred to as "MOU") is entered into on this day **April 22, 2022**.

Between:

EDUCATENXT, having its office at 2893, HAL 2nd Stage, Indiranagar, Bengaluru-560008, Karnataka, India (hereinafter referred to as "INSTITUTE" for the sake of brevity)

And

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN (VMTW), is an exemplary institution of higher learning with a mission of pursuing excellence in education and research located at Ghatkesar, Kondapur, Telangana, India (here in after referred to as "COLLEGE")

INSTITUTE & COLLEGE collectively shall be referred to as "The Parties"

Both the parties have decided to work together for mutual benefits with respective expertise in their fields, in providing training on Trending Technology Courses like CRT, C, AI/Machine Learning, Blockchain, Data Science, Full Stack, DevOps, Python, .Net, Azure, J. MuleSoft, Java, GRE, GMAT, IELTS, etc. & Admission Guidance for MS, MBA to the students at college campus or live online. Both the parties intend to record the terms and conditions of the memorandum of understanding in writing.

Now this Memorandum of Understanding witness in consideration of the mutual convenient contained herein, the parties agreed as follows.

The Purpose of the Agreement

The purpose of this MOU is to establish the terms and conditions under which INSTITUTE if conduct Training for Trending IT Technology Courses to Engineering students at the COLLEGE.

Terms of the MOU, this MOU is effective upon and will come into force from the day and date last signed and executed by the duly authorized representative of the parties to this MOU and shall remain in full force and effect until terminated by either party giving 1 month notice.

INSTITUTE agrees to give a special discount to the students of the COLLEGE on their courses like CRT, C, AI/Machine Learning, Blockchain, Data Science, Full Stack, DevOps, Python, .Net, Azure, J. MuleSoft, Java, GRE, GMAT, IELTS, etc. & Admission Guidance for MS, MBA. No other discount or offer can be exercised along with this discount.

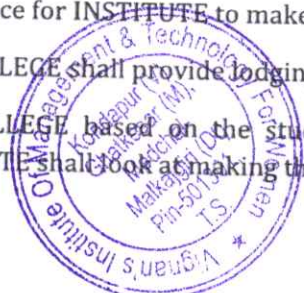



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Services, Responsibilities and Terms & Conditions

Both the parties will undertake the following:

1. The INSTITUTE shall conduct **Full Stack Programming Classes** (As per content submitted) without causing any disturbance to the academic programs of the COLLEGE and shall conduct all their classes with mutual consent as per the schedules submitted to COLLEGE.
1. The college/students shall pay the total fee directly to the INSTITUTE either online or offline payment mode and the INSTITUTE shall issue the proper fee receipt to the college/student on his/her name.
2. It is expected that student strength could be batch of 100 students. In such scenario COLLEGE would install necessary equipment's in classroom / seminar hall to ensure proper visibility and audio to students for smooth conduction of class.
3. However, the INSTITUTE shall conduct special classes under unavoidable conditions only with prior written consent from the COLLEGE in case of any requirement in order to effectively complete syllabus within the stipulated time for the benefit of the students.
4. However, the INSTITUTE shall conduct special classes under unavoidable conditions only with prior written consent from the COLLEGE in case of any requirement in order to effectively complete syllabus within the stipulated time for the benefit of the students.
5. The INSTITUTE shall issue Log-in Id., Password to access Online Student Learning Portal.
6. The INSTITUTE shall issue Study Material, Class Tests, Mock Tests, and Mock Test Series to the student as per the relevant courses.
7. The INSTITUTE shall stop any student from attending classes & block student homepage if the student has not paid the outstanding fees even after the due date.
8. The INSTITUTE shall submit the fee proposals to the COLLEGE as appended and the fee revisions and fee structure for new courses shall be informed by the INSTITUTE to the authorities of the COLLEGE before implementing.
9. The COLLEGE assures that all the facilities are provided by the COLLEGE including classrooms without any rental charges, electricity charges and any other charges required to conduct physical classes.
10. The INSTITUTE will nominate a coordinator duly authorized for correspondence with the COLLEGE who will be the Point of Contact with whom the COLLEGE will be dealing to ensure that the activities of the INSTITUTE are within the confines of this MOU.
11. The COLLEGE will also nominate a coordinator duly authorized for correspondence with the INSTITUTE who will be the Point of Contact with whom the INSTITUTE will be dealing for making necessary arrangements for smooth conducting of the classes at the COLLEGE.
12. Any Communication or notice shall be given to the authorized representatives of the respective parties and to be sent to the registered address of the parties.
13. The COLLEGE shall inform the INSTITUTE for any changes in the Time Table in writing one week in advance for INSTITUTE to make alternative changes.
14. The COLLEGE shall provide lodging & boarding for faculty/representative of INSTITUTE.
15. The COLLEGE based on the student feedback can recommend to change the faculty, the INSTITUTE shall look at making the necessary changes and fee paid once will not be refunded.




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Memorandum of Understanding (MOU)

Where as

EDUCATENXT whose address is 2893, HAL 2nd Stage, Indiranagar, Bengaluru - 560008 engaged in the business of offering popular courses for Study Aboard such as GRE, IELTS, GMAT, SAT and Admission Services to US, UK, Canada, Australia. Also offering Top Trending Technologies AI/ML, Blockchain, Data Science and many & entrance exams like GATE & CAT.

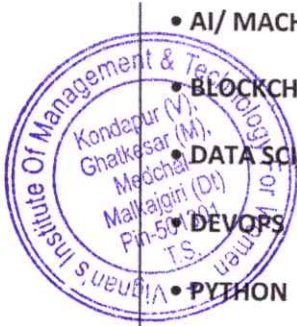
VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN (VMTW), is an exemplary institution of higher learning with a mission of pursuing excellence in education and research located at Ghatkesar, Kondapur, Telangana.

EDUCATENXT and **VMTW** have decided to work together for mutual benefits with respective expertise in their fields, in providing training in Entrance Exams, Top Trending Technologies, Study Abroad Courses & Admission Services. Both the parties intend to record the terms and conditions of the memorandum of understanding in writing.

Now this Memorandum of Understanding witness in consideration of the mutual convenient contained herein, the parties agreed as follows.

1. Purpose: The purpose of this MOU is to establish the terms and conditions under which **EDUCATENXT**, Bengaluru would train students of **VMTW** through Live Online Mode for Entrance Exams like GATE & CAT, Top Trending Technologies, Study Abroad Courses & to give Admission Services.
2. **EDUCATENXT**, Bengaluru agrees to give a **special discount** to the students of **VMTW**.
3. **VMTW** would ensure to provide students as agreed with **EDUCATENXT** for training on below mentioned Courses & Admission Services.

EDUCATENXT, Bengaluru will provide guidance & training in the following courses:

- | | | | |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • GRE • IELTS • GMAT • GATE • CAT |  | <ul style="list-style-type: none"> • AI/ MACHINE LEARNING • BLOCKCHAIN • DATA SCIENCE • DEVOPS • PYTHON | <ul style="list-style-type: none"> • .NET • AZURE • J. MULESOFT • JAVA • HTML, CSS, PHP, SQL, JAVASCRIPT |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

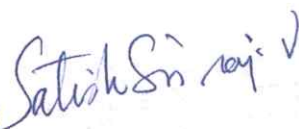
For **EDUCATENXT**



For **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN**



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Time Schedule

The program will be conducted as per fixed schedule. Depending on the total strength, the students will be divided into batches with a minimum of 80 and a maximum of 100 per batch.

Governing Law and Jurisdiction

This MoU shall be governed by the laws of India. The Parties hereby agree that the courts in Hyderabad will have the exclusive jurisdiction to try any disputes by and between the Parties.

Duration of MOU and Amendments

The MOU shall be in force for a period of One Year (01) commencing from the date of signing and may be reviewed by mutual consent by serving three months' notice to the other party. Upon renewal, new terms may be agreed as part of a renewed understanding. Amendments to this agreement must be in writing and approved by the designated representatives of each party.

Termination of MOU

The INSTITUTE and the COLLEGE reserve the right to terminate this MOU by either party giving 6 months' notice in writing to the other. Where such termination occurs, the provisions of this MOU shall continue applying on on-going activities until their completion.

Accountability of the Stakeholders

The INSTITUTE and the COLLEGE involved in any activities under this MOU must adhere to the rules and regulations of both the organizations.

Statement of Intent

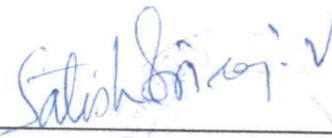
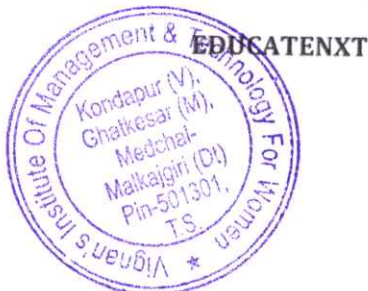
Nothing in this MOU shall be construed as creating any legal relationships between the parties. This MOU is a statement of intent to foster genuine and mutually beneficial collaboration. The INSTITUTE and the COLLEGE welcome the establishment of this MOU for cooperation and jointly agree to the provisions as set out above. This MOU will be effective from the date of its signing.



Authorized Signatory

Mr. P. GOPINATH

Head - Institutional Alliances



Authorized Signatory

Mr. V. SATISH SRI RAJ

Head - Training & Corporate Relations

**VIGNAN'S INSTITUTE OF MANAGEMENT
AND TECHNOLOGY FOR WOMEN (VMTW)**



PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



Memorandum of Understanding

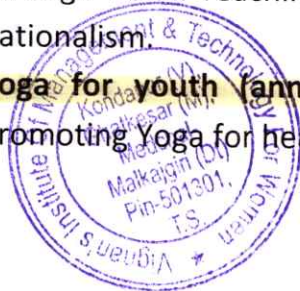
This Memorandum of Understanding is entered on the 30th December 2021 between **SAMSKRUTI FOUNDATION** and **Vignan's Institute of Management and Technology for Women, Kondapur** for the setting-up of **Cultural Leadership Center, involving faculty and students of the college, who will receive mentoring support from SAMSKRUTI FOUNDATION for leadership roles.**

Background of Samskruti Foundation: Samskruti Foundation is a registered trust consisting of prominent and accomplished senior civil servants, professionals and corporate citizens. It is constituted under section 4 of Indian Trust Act 1882 with registration no. 000124/2009. It has been striving towards promoting Nation Building activities among the youth of the society in Telangana and across India.

This MoU is to build young leaders who will preserve, protect and encourage practice of the Bhartiya Culture and Ethos through research, education, training, and dialogue.

Through this MOU, Samskruti Foundation intends to set up and support a **Cultural Leadership Center**, in the college premises. The Cultural Leadership Center will be expected to conduct all the following activities.

- **Vivek Band (annual):** An activity promoting leadership through Be Good-Do Good activities useful and relevant to the community during January which happens to be month in which Sri. Swami Vivekananda and Sri. Subhash Chandra Bose were born.
- **Samskruti Samvad (ongoing):** An activity which focuses on student personality development through debates, discussions, and lectures on topics relevant to the Bhartiya cultural value system that has relevance to them.
- **Rakhi for soldiers (annual):** To connect the students with our armed forces by celebrating Raksha Bandhan with them in person and connecting with them through Rakhi reaching out to the remote border areas building the spirit of nationalism.
- **Yoga for youth (annual):** Helps students explore the overall wellbeing by promoting Yoga for healthy physical and psychological growth.



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PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur, Medchal-Malkajgiri(Dt)-501301



Expectations from the College:

- To assign a faculty who will be responsible to oversee and run the Cultural Leadership Center. This center is also expected to have a group of dedicated core student leaders.
- Coordinates with Samskruti Foundation to execute all the above-mentioned annual events.
- Work with Samskruti Foundation in creating relevant activities under the Cultural Leadership Center.
- Ensure participation of all students in the above mentioned said events and connecting resources and infrastructure.

Expectations from Samskruti Foundation:

- Design and provide execution plan for all cultural leadership activities conducted in the college annually.
- Communicate with the college on opportunities that are relevant to the Cultural Leadership Center.
Co-ordinate with the college for successful conduct of Cultural Leadership Center activities with the involvement of prominent resource persons.
- Certify and encourage student leaders and faculty members involved in the Cultural Leadership Centre.

Samskruti Foundation

Sign

Name:

N. Seethyawathi

Designation:

Yoga Instructor

Vignan's Institute of Management
and Technology for Women

Sign

Name:

Dr. G. Apparao Naidu

Designation:

Principal

PRINCIPAL

Vignan's Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), R.R. Dist-501 301
Telangana State



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VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(Sponsored by Lavu Educational Society)

[Affiliated to JNTUH, Hyderabad & Approved by AICTE, New Delhi]



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- by promoting Yoga for healthy physical and psychological growth

Kondapur Village, Ghatkesar Mandal, Medchal - Malkajgiri District - 501301

Phone : +91 96529 10002/3, E-mail : info.vmtw@gmail.com, hyd.vmtw.principal@gmail.com

Website : www.vmtw.in



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Samskruti Foundation

Sign

Name: N. Sathyanavathi

Designation: Yoga Instructor

Vignans Institute of Management

and Technology for Women

Sign

Name: Dr. G. Aparnao Naidu

Designation: Principal

PRINCIPAL

Vignans Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), R.R. Dist-501 301
Telangana State

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Vignans Institute of Management & Technology For Women
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Phone +91 96529 10002/3, E-mail : info.vmtw@gmail.com, hyd.vmtw.principal@gmail.com

Website : www.vmtw.in





CERTIFICATE OF COLLABORATION

This certificate expresses strategic collaboration between
EdifyPath (Edify Educational Services Pvt. Ltd.)



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

for the synergic establishment of allegiance.

KESARA CHAITANYA, SALES HEAD



PRINCIPAL

Vignans Institute of Management & Technology For Women
Ghatkesar(V), Ghatkesar(M), Medchal-Malkajgiri(DI), 501301
Telangana State

MEMORANDUM OF UNDERSTANDING

This MEMORANDUM OF UNDERSTANDING ("M.O.U" / "Agreement") is made as on the day Wednesday, 8th December, 2021 by and between

Edify Educational Services Pvt Ltd, located at Hitech City, Hyderabad hereafter referred as "EdifyPath" which expression shall unless repugnant to the contest or meaning thereof include its successors and assignees.
And

"VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN" located at "Kondapur, Ghatkesar, Medchal Dist-501301", hereafter referred as "College", which expression unless repugnant to the context or meaning thereof be deemed to include, legal representative, executors, administrators, successors and permitted assigns of the other PART.

Each individually a Party and collectively referred to as Parties.

WHEREAS, the EdifyPath and College have come together to collaborate for up-skilling the students of College under subscription of EdifyPath Certification Program and providing opportunities for Internship and jobs to excellent students

WHEREAS As of the date hereof both Parties as above have expressed a desire of entering into a Memorandum of Understanding (M.O.U) agreement to meet their respective objectives, which are set out here in below.

NOW, THEREFORE, it is hereby agreed by and between the undersigned Parties as follows:

BACKGROUND OF THE PARTIES

EdifyPath is a global online experiential e-learning platform that is focused on bridging the talent-gap across rising technology demands and helping learners acquire industry-specific skills that make them corporate-ready and ease their transition into the corporate world. EdifyPath offers a range of professional certified courses by various industry experts which are high in demand in the current day job markets. Its association and tie-ups with global industry leaders gives EdifyPath an edge in designing unique content that keeps our learners much ahead in the learning curve. EdifyPath through one of its unique offerings "EdifyTalks" provides unique power clips from industry leaders and senior executives that offer valuable insights for career prospects to its learning community.

College is an Education institute that intends to offer its students a globally relevant learning experience, by providing high quality, affordable and accessible education. College through the process of co-creation intends to elevate its students to serve the emerging talent needs of Industry. .



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info@edifypath.com
www.edifypath.com



Villa No 32, G Floor, Bollineni Homes
Madhapur, Hyderabad-500081



+91 40 4425 1111
+91 40 4425 1122



info@edifypath.com
www.edifypath.com

PURPOSE:

The purpose of the collaborative relationship contemplated by this M.O.U is for College to promote a talent pool of young students, while facilitating their upskilling using EdifyPath's Platform (as defined below) and enabling them acquire new and relevant competencies as per the current market requirements and for EdifyPath to nurture the young talent, making the students more employable and industry ready ("Purpose"). For Achieving the Purpose, either parties hereby agree to collaborate with each other and enter into this MOU for non-commercial purposes and further agree that the relationship contemplated by this MOU is non-monetary in nature.

DELIVERABLES:

EdifyPath:

EdifyPath agrees to provide the following forms of support to the College on a good faith basis:

- a. Provide access to a world of knowledge across rising technology demands and helping its learners acquire industry specific skills
- b. Provide access to Edify Talks to enable learners gain insights from industry leaders and senior executives that will help in getting the bigger picture of various industries and the required competencies (domain, technical, behavioral and communication) to enter and excel in the career.
- c. EdifyPath to extend at a special promotional Price, which shall be applicable exclusively for the College.
- d. EdifyPath to provide services enabling its learners acquire new competencies in accordance with current market requirements anytime, anywhere upon subscription.
- e. EdifyPath to provide opportunities for Internship and placement support for excelling candidates upon successful completion of EdifyPath Certification Program(s).
- f. EdifyPath to conduct Technical workshops for the Students of College.
- g. EdifyPath to provide access to Khelo Application as part of the subscription as per the terms detailed below in this Agreement.

College Deliverables:

College by and through its principals and agents, agrees to provide opportunities to "EdifyPath" and its center of excellences, as appropriate, on a good faith basis,

- a. To promote EdifyPath and EdifyTalks amongst the student community, faculty and staff for skill- development.
- b. To support EdifyPath in to run running awareness campaigns in College premises.
- c. To render any additional support to achieve the deliverables mentioned in this Agreement.




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Platform:

EdifyPath will provide College access to its online learning interface where College can access the courses, content, marketing materials that are being offered including a limited period subscription to certain third party applications and materials as a value addition to the products being offered to College.

License Grant

Except for the license and access rights granted in this Agreement, nothing in this Agreement grants any title or ownership interest in or to any Intellectual Property Rights in or relating to, the Platform, marketing materials or third party materials, whether expressly, by implication, estoppel or otherwise. All title and ownership interest in and to the Platform, marketing materials and the third party materials are and will remain with EdifyPath and the respective rights holders in the third party materials.

Khelo College Clad Application:

As part of the offerings and through its collaboration with third parties and as a value addition, EdifyPath will provide a limited period free subscription and access to the Khelo College Clad Application ("Khelo") for the benefit of College for a period of 12 months from the Effective Date ("Initial Period"). Khelo will be a complimentary product offering provided pursuant to this Agreement that either works as an independent application or as an integrated application with the Platform. Khelo is being offered as part of the service offering which can provide for student engagement through knowledge sharing, event hosting, contests, promotional events and sharing of articles, contents among the students etc. Post the expiry of the initial period certain subscription fee might be applicable for continued utilization of Khelo as agreed upon between the College and the applicable third party owners.

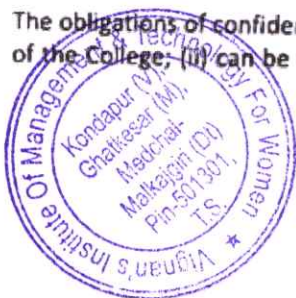
Disclaimer of warranties:

Except for the express warranties provided in this Agreement, all applications, the Platform and materials are provided "as is" and EdifyPath hereby disclaims all warranties, whether express, implied, statutory or other, and EdifyPath specifically disclaims all implied warranties of merchantability, fitness for a particular purpose, and all warranties arising from course of dealing, usage or trade practice. Without limiting the foregoing, EdifyPath makes no warranty of any kind that the applications, the platform, materials, or any products or results of the use thereof, will meet College's or any other person's requirements, operate without interruption, achieve any intended result, be compatible or work with any software, system or other services except if and to the extent expressly set forth in the specifications, or be secure, accurate, complete, free of harmful code or error free. All third-party materials are provided "as is" and any representation or warranty of or concerning any third party materials is strictly between College and the third-party owner or distributor of the third-party materials.

Confidentiality:

College will hold in strict confidence the confidential information disclosed by EdifyPath in furtherance of this Agreement. College shall use the confidential information in accordance of the terms and solely for achieving the Purpose of this Agreement. College agrees not to disclose confidential information to any other parties without the prior written consent of EdifyPath. College will exercise at least the same degree of care it uses to protect its own confidential information.

The obligations of confidentiality do not apply to information (i) that becomes publicly available for no fault of the College; (ii) can be demonstrated by written evidence that it was in the possession of the receiving




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Party prior to receipt from EdifyPath; (iii) independently developed by the Parties without use of information disclosed by the other Party.

Limitation of liability

The Parties shall not be liable for any incidental, special, indirect or consequential damages arising out of or relating to this Agreement.

Intellectual Properties:

College hereby grants EdifyPath a royalty-free, non-exclusive, non-transferable, non-sub licensable, limited term license to use College's marks solely for the purpose of aligning the appearance of its products branding and only as specifically authorized by, and subject to any restrictions stated in, this Agreement. Such license shall be limited to the duration of this Agreement. During the Term of the Agreement, EdifyPath may include College in any of EdifyPath's customer lists and testimonials, solely for the purpose of identifying College as a customer of EdifyPath. EdifyPath acknowledge that the provisions of this paragraph do not convey any right, title or ownership interest in College's marks to EdifyPath Except for the license and access rights granted under this Agreement nothing in this Agreement grants any title or ownership interest in or to any Intellectual Property Rights of one Party to the other. College hereby unconditionally and irrevocably grants to EdifyPath an unrestricted license to use including all Intellectual Property Rights relating thereto.

Information Sharing:

In connection with this Agreement either Parties shall during the Term of this Agreement shall provide, accommodate and make available as required access to each other's information (students databases by College and any customer information shared by EdifyPath) and hereby agree to share such information with each other solely for the accomplishment of the Purpose of this Agreement. Either Parties acknowledge and agree not to use, decimate to any third party, share or use such information for any other purposes otherwise than as stated in this Agreement and hereby agree to maintain such information in strictest confidence.

Term of the Agreement

This Agreement shall commence from the Effective Date above and shall continue to be in force unless terminated by either Parties as per the terms of this Agreement ("Term").

Marketing Collaboration:

Either Parties to this Agreement agree to cooperate with each other in the marketing and promotion of the products and services of the Parties in furtherance of achieving the Purpose of this Agreement. Such cooperation shall include the reasonable provision, at the Party's expense, reasonable participation and assistance, as agreed to by the Parties, with trade shows, conferences, company sales conferences and education seminars etc.

Termination

The engagement contemplated between the Parties under this M.O.U. is at-will. Upon the discretion of the either of the Parties the collaborative relationship under this M.O.U. may be terminated with an advance written notice of 30 days to the other Party. Upon termination of the Agreement for any reason either




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Entire Agreement

This M.O.U. is the final and complete understanding and agreement of the undersigned Parties. No other promises, agreements, nor warranties have been provided. This M.O.U. may only be amended by a written agreement as provided in this M.O.U.

Applicability

The terms and provisions in this MOU also apply to any subsequent Addendum(s) to this Agreement

IN WITNESS WHEREOF, the undersigned Parties hereto have executed this MOU on the day Wednesday 8th December.2021

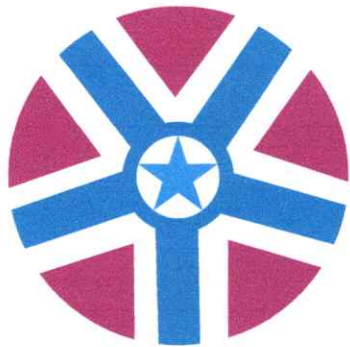
	Edify Educational Services Pvt. Ltd.		College
Signature		Signature	
Name	K E Ajaya Varma	Name	Principal
Title	Business Development Manager	Title	Principal



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Vignans Institute of Management and Technology For Women
Kondapur (V), Ghatkesar (M), R.R. Dist-501 301
Telangana State



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Vignans Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Maikajiri(Dt)-501301
Telangana State



MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

**VIGNAN'S INSTITUTE OF MANAGEMENT AND
TECHNOLOGY FOR WOMEN**

AND

HUAWEI SERVICES (HONG KONG) CO., LIMITED

1ST DECEMBER, 2021

AGREEMENT NO.# FOU35621000326



DR. G. APPARAO NAIDU
PRINCIPAL, VMTW

MR. WANG ZHIHUI
DIRECTOR, HUAWEI SERVICES (HONG KONG)

PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondepur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
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Memorandum of understanding (“MOU”)

Between

**Vignan’s Institute of Management &
Technology for Women**

And

Huawei Services (Hong Kong) Co., Limited

Dec 1st2021

Agreement NO#:F0U35621000326




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Party A: Vignan's Institute of Management & Technology for Women (VMTW)

Address: Dist, Ghatkesar, Kondapur, Telangana 501301

Party B: Huawei Services (Hong Kong) Co., Limited (hereinafter referred to as "HUAWEI" or "Huawei")

Address: Room 03, 9th Floor, Tower 6, The Gateway, No. 9 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong

Huawei and VMTW are hereinafter individually referred to as the "Party" and collectively, the "Parties".

Part I: Cooperation Provisions

• Cooperation background

In order to respond to the Global digitalization needs, comprehensively promote the collaboration of Academic institutes and enterprises in education, give full play to the advantages of both universities and enterprises, train more high-quality and high-skilled applied talents with good professional knowledge and practical skills for the society, and promote the deepening of educational reform in universities and improve the quality of talent cultivation, based on the principles of resource sharing, complementarity, mutual benefit and common development, both universities and enterprises actively explore the establishment of pluralistic, multi-level and multi-form cooperative relations between universities and enterprises.

• Company Overview:

HUAWEI Mobile Services is part of Huawei Consumer Business Group which aims to provide a complete mobile experience to HUAWEI mobile users. The users can enjoy official services such as Mobile Cloud, AppGallery, Videos, and Themes etc. which comes along with EMUI operating system. HMS covers 570 million users in over 170 countries, serving a smart living experience to benefit users. In the era of a fully connected world, HUAWEI will provide a better user experience and fulfilling commitment to bring the world closer together.



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Huawei is a leading global provider of information and communications technology (ICT) infrastructure and smart devices. With integrated solutions across four key domains which are telecom networks, IT, smart devices, and cloud services. Huawei is committed to bringing digital to every person, home and organization for a fully connected, intelligent world.

As one of Huawei's three business groups, Huawei Consumer Business Group is the leader of all-scenario AI life. It covers smartphones, PC and tablets, wearables, mobile broadband devices, family devices and device cloud services. Huawei Consumer Business Group is dedicated to delivering the latest technologies to consumers and sharing the happiness of technological advances with more people around the world.

- **Cooperation Mode and Content**

After friendly negotiation, both parties agree to carry out an online training course/session on Mobile Application Development in the HUAWEI Mobile Services (HMS) ecosystem for the students of the Institute.

- **Objective/Purpose:**

The key objective is to provide a learning and training platform to students of the Institute who are interested, dedicated and passionate to learn and do some innovation in the space of mobile app development using HMS. This training program will provide an opportunity for the students to upgrade their skills and showcase their hidden talent by coming out with innovative and smart mobile apps that can have a significant impact on society, the nation and the entire humanity.

The most active and top performers or innovators will be recognized under HSD Program and will be rewarded in the form of certificate for their hard and smart work to continue represent the HMS community and conduct regular community activities.

- **Plan of Action/Scope of Work:**

Tasks and Responsibilities from Huawei side:

- The **Future of App Industry Webinar** will be conducted by Huawei experts for all students.
- Webinar includes industry insights, developer account registration, HMS capabilities and HMS Foundation course details.



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- Webinar will be conducted using **Stream yard** and **Facebook live**.
- The HMS Foundation course training will be conducted by the HMS expert for the interested students and Lecturers.
- The training duration will be of 5 weeks.
- The programming language will be **Java**
- The course will start from December 2021 Third week and expected to get complete before by last week of Jan 2022.
- The **Zhumu** will be used to create virtual classes for students with professors.
- The training session will be both theoretical and practical classes including Hands-on experience.
- Exams for students and feedbacks for trainers will be taken to evaluate their performances.
- During the training, students will be encouraged to build sample applications and release applications in **AppGallery**.
- Huawei team will provide end to end support in resolving all technical **queries, doubts, application development** and **deployment** with respect to HMS.
- After the course completion, Huawei will support all the eligible participants to get the **Certificate**.

Tasks and Responsibilities from Institute side:

- To circulate the Future of App Industry Webinar information to all the students and makes students to join the student developer Facebook group.
- To encourage all students to register Huawei developer account.
- To facilitate the interested students to join the training sessions with appropriate guidance.
- To appoint Lecturer and support staff as coordinators between Huawei and students.
- The Institute will explore the possibility to provide maximum number of students for every training session.



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- Lecturers to recommend suitable students for Student community organizer Role.
- Lecturers and other support staff members will encourage the students complete assigned tasks and bridge the communication gaps.

Course Structure with Timelines

Focus Area	Week	Content	Date/time	Total Duration(demo, Q&A)
Android Basics	Week 1	Write your first App, Activities and Lifecycle, Permissions	TBD	2 Hour
		UI Layout, UI Controls		
		Services		
		Broadcast Receiver, Notification		
		Database		
Huawei Mobile Services Basics	Week 2	Account Kit	TBD	2 Hour
		Location Kit		
		Map Kit + Site Kit		
		Video kit		
		Scan Kit		
Huawei Mobile Services Basics	Week 3	Push Kit	TBD	2 Hour
		Ads Kit		
		Health Kit		
		Audio Kit		
		Game Service		
Huawei Mobile Services Advanced	Week 4	ML Kit	TBD	2 Hour
		Analytics Kit + Crask SDK		
		Awareness Kit		
		Image Kit		
		HMS + GMS Solutions		
App Gallery Connect + App Release	Week 5	HMS Toolkit - Cloud Testing	TBD	2 Hour
		HMS Toolkit - Cloud Debugging		
		A/B Testing		
		App Release		

Train the trainer program for HMS foundation course

- 10 Lecturers can join the Foundation course along with Students
- Lecturer need to learn all the topics and develop applications along with students
- If the Application selected is big and complex, Lecturer can lead batch 4-5 students and develop the application
- Lecturers can apply for the program Huawei Academy Lecturer
- Once Lecturer get selected, Lecturers can contribute articles and videos on Huawei developer forum & training portal
- Lecturers also can produce advanced training videos and developer stories/case studies on Huawei training platform

Guidelines to be followed:

- The Institute will liaise with the students in registering them & making them attend the sessions without any difficulties.




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- All the students should create their Huawei Id for accessing HMS Kits and other services for building mobile applications and deploying in AppGallery.
- Students who completes the entire course and successfully deploy an application into AppGallery are eligible for a certificate.
- The certificates will clearly highlight the logo of Huawei along with the name of the participant, course title, appropriate seal and signatures in digital format.
- Only soft copies of the Certificate (e-Certificate) to be provided and no hardcopies.
- Top performing students can support in mentoring other students and resolving an initial set of queries.
- The Institute can recommend selective potential students for the role of Huawei student developer organizer, but the final call has to be taken by the HMS team.

Future Plans:

- Based on the successful execution of this training program we can plan for an extension of the training sessions with some advanced tutorials having more and more hands-on sessions.
- Institute can adopt HMS content in Curriculum
- Huawei can provide an opportunity for suitable students to become Huawei Developer Experts and Huawei Community Leaders.

Curriculum system construction

In order to achieve the goal of cultivating practical and complex talents, the curriculum design and adjustment of talent cultivation plan are based on the needs of enterprises and industries. Based on HMS and HarmonyOS technologies, build a flexible curriculum system, integrate the curriculum into the college teaching system, set corresponding credits, and jointly develop teaching plans and talent cultivation solutions that meet enterprise requirements. Explore a teaching model driven by industry requirements and centered on engineering practices. The curriculum of teaching planning emphasizes the foundation, strengthens practical technology, case teaching and engineering practice.

Feedback Collection Mechanism:



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- An online feedback form will be shared to participants with a list of questionnaires finalized between the HMS team and Institute officials.
- The HMS team will collect the feedback and will share it with Institute officials.
- Based on the feedback from students, the HMS team will fine tune the ongoing sessions and will make necessary changes.

Terms and Conditions:

- Huawei will not be responsible for slow internet connectivity or network issues faced by the students during the entire training program.
- Huawei reserves the right with prior notification to make changes in the course structure, course duration, training topics and contents as mentioned above.
- Institute officials needs to provide prior notification to Huawei if postponing any particular training session or changing prefixed time slots.
- Trainers appointed by Huawei can only take the sessions and training materials approved by the HMS team will be used only during training sessions.
- The training timings can be decided based on the mutual discussions between the HMS team and Institute officials.
- All the training materials and training sessions will be provided in English language only.

Part II: General Provisions

1. Legal Effect

The Parties understand and agree that, except for all clauses of Part II General Provisions specified herein, this MOU only reflects the intent of the Parties and shall not be binding upon the Parties, not intended to create any rights or obligations between the Parties.



24/11/20
PRINCIPAL
 Vignar's Institute of Management & Technology For Women
 Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
 Telangana State



2. Confidentiality

2.1 Unless otherwise agreed in writing, neither Party shall disclose to any third parties or make public announcements of the mere fact that the Parties (i) are discussing or intend to initiate discussions on the subject matter hereof or the possibilities to enter into any partnership; or (ii) are contemplating to enter into or have entered into or have terminated any partnership.

2.2 All technical and commercial information provided to the receiving Party ("Recipient") by the disclosing Party ("Discloser") during the negotiation, execution and fulfillment of this MOU, including but not limited to the content of this MOU and the existence of this MOU, shall be deemed to be the Confidential Information.

2.3 The Recipient shall keep all the Confidential Information provided by the Discloser secret and confidential and refrain from disclosing such Confidential Information to any third parties in any manner without prior written consent of the Discloser. The Recipient shall use the Confidential Information only for the purpose of performance of this MOU and shall use reasonable care to protect such Confidential Information.

3. No Rights Granted

Nothing in this MOU shall be construed as one Party granting any expressed or implied rights or license under any patent, copyright or other its intellectual property rights to the other Party.

4. Term and Termination

4.1 This MOU shall become effective upon the day and date last signed and executed by the duly authorized representatives of the Parties and remain in force for a period of Three years.



Vignar's Institute of Management & Technology For Women
PRINCIPAL
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DY), 501204
Telangana State



4.2 One Party shall have the right to immediately terminate this MOU upon written notice to the other Party in any of the following events:

- (a) The other Party is in material breach of this MOU and fails to remedy the breach within thirty (30) days of written notice complaining thereof from the terminating party; or
- (b) The other Party becomes insolvent or becomes subject to bankruptcy or reorganization or similar procedures for the relief of debtors, or makes a general assignment for the benefit of debtors, or any application therefore; or
- (c) The other Party decides to sell or transfer business concerning this MOU without the prior written consent from the terminating party; or
- (d) The other Party decides to dissolve or be liquidated; or
- (e) The other Party is subject to any substantial change of ownership, including due to any takeover or merger with another company.

4.3 Upon the termination of this MOU, one Party shall promptly return to the other Party all the Confidential Information and copies received from the other Party.

4.4 All clauses of Part II General Provisions shall survive any termination of this MOU.

5. Governing Law and Dispute Resolution

5.1 This MOU shall be construed in accordance with and governed by the laws of Hong Kong, without giving effect to principles of conflicts of law.

5.2 All disputes arising under the terms of this MOU shall be settled amicably through negotiations between the Parties firstly. In the event




PRINCIPAL
Vignani's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
Telangana State



such disputes cannot be settled amicably through negotiations within a 30-day period, they shall be submitted to the Hong Kong Courts.

6. No Warranty

All information and materials provided by Huawei to Party A hereunder shall be provided "AS IS" without warranty of any kind, and Party A understands and agrees that Huawei shall not be liable for any loss whatsoever arising from or relating to Party A's use or inability to use such information or materials.

7. Miscellaneous

7.1 Either party shall bear its own cost and expenses which may be incurred in the fulfillment of this MOU.

7.2 All headings used in this MOU are inserted for convenience only and shall not affect the meaning or interpretation of any portion of this MOU.

7.3 This MOU constitutes the entire agreement between the Parties with respect to the subject matter hereof and supersedes all prior agreements and negotiations relating thereto. This MOU may not be amended except with the prior written consent of both Parties.

7.4 Neither Party shall assign any of its rights and obligations under this MOU without the prior written consent of the other Party.

7.5 This MOU is executed in duplicate, one for Huawei and the other for Party A. Each copy shall have the same legal force.




PRINCIPAL
Vignani's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



Party A: Vignan's Institute of Management & Technology for Women. (Stamp)

Authorized representative (s):

Signature: 

Name: Dr. G. Apparao Naidu

Designation: Principal

Date: 22/12/2021

PRINCIPAL
Vignan's Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), R.R. Dist-501 301
Telangana State



Party B: Huawei Services (Hong Kong) Co., Limited (Stamp)

Signature: 

Name: Wang Zhihui

Designation: Director

Date: 22-04-2022




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DI)-501301
Telangana State





EDUGENE

TECHNOLOGIES Pvt.Ltd.
Transforming in to Digital World....

Memorandum of Understanding (MoU)

This Memorandum of Understanding (MoU) has been executed on the 29th day of September of 2021 between **Vignan's Institute of Management and Technology for Women**, situated at Kondapur(V), Ghatkesar (M), Medchal (Dist) - 501301 (hereinafter referred to as "**Client**"), which expression shall unless repugnant to the context, be deemed to include its successors in title, in interest and in right etc., and permitted assigns.

And

Edugene Technologies Private Limited, situated at SyNo: 92 & Amp:93, Flat No 7, 1 st Floor SR Towers, Dilsukhnagar, Hyderabad 500060 (hereinafter referred to as "**Service Provider**"), which expression shall unless repugnant to the context, be deemed to include its successors in title, in interest and in right etc., and permitted assigns.

1. Objective

Enabling student employability by facilitating access to their alumni and providing access to programs, opportunities and partners across themes like internships, placements, skill development, assessments, entrepreneurship etc.

2. Scope of Services

The following would be the services provided by the Service Provider:

- 2.1. Set up the basic version of the College Community Portal. Orient and train the Single Point of Contact ("**SPOC**") from the college and the Student Ambassadors on usage of the same. Best practices about managing the portal to maximize value would be shared from time to time. The college can access the technical helpdesk for resolving specific queries.
- 2.2. Provide access to the Service Provider's Employability Portal. This would have features and content across themes like Career Orientation, Assessments, Skill Development, Internships and Placements. The college can utilize the same to keep track of all training and placement related activities. Orient and train the SPOC & Student Ambassadors on usage of the same.
- 2.3. Provide offline support to the college in various employability related activities like career orientation sessions, on-ground internship/ placement drives etc.

3. Responsibilities of the Client

- 3.1. Provide student/ alumni data in the required format for uploading into Community Portal as well as the Employability Portal.
- 3.2. Identify and on-board 5-8 Student Ambassadors to activate the student community towards maximizing the benefits of these portals for the student community.




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

3rd Floor, Above SBI Bank, Arunodaya Colony, Hi-Tech Theater Line, Opp: Metro Pillar No: C1758, Madhapur.

www.edugenetechologies.com

Ph: +91-9492494922.



- 3.3. Administer and manage the Community Portal as well as the Employability Portal as per the guidelines provided from time to time by the Service Provider.
- 3.4. Activate the student, alumni, faculty community towards adopting these portals.

4. Validity of this Agreement

- 4.1. This MoU will be operational and valid for one year from the date of signing or until the date of earlier termination. The MoU can then be renewed with mutual consent of both the parties.
- 4.2. Either party may terminate this agreement by providing notice of at least thirty days in advance in writing.

In witness whereof, the parties hereto have caused this Memorandum of Understanding to be executed by their representatives in duplicate, each party retaining one (1) copy thereof respectively.

For and on behalf of

**Vignan's Institute of Management Technology
For Women**

PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Name : Dr. G. Apparao Naidu

Designation: Principal

For and on behalf of

Edugene Technologies Pvt Ltd

Name: Bandi Bhanu Prakash

Designation: CEO



PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

CYIENT

Memorandum of Understanding

This Memorandum of Understanding (MOU) for Training from 20th of September 2021 by and between:

(A) Vignan's Institute of Management and Technology for Women, Kondapur(V), Hyderabad, Medchal Dist- 501301 her in after referred to as "VMTW" or the "Client" (which expression unless excluded by or repugnant to the context shall mean and include its successors, its authorized representatives and permitted assignees) of the ONE PART.

AND

(B) **CYIENT LIMITED**, and having its registered office at 4th Floor, A Wing, 11 Software Units Layout, Madhapur, Hyderabad, 500081, India hereinafter referred to as "CYIENT" or the "Service Provider", which expression shall unless excluded by or repugnant to the context include its successors and assigns) of the OTHER PART.

The Client and the Service Provider shall be individually referred to as "Party" and collectively as "Parties".

WHEREAS the Client is desirous that the Service Provider provide CRT — Training, Workshop, Internship to its students (hereinafter called "Services") in accordance with the Moll.

Target Audience: 3rd & 4th Year of Engineering Students Program Type: CRT Training Program, Workshop, Internship.

Now this MOU Witnessed as follows:

1. In this MOU, words and expression shall have the same meanings as are respectively assigned to them in the documents deemed to form and be read and construed as part of this MOU;
2. In consideration of the payments to be made by the Client to the Service Provider as per the MOU, the Service Provider hereby covenants with the Client to execute and complete the Services in accordance with the provisions of the MOU;
3. The Client hereby covenants to pay the Service Provider in consideration of the successful execution and completion of the Services wherein the Fee becomes payable under the provisions of the MOU at the times and in the manner prescribed by the MOU.
4. The following documents shall be deemed to form and be read and construed as part of this MOU, viz.

Cyient Ltd.



4th Floor, A Wing, 11 Software
Units Layout, Madhapur,
Hyderabad - 500 081
India

www.cyient.com
CIN:L72200TG1991PLC013134
T:+91 406704 1000
F:+91 402311 0352


PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

CYIENT

- (i) This MOU between the Client and the Service Provider;
 - (ii) The proposal submitted by the Service Provider read in accordance with this MOU. Any discrepancy between the terms and conditions indicated in this MOU and Service Provider's proposal, the terms indicated in this MOU shall prevail.
5. Applicable Law: This MOU shall be interpreted and construed only in accordance with Laws of Republic of India.
6. Jurisdiction: The courts within Hyderabad, Telangana, and India alone will have Jurisdiction in respect of the matters arising in connection with and/or under this MOU.
7. No amendment to this MOU shall be valid or be of any affect unless the same is agreed to in writing by both the Parties hereto and specifically stated to be an amendment to this MOU
8. CYIENT LIMITED will collect 30% of the total Fee as an advance toward the training program to be delivered at the signing of MOU

In witness whereof the parties here to have caused this MOU to be executed the day and year first before written:

IN WITNESS WHERE OF each Party has executed this MOU on the date first mentioned above.

Signed and delivered by



PRINCIPAL
Vignan's Institute of Management and
Technology for Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri,
Telangana State

Signed and delivered by



CYIENT LIMITED

Cyient Ltd
4th Floor, A Wing, 11 Software
Units Layout, Madhapur,
Hyderabad - 500 081
www.cyient.com
CIN:L72200TG1991PLC013134
T:+91 406704 1000
F:+91 402311 0352



Vignan's Institute of Management & Technology for Women
Kondapur (V),
Ghatkesar (M),
Medchal-Malkajgiri (Dt)-501301,
T.S.



PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

MEMORANDUM OF UNDERSTANDING (MoU)

BETWEEN

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN
Kondapur, Ghatkesar, Hyderabad

AND

M/s STEMWORLD INNOTECH LLP, Hyderabad

This Memorandum of Understanding (hereinafter called as the 'MoU') is entered into on Friday of 17th September 2021.

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, Kondapur, Hyderabad, the First Party represented herein by its **Principal Dr.G. Apparao Naidu**, and **M/s STEMWORLD INNOTECH LLP, Hyderabad**, the Second Party and represented herein by its **Founder & CEO, Mr. P. Gyaneswar**.

WHEREAS:

A) First Party is a Higher Educational Institution named: **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN (VMTW)**, a leading Engineering college for women, was founded by **Dr. L. Rathaiah** in 2008, with an objective to provide quality education in Engineering. VMTW is approved by AICTE and is affiliated to JNTUH, Hyderabad with accreditation from NBA. VMTW offers 6 B.Tech and 2 M.Tech programmes with 1440 students enrolled in B.Tech and 42 in M.Tech stream. Its excellent infrastructure provides opportunity for students to excel and secure placements in top MNC's on par with NITs, IITs and IITs.

B) First Party & Second Party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.

C) The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education, Placement, Industrial Visit, Expert Lecture.




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

D) M/s STEMWORLD INNOTECH LLP, Hyderabad, - the Second Party is engaged in

- a) Consultancy Work
- b) Internship cum Placement opportunities
- c) Conduct boot camps and hackathons across different technological platforms.
- d) Software Development
- e) Faculty Development programs
- f) Bootcamps
- g) Seminars/Workshop on recent developments in the field of Computer Science.
- h) Imparting on training to faculty on emerging areas. Providing opportunity to students to work with the technology available at Resource Sharing.

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MOU, THE PARTIES HERETO AGREE AS FOLLOWS:

CLAUSE 1: CO-OPERATION

- 1.1 Both Parties are united by common interests and objectives, and they shall establish co-operation.
- 1.2 First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities.
- 1.3 The parties shall co-operate with each other and shall as promptly as is responsibly practical, relevant agreement.

CLAUSE 2: SCOPE OF THE MoU

2.1 **Industrial Training & Visits:** Industry and Institution interaction will provide an insight into the latest developments / requirements of the industries; the Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in **Industrial Training Programs** for the First Party. This will provide confidence & smooth transition for students work. Also, the Second party may register on the AICTE Internship Portal for the benefit of students.

2.2 **Guest Lectures:** Second Party to extend the necessary support to deliver guest lecturers to the students of the First Party on the technology trends and in house requirements.



PRINCIPAL

Vignani's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

2.3 **Placement of trained students:** second party will actively engage to help the delivery of the training and placement of the students of the first party on the technology trends and in house requirements.

2.4 There is no financial commitment on the part of the **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN**, the first party to take up any program mention in MoU. If there is any financial consideration, it will be dealt separately.

2.5 Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required.

CLAUSE 3: VALIDITY

3.1 This Agreement will be valid until it is expressly terminated by either Party on mutually agreed terms, during which period, the Second Part.

CLAUSE 4: RELATIONSHIP BETWEEN THE PARTIES

5.1 It is expressly agreed that First Party and Second Party are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership.

First Party



Dr. G. Apparao Naidu
PRINCIPAL

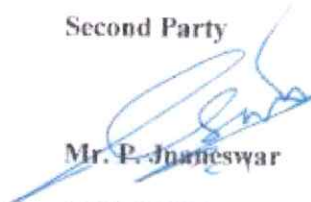
Vignan's Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (DT)-501301
Telangana State
AND TECHNOLOGY FOR WOMEN

Kondapur, Hyderabad -501301

Mail id: principal@gvmtw.in

Contact No: +91-9701330999

Second Party



Mr. P. Janeswar

FOUNDER & CEO

STEMWORLD INNOTECH LLP

Flat # 105, East Wing,

SVSS Nivas Street # 1

Czech Colony, Sanath Nagar

Hyderabad, 500018,

Contact No: +91-9652229397

CIN No: AAR-3200



PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
Telangana State

7



MEMORANDUM OF UNDERSTANDING (MoU)

BETWEEN

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN
Kondapur, Ghatkesar, Hyderabad
AND
M/s DECCAN SOLUTIONS, Hyderabad

This Memorandum of Understanding (hereinafter called as the 'MoU') is entered into on Friday of 10th September 2021.

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, Kondapur, Hyderabad, the First Party represented herein by its Principal Dr. G. Apparao Naidu, and M/s DECCAN SOLUTIONS, Hyderabad. The second party and represented herein by its Founder & CEO, Mr. Mohammed Abdul Razzak

WHEREAS:

A) First Party is a Higher Educational Institution named: VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN (VMTW), a leading Engineering college for women, was founded by Dr. L Rathaiah in 2008, with an objective to provide quality education in Engineering. VMTW is approved by AICTE and is affiliated to JNTUHI, Hyderabad with accreditation from NBA. VMTW offers 6 B.Tech and 2 M.Tech programmes with 1440 students enrolled in B.Tech and 42 in M.Tech stream. Its excellent infrastructure provides opportunity for students to excel and secure placements in top MNC's on par with NITs, IIITs and IITs.

B) First Party & Second Party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.

C) The Parties intent to cooperate their efforts on cooperation within area of Skill Based Training, Education, Placement, Industrial Visit, Expert Lecture.



Handwritten signature in green ink over a purple stamp that reads 'PRINCIPAL Vignans Institute of Management & Technology For Women Kondapur, Ghatkesar, Hyderabad (Pin-501301) Telangana State'.

12-2-825 Mehdiapalem, Hyderabad, T.S. Cont- 7670815985

D) M/s DECCAN SOLUTIONS, Hyderabad, - the Second Party is engaged in

- a) Consultancy Work
- b) Internship cum Placement opportunities
- c) Conduct boot camps and hackathons across different technological platforms.
- d) Software Development
- e) Faculty Development programs
- f) Bootcamps
- g) Project assistance to all the years of B Tech and M Tech Students.
- h) Seminars/Workshop on recent developments in the field of Computer Science.
- i) Imparting on training to faculty on emerging areas. Providing opportunity to students to work with the technology available at Resource Sharing.

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MOU, THE PARTIES HERETO AGREE AS FOLLOWS:


CLAUSE 1: CO-OPERATION

- 1.1 Both Parties are united by common interests and objectives, and they shall establish co-operation.
- 1.2 First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities.
- 1.3 The parties shall co-operate with each other and shall as promptly as is responsibly practical, relevant agreement.

CLAUSE 2: SCOPE OF THE MoU

2.1 **Industrial Training & Visits:** Industry and Institution interaction will provide an insight into the latest developments / requirements of the industries; the Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in Industrial Training Programs for the First Party. This will provide confidence & smooth transition for students work. Also, the Second Party to register on the AICTE Internship Portal for the benefit of students.




PRINCIPAL
Vignani Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DU)-501301
Telangana State

2.2 **Guest Lectures:** Second Party to extend the necessary support to deliver guest lecturers to the students of the First Party on the technology trends and in house requirements.

2.3 **Placement of trained students:** second party will actively engage to help the delivery of the training and placement of the students of the first party on the technology trends and in house requirements.

2.4 There is no financial commitment on the part of the **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN**, the first party to take up any program mention in MoU. If there is any financial consideration, it will be dealt separately.

2.5 Both Parties to obtain all **internal** approvals, consents, permissions, and licenses of whatsoever nature required.


CLAUSE 3: VALIDITY

3.1 This Agreement will be valid until it is expressly terminated by either Party on mutually agreed terms, during which period, the Second Part.

CLAUSE 4: RELATIONSHIP BETWEEN THE PARTIES

5.1 It is expressly agreed that First Party and Second Party are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership.

First Party

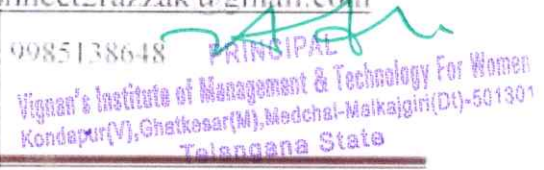

Dr. G. Apparao Naidu

THE PRINCIPAL
Vignans Institute of Management and Technology for Women
Kondapur (V),
VIGNAN'S INSTITUTE OF MANAGEMENT
AND TECHNOLOGY For Women
Telangana State
Kondapur, Hyderabad -501301
Mail id: principal@gvmtw.in
Contact No: +91-9701330999

Second Party


Mr. Mohammed Abdul Razzak

FOUNDER & CEO
M/s DECCAN SOLUTIONS
#12-2-825, Mehdiapatnam,
Hyderabad - 500028, T.S.
Mail id: connect2razzak@gmail.com
Contact No: 9985138648





MCEE SOLUTIONS PRIVATE LIMITED

MEMORANDUM OF UNDERSTANDING (MoU)

BETWEEN

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

Kondapur, Ghatkesar, Hyderabad

AND

M/s MCEE SOLUTIONS PRIVATE LIMITED, Hyderabad

This Memorandum of Understanding (hereinafter called as the 'MoU') is entered into on Thursday of 09th September 2021.

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, Kondapur, Hyderabad, the First Party represented herein by its Principal **Dr. G. Apparao Naidu**, and **M/s MCEE SOLUTIONS PRIVATE LIMITED, Hyderabad**, The second party and represented herein by its **Founder & CEO, Mr. Mohammed Abdul Kareem**

WHEREAS:

A) First Party is a Higher Educational Institution named: **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN (VMTW)**, a leading Engineering college for women, was founded by **Dr. L Rathaiah** in 2008, with an objective to provide quality education in Engineering. VMTW is approved by AICTE and is affiliated to JNTUH, Hyderabad with accreditation from NBA. VMTW offers 6 B.Tech and 2 M.Tech programmes with 1440 students enrolled in B.Tech and 42 in M.Tech stream. Its excellent infrastructure provides opportunity for students to excel and secure placements in top MNC's on par with NITs, IITs and IITs.

B) First Party & Second Party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.

C) The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Educational Placements, Industrial Visit, Expert Lecture.



[Signature]
PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



MCEE SOLUTIONS PRIVATE LIMITED

D) M/s MCEE SOLUTIONS PRIVATE LIMITED, Hyderabad. - the Second Party is engaged in

- a) Consultancy Work
- b) Internship cum Placement opportunities
- c) Conduct boot camps and hackathons across different technological platforms.
- d) **Software Development**
- e) **Faculty Development programs**
- f) Bootcamps
- g) **Project assistance** to all the years of B Tech and M Tech Students.
- h) **Seminars/Workshop on recent developments** in the field of Computer Science.
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PRINCIPAL

Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



MCEE SOLUTIONS PRIVATE LIMITED

2.2 Guest Lectures: Second Party to extend the necessary support to deliver guest lecturers to the students of the First Party on the technology trends and in house requirements.

2.3 Placement of trained students: second party will actively engage to help the delivery of the training and placement of the students of the first party on the technology trends and in house requirements.

2.4 There is no financial commitment on the part of the **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN**, the first party to take up any program mention in MoU. If there is any financial consideration, it will be dealt separately.

2.5 Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required.

CLAUSE 3: VALIDITY

3.1 This Agreement will be valid until it is expressly terminated by either Party on mutually agreed terms, during which period, the Second Part.

CLAUSE 4: RELATIONSHIP BETWEEN THE PARTIES

5.1 It is expressly agreed that First Party and Second Party are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership.

First Party

Second Party


Dr. G. Apparao Naidu


Mr. Mohammed Abdul Kareem

THE PRINCIPAL

FOUNDER & CEO

Vignan's Institute of Management and Technology for Women
VIGNAN'S INSTITUTE OF MANAGEMENT

M/S MCEE SOLUTIONS PRIVATE LIMITED

AND TECHNOLOGY For Women

#503, 5th Floor Manzil Chamber

Kondapur, Hyderabad -501301

Mehdipatnam, Hyderabad -

Mail id: principal@gvmtw.in

Mail id: hmceespl@

Contact No: +91-9701330999

Contact No: 8019505990

CIN No: U29308TG2019PT

PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
Telangana State



INTERNSHALA COLLEGE REGISTRATION AGREEMENT

This Agreement is executed on 26th August, 2021 by and between:

Scholiverse Educare Private Limited, having its registered office at 8-809, Unitech Business Zone, Nirvana Country, South City 2, Gurgaon, Haryana - 122018. acting through its authorized representative Mr. Shekhar Haider (hereinafter referred to as "**Internshala**") Head of University Relations at Internshala.

AND

Vignan's Institute of Management and Technology for Women, Kondapur(V), Hyderabad, Medchal Dist-501301 (hereinafter referred to as the "College" which expression shall, unless repugnant to the meaning or context thereof, be deemed to include its executors, representatives and permitted assigns) of the other Party: acting through its authorized Dr. G. Apparao Naidu, Principal.

Internshala and College may be referred to as Party' individually and as 'Parties' collectively, as the context may require.

Overview:

This agreement is regarding the college registration of Vignan's Institute of Management and Technology for Women' with 'Internshala'.

Responsibilities of Internshala:

- Provide all the students of the College with free student accounts and lifetime memberships.
- Provide weekly internship updates to all the students of the College.
- Provide an online resume maker to all the students of the College registered with Internshala.
- Send an online NOC (No Objection Certificate) to the College every time a student is hired for an internship through Internshala.
- Keep the student's details confidential at all times from any third party except the employers, whose interrship the student has himself/herself applied to.




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

Responsibilities of College:

- Provide the information of all students of the College as required by Internshala for their registration. The information should contain the first name, last name, mobile number and the email address of all the students of the College.
- Issue the online NOC to the students whenever they are selected for an internship.
- Inform all the students of the College about this collaboration and ensure that they verify their accounts on Internshala.

Term and Termination:

This agreement will be operational and valid from 26th August, 2021. Upon completion of one year, the agreement can be renewed with mutual consent of both parties.

Under normal circumstances, either party wanting to terminate the agreement can do so and it can be done on a mutually agreed upon date in a justified way with a notification given at least three months prior to termination date.

Confidentiality:

- Internshala and College will not disclose the details of this agreement and any private information that they come across when this agreement is in effect to any third-party.
- Internshala will not disclose or sell the contacts of registered users to any third-party.

Disputes:

The Parties shall attempt in good faith to resolve any dispute arising out of or relating to this Agreement promptly by negotiation between executives. Any dispute arising out, in connection with or relating to this Agreement, or the breach, termination or validity thereof, that has not been resolved by negotiation within thirty (30) calendar days after a Party's request for negotiation, would be resolved under the jurisdiction of Gurgaon court.

Miscellaneous:

Neither party will enter into an agreement with a third party on behalf of the other party.
Signed and Delivered by The Authorized Representative of Parties to this agreement:

For and on behalf of



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

Internshala
(Authorized Signatory)



[Signature]
PRINCIPAL
Vignan's Institute of Management and Technology for Women
(Authorized Signatory)
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt).....
Telangana State



CIN U74999TG2022PTC169718

AMBEST TECHNOVATION

CAMPUS TO CORPORATE CONECT

Memorandum of Understanding

This Memorandum of Understanding (MOU) for Training from 12th of August 2021 by and between:

(A) Vignan's Institute of Management and Technology for Women, Kondapur(V), Hyderabad, Medchal Dist- 501301 her in after referred to as "VMTW" or the "Client" (which expression unless excluded by or repugnant to the context shall mean and include its successors, its authorized representatives and permitted assignees) of the ONE PART.

AND

(B) Ambest Technovation Private Limited, and having its registered office at F. No:204, Boppana Towers, Guttala Begumpat, Kavuri Hills, NOB1721, Madhapur, Hyderabad, Telangana- 500081 India hereinafter referred to as "AMBEST TECHNOVATION PRIVATE LIMITED" or the "Service Provider", which expression shall unless excluded by or repugnant to the context include its successors and assigns) of the OTHER PART.

The Client and the Service Provider shall be individually referred to as "Party" and collectively as "Parties".

WHEREAS the Client is desirous that the Service Provider provide CRT Training, Workshop, Internship to its students (hereinafter called "Services") in accordance with the Moll.

Target Audience: 3rd & 4th Year of Engineering Students

Program Type: CRT Training Program, Workshop, Internship.

Now this MOU Witnessed as follows:

1. In this MOU, words and expression shall have the same meanings as are respectively assigned to them in the documents deemed to form and be read and construed as part of this MOU;
2. In consideration of the payments to be made by the Client to the Service Provider as per the MOU, the Service Provider hereby covenants with the Client to execute and complete the Services in accordance with the provisions of the MOU;
3. The Client hereby covenants to pay the Service Provider in consideration of the successful execution and completion of the Services wherein the Fee becomes payable under the provisions of the MOU at the times and in the manner prescribed by the MOU.




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghalkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State



+919640624444



AmbestTechnovation@gmail.com



Flat No 204, Boppana Towers, Andra
Basti, Guttala-Begumpet, Telangana



CIN U74999TG2022PTC169718

AMBEST TECHNOVATION

CAMPUS TO CORPORATE CONECT

4. The following documents shall be deemed to form and be read and construed as part of this MOU, viz.

(i) This MOU between the Client and the Service Provider;

(ii) The proposal submitted by the Service Provider read in accordance with this MOU. Any discrepancy between the terms and conditions indicated in this MOU and Service Provider's proposal, the terms indicated in this MOU shall prevail.

5. Applicable Law: This MOU shall be interpreted and construed only in accordance with Laws of Republic of India.

6. No amendment to this MOU shall be valid or be of any affect unless the same is agreed to in writing by both the Parties hereto and specifically stated to be an amendment to this MOU

7. AMBEST TECHNOVATION PRIVATE LIMITED will collect 30% of the total Fee as an advance toward the training program to be delivered at the signing of MOU

In witness whereof the parties here to have caused this MOU to be executed the day and year first before written:

IN WITNESS WHERE OF each Party has executed this MOU on the date first mentioned above.

Signed and delivered by

PRINCIPAL

Vignani's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State



Signed and delivered by

AMBEST TECHNOVATION LIMITED

PRINCIPAL

Vignani's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State



+919640624444



AmbestTechnovation@gmail.com



Flat No 204, Boppana Towers, Andra
Basti, Guttala-Begumpet, Telangana 58

MEMORANDUM OF UNDERSTANDING (MoU)

BETWEEN

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

AND

SRI VAIKUNTA TECHNOLOGIES PRIVATE LIMITED



This Memorandum of Understanding (hereinafter called as the 'MoU') is entered into on this the 20th day of July 2021 by and between.

Vignan's Institute of Management and Technology for Women, the First Party represented herein by its Principal / Director / Head of Institution Vignan's Institute of Management and Technology for Women, And Sri Vaikunta Technologies Private Limited. The Second party, and represented herein by its Centre Head / Director I Managing Director Ashish Chinthakayala.

WHEREAS:

A) First Party is a Higher Educational Institution named: Vignan's Institute of Management and Technology for Women

B) First Party & Second Party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.

C) The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education, Placement, Industrial Visit, Expert Lecture.

D) Sri Vaikunta Technologies Private Limited, - the Second Party is engaged in Industrial Training & Internships.

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MOU, THE PARTIES HERETO AGREE AS FOLLOWS:

CLAUSE 1 CO-OPERATION

1.1 Both Parties are united by common interests and objectives, and they shall establish co-operation.

1.2 First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities.

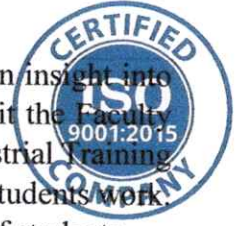
1.3 The parties shall cooperate with each other and shall as promptly as is responsibly practical, relevant agreement.



Ashish Chinthakayala
PRINCIPAL
Vignan's Institute of Management & Technology;
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (W),
Telangana State

CLAUSE 2 SCOPE OF THE MoU

2.1 Industrial Training & Visits: Industry and Institution interaction will provide an insight into the latest developments / requirements of the industries; the Second Party to permit the Faculty and Students of the First Party to visit its group. Companies and also involve in Industrial Training Programs for the First Party. This will provide confidence & smooth transition for students/work. Also the Second party may register on the AICTE Internship Portal for the benefit of students.



2.2 Guest Lectures: Second Party to extend the necessary support to deliver guest lecturers to the students of the First Party on the technology trends and in house requirements.

2.3 Placement of trained students: second party will actively engage to help the delivery of the training and placement of the students of the first party on the technology trends and in house requirements.

2.4 There is no financial commitment on the part of the Vignan's Institute of Management and Technology for Women, the first party to take up any program mention in MoU. If there is any financial consideration, it will be dealt separately.

2.5 Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required.

CLAUSE 3 VALIDITY

3.1 This Agreement will be valid until it is expressly terminated by either Party on mutually agreed terms, during which period, the Second Part.

CLAUSE 4 RELATIONSHIP BETWEEN THE PARTIES

4.1 It is expressly agreed that First Party and Second Party are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership.

Authorized Signatory

Vignan's Institute of Management and Technology
for Women

PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State


Authorized Signatory
Sri Vaikunta Technologies
Private Limited

PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State



MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

Vignan's Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), Medchal

AND

COIGN Consultants Pvt. Ltd

Opp. David Memorial High School, Tarnaka, Secunderabad, Telangana

This Memorandum of Understanding (hereinafter called as the 'MOU') is entered into on this the Seventh day of June 2021 by and between.

Vignan's Institute of Management and Technology for Women First Party represented herein by its Principal / Director / Head of Institution Vignan's Institute of Management and Technology for Women And COIGN Consultants Pvt. Ltd The Second party, and represented herein by its K. Durga Naveen Kandregula, The Founder and the CEO of the Organization

WHEREAS:

- A) First Party is a Higher Educational Institution named: **Vignan's Institute of Management and Technology for Women,**
- B) First Party & Second Party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.
- C) The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education, Placement, Industrial Visit, Expert Lecture.
- D) **COIGN Consultants Pvt. Ltd** the Second Party is engaged in Software Training and Development
- F) **COIGN Consultants Pvt. Ltd** the Second Party is Providing Internships

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MOU, THE PARTIES HERETO AGREE AS FOLLOWS:

CLAUSE 1

CO-OPERATION Hyderabad

- 1.1 Both Parties are united by common interests and objectives, and they shall establish co-operation.
- 1.2 First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities.
- 1.3 The parties shall co-operate with each other and shall as promptly as is responsibly practical, relevant agreement.

COIGN CONSULTANTS PVT. LTD.,

#S11, 5th Floor, Ballad Estates, Tarnaka, Secunderabad -500 017.
Ph : 040 - 6690 6107 | mail : contactus@coign.net | www.coign.net

CLAUSE 2

SCOPE OF THE MOU

2.1 **Industrial Training & Visits:** Industry and Institution interaction will provide an insight into the latest developments / requirements of the industries; the Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in Industrial Training Programs for the First Party. This will provide confidence & smooth transition for students work. Also the Second party may register on the AICTE Internship Portal for the benefit of students.

2.2 **Guest Lectures:** Second Party to extend the necessary support to deliver guest lecturers to the students of the First Party on the technology trends and in house requirements.

2.3 **Placement of trained students:** second party will actively engage to help the delivery of the training and placement of the students of the first party on the technology trends and in house requirements.

2.4 There is no financial commitment on the part of the **Vignan's Institute of Management and Technology for Women**, the first party to take up any program mention in MOU. If there is any financial consideration, it will be dealt separately.

2.5 Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required.

CLAUSE 3

VALIDITY

3.1 This Agreement will be valid until it is expressly terminated by either Party on mutually agreed terms, during which period, the Second Part.

CLAUSE 4

RELATIONSHIP BETWEEN THE PARTIES

5.1 It is expressly agreed that First Party and Second Party are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership.

First Party

Second Party


 PRINCIPAL
 Vignan's Institute of Management and Technology for Women
 Medchal (V), Medchal (M), R.R. Dist. 501 301
 Telangana State




Dr. G. Apparao Naidu

Durga Naveen Kandregula

Principal
 Vignan's Institute of Management and Technology for Women

Founder and CEO
 COIGN CONSULTANTS PVT. LTD
 PRINCIPAL
 Vignan's Institute of Management & Technology For Women
 Medchal (V), Medchal (M), Medchal-Malkajiri (D)-501301
 Telangana State

COIGN CONSULTANTS PVT. LTD.,

#S11, 5th Floor, Ballad Estates, Tarnaka, Secunderabad -500 017.
 Ph : 040 - 6690 6107 | mail : contactus@coign.net | www.coign.net

Memorandum of Understanding

The Service Level Agreement (SLA) is entered into on 17/02/2021 between Vignan's Institute of Management & Technology for women.NBA Accredited, Affiliated to JNTUH, Kondapur (V), Ghatkesar (M), Medchal Dist. Hyderabad and **Six Phrase - The Finishing School & MySlate (Six Phrase Technical Division), 93A, GKD Nagar, PN Palayam, Coimbatore - 641037.**

Vignan's Institute of Management & Technology for women.is represented by **Dr.G.Apparao Naidu, Principal** and **Six Phrase - The Finishing School & MySlate (Six Phrase Technical Division), 93A, GKD Nagar, PN Palayam, Coimbatore - 641037** is represented by **Dinesh Narayanan Vice President-Coimbatore.**

Vignan's Institute of Management & Technology for women and **Six Phrase - The Finishing School & MySlate ((Six Phrase Technical Division),93A, GKD Nagar, PN Palayam, Coimbatore - 641037** decided to lay down the terms and conditions of the SLA with the following clauses. The terms and conditions are not limited to the following but new terms shall only be added with mutual consent of both the parties.

Dr.G.Apparao Naidu,
Principal
Vignan's Institute of Management &
Technology for women

Dinesh Narayanan
Vice President
Six Phrase – The Finishing School
For SIX PHRASE THE FINISHING SCHOOL

PROPRIETOR

Aptitude Training | English Language Training | Technical Training |
Faculty Development Program | Finance Training | Placement Services



PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

Section 1 – Program and batch details

Full Name of College	Vignan's Institute of Management & Technology for women
Program Name	Placement Fit :- Technical Training Program/Aptitude Training Program
Total Program Duration (in Days)	30 Days
Total Program Duration (in Hours)	180 Hours
Degree and Passing out year of students to be trained	B.Tech 2022
Training Dates	Tentatively from March Fourth Week 2021.
Semester of Study of students to be trained	6 th / 7 th Semester Students
Total No of students attending the training	Around 250(Will be finalized by the College)
No of batches	3 Batches
Session Timings	Morning - 9 Am to 12 PM Afternoon – 1.30 Pm to 4.30 Pm Or College Suggested Timing.

**Aptitude Training | English Language Training | Technical Training |
Faculty Development Program | Finance Training | Placement Services**



Principal
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Maikajiri(Dt)-501301
Telangana State

Important:

- ✓ Any request for change in training dates needs to be communicated to Six Phrase - The Finishing School & MySlate Hire(Six Phrase Technical Division) at-least 7 working days in advance
- ✓ Even if communicated 7 working days in advance, Six Phrase - The Finishing School & MySlate Hire(Six Phrase Technical Division) is not automatically liable to deliver the service on the revised dates. Six Phrase - The Finishing School & MySlate Hire(Six Phrase Technical Division) will re-confirm the possibility of service delivery based on availability of trainers, ease of trainer travel and accommodation and other constraints
- ✓ Once the SLA is signed, our Program Manager (PM) from **Six Phrase - The Finishing School & MySlate (Six Phrase Technical Division)** will be in touch with you to plan finer details of logistics. Details of the Program Manager (MM) are:

Name: Rohini

Mobile Number: 9626349838

Email ID: _rohinimyslate@gmail.com

DECLARATION: I have read and understood Section 1 – Program and batch details and I agree to the same.

Dr.G.Apparao Naidu,
Principal
Vignan's Institute of Management & Technology for women

Dinesh Narayanan
Vice President,
Six Phrase - The Finishing School
For SIX PHRASE THE FINISHING SCHOOL

PROPRIETOR

Aptitude Training | English Language Training | Technical Training | Faculty Development Program | Finance Training | Placement Services



PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajiri(Dt)-501301
Telangana State

Section 2 – Billing Terms and Conditions


Duration of Training Program (in days)	30 Days
Duration of Training Program (in Hours)	180 Hours
Training Dates	Tentatively from March Fourth Week 2021.
Price per Trainer	13,000 + GST
Trainer Competency & Capability	1) Trainer Can able to handle the session with Live Coding. 2) Industry Standard Complex Program Solving 3) Trainer can able to develop the logical thinking capability in students with complex Programs. 4) Trainer can able to deliver coding optimization techniques.
Weekly Assessments Schedule	1) Every weekend we will conduct the Assessment in our portal. 2) We will produce the report of Assessment to the Training & Placement team on the next day. 3) Clearing the doubts in Assessment on next session.

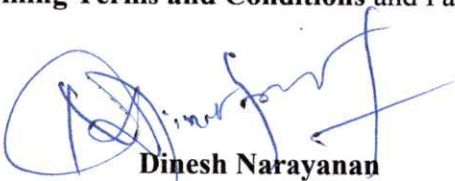
NOTE: After completion of program Six Phrase - The Finishing School Finance Manager, Dinesh Narayanan will be in touch with the college SPOC for invoicing and payments. SPOC details are:

Six Phrase - The Finishing School Finance Operation Details

Name – Dinesh Narayanan
 Designation – Vice President
 Mobile No – 9003879747
 Email – dinesh.sixphrase@gmail.com

DECLARATION: I have read and understood **Section 2- Billing Terms and Conditions** and I agree to the same.


Dr.G.Apparao Naidu, Principal
 Vignan's Institute of Management &
 Technology for women)


Dinesh Narayanan
 Vice President
 Six Phrase - The Finishing School
 For SIX PHRASE THE FINISHING SCHOOL




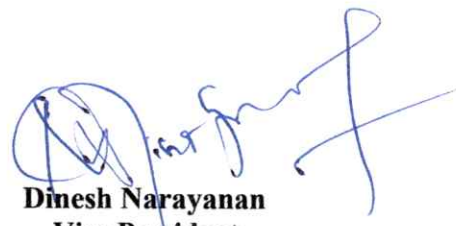
Aptitude Training | English Language Training | Technical Training | Faculty Development Program | Finance Training | Placement Services
PRINCIPAL
 Vignan's Institute of Management & Technology for Women
 Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DU), Telangana State

Section 3 – Payment Schedule – Terms & Conditions


Amount 50 % Payable	First 15 Days Training Program Over	
Final 50 % Payable	End of the Training Program	
Last date for payment of advance amount (failing which the training will not be delivered)	NA	
Maximum Credit Period for Balance Payment	Approx. 1 month from the date of Invoicing	
Last Date for Balance Payment	NA	
Mode of Payment	By Cheque or DD, favoring Six Phrase Aptitude Training OR By NEFT/ RTGS Transfer to:	
	Account Holder Name	Six Phrase Aptitude Training
	Account No.	50200045607859
	Bank Name	HDFC BANK
	Branch Name	Coimbatore
	IFSC Code	HDFC0004142
	PAN No	APSPV4632A
	NOTE: Cash payments will not be accepted	

DECLARATION: I have read and understood Section 3- Payment Schedule - Terms and Conditions and I agree to the same. I also agree that Disputes if any are subject to jurisdiction of Coimbatore courts only.


Dr.G.Apparao Naidu, Principal
 Vignan's Institute of
 Management & Technology for
 women


Dinesh Narayanan
 Vice President
 Six Phrase – The Finishing School
 For SIX PHRASE THE FINISHING SCHOOL

 **PROPRIETOR**


Aptitude Training | English Language Training | Technical Training |
Faculty Development Program | Finance Training | Placement Services
 Vignan's Institute of Management & Technology For Women
 Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
 Telangana State

Section 4 – Travel and Logistics – Terms & Conditions

Trainer Travel to College	Six Phrase - The Finishing School & MySlate (Six Phrase Technical Division) will take care
Local conveyance	Vignan's Institute of Management & Technology for women will take care.
Trainer Accommodation	Six Phrase The Finishing School & MySlate (Six Phrase Technical Division)
Local Conveyance from place of stay to College and back	Vignan's Institute of Management & Technology for women will take care.
Food Arrangements (Breakfast, Lunch)	Vignan's Institute of Management & Technology for women will take care.

DECLARATION: I have read and understood **Section 4 - Travel & Logistics - Terms and Conditions** and I agree to the same.

Dr.G.Apparao Naidu, Principal
Vignan's Institute of
Management & Technology for
women

Dinesh Narayanan
Vice President
Six Phrase – The Finishing School)
For SIX PHRASE THE FINISHING SCHO

PROPRIETOR



Aptitude Training | English Language Training | Technical Training | Faculty Development Program | Finance Training | Placement Services

PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(DT)-501301
Telangana State

THE PROJECT 2021

MEMORANDUM OF UNDERSTANDING
Between



&

COLLEGE NAME:

Vignan's institute of management and technology for women

Date: 05/02/2021



Handwritten signature
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301,
Telangana State

Executive Summary

At the outset, warm greetings from the entire management team of **KodNest**, we are glad that you have shown interest in our service offerings and assure you of our best services all the time in Your College for all the students that we are given responsibility for. Thank you once again for providing us an opportunity to submit our tailor made proposal to provide training and placement to your students.

This proposal for Final year/Semester engineering students of Your College & to fulfill your vision of making Your College one of the best colleges, PAN India.

Incepted in 2017, **KodNest Technologies** is a premier skill development company with its corporate office in Bangalore offering an entire range of services involved in the training, development and Employment.

KodNest is India's leading career Accelerator for job seekers and IT professionals with its training platform. We pioneer the initiative of filling the gap between the IT companies and Academia by training students with top trending technologies in the IT Industry.

Our program would see us assist you in the transformation of your engineering students keeping their placements in mind. The necessity for any graduate to be industry ready with specific skill sets is very vital in today's fast-moving world. Keeping that in mind and also the kind of contribution we can lend for the same to be fulfilled, we have tried to make this proposal in as much detail as possible so as to enable a very thorough evaluation from you and your nominated persons.

Please go through this proposal in detail at your convenience and please do contact us at any point of time for any clarifications or additional information in this proposal. We are grateful for your interest in our services and assure you of our best efforts in our engagement in Your College.

The management team personally assures you of living up to your expectations.

We are operating across the globe virtually:

- BTM Layout, Bangalore (Corporate Office)




PRINCIPAL
Vignn's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Career Enhancement

As you are aware, every year we have 12 to 15 Lakh students graduating out of colleges with minimal knowledge on the technology only to be categorized as unskilled and termed as “industry not ready”. Furthermore, as are witnessing a shift in the industry trend from:

“Hiring & Training” to “Hire only Trained”

This would have a direct impact on the job opportunities available to students year on year during campus placements. With the number of companies visiting every campus in India forecasted to be much lower than last year, it is of great importance that students are better prepared for the companies that visit and convert these opportunities.

Though there are Lakhs of vacancies every year for Fresher’s, Companies are Unable to Recruit

We take pride in ourselves in providing a First off its kind and **Unique Program** only by KodNest, in India by setting up a program for **Innovation & Excellence (I&E)** for your college by taking all the **final year students** and providing them **free training** on **Technical, Aptitude & Soft Skills** and also ensure to provide them **5 placement drives** if the student has a **90% attendance and 80% test scores in the complete 45 days training program consistently**.

Our client base is steadily growing with over **200+** as of now, more so is our commitment to remain the regional leaders in the fields of Training and Employment.




PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Maikajiri(Dt)-501301
Telangana State

Deliverables

Delivery Model:

- Online session from our Corporate Office.

Support required from your college:

- Ensure students attend without missing the sessions.
- Encourage all students to attend the sessions and attend all the tests without fail.
- Students must have good Internet connection for live streaming
- Uninterrupted Power Supply

Eligibility Criteria

- Only 2021 batch Candidates
- Graduation – B.E / B.Tech / M.E / M.Tech / MCA / BCA
- Stream- Any stream {Except Civil, Aeronautical & Chemical Engineering}

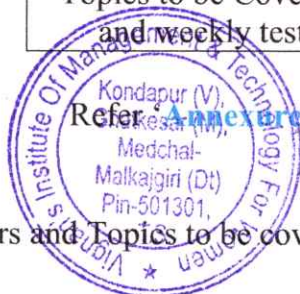
CSR Registration Link: <http://bit.ly/csr2021>

Training Schedule

Training Schedule for 2021	
Training Hours	90 Hours
Topics to be Covered and weekly test	Technical, Aptitude & Soft Skills
	Weekly Twice – Tests

Refer 'Annexure – 1' for complete course details

Note: Hours and Topics to be covered are subjected to change as per requirement.




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Registration Process

Zero cost for partnered Colleges

Details	Amount (In Rupees)
Program Fee	0
GST	0
Total	0

Note: Kodnest will not be charging the students selected for the CSR program or the college or the companies during or after the training for any activities and this is done with an intention of upskilling those who are keen on making an entry into IT.

Attendance Policy

Case 1	Less than 90% attendance	No placement drives
Case 2	Less than 80% in Tests conducted by Kodnest	No placement drives
Case 3	Irregularity	No placement drives



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Annexure – 1

Technical

- Introduction to Programming.
- Data Types.
- Control Constructs.
- Introduction to IDE.
- Shortcuts to IDE.
- Debug mode in IDE.
- Arrays.
- Programming on Arrays.
- Strings.
- Programming on strings
- Methods.
- Searching and sorting and logical algorithms using methods.
- Encapsulation.
- Constructor.
- Static keyword
- Swings using window builder
- Implementation of stack and queue data structures in java using all the above concepts.

Aptitude	Personality Development
<ul style="list-style-type: none">▪ Speed math.▪ Blood relations.▪ Boats and streams▪ Directions.▪ Cubes.	<ul style="list-style-type: none">▪ Interview grooming: -▪ Personality development (Do's and Don'ts in an interview)▪ Resume Building.






24/11/20
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IN WITNESSES WHEREOF the parties have signed this MoU date(s) indicated below.

Accepted for and on behalf of

Accepted for and on behalf of

 The Principal PRINCIPAL Vignans Institute of Management & Technology For Women for women, Ghatkesar (M), Medchal-Maikajiri (Dt)-501301 Hyderabad, Telangana State	  Mr Prabhakaran Ganeshan Co Founder KodNest Technologies Bangalore
Date:	Date: 05/21/2021




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VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(Sponsored by Lavu Educational Society)

[Affiliated to JNTUH, Hyderabad & Approved by AICTE, New Delhi]

Accredited By



Ref: VMTW/PO/2019/COLLAB/1

Date: 15.09.2020

COLLABORATION AGREEMENT BETWEEN

M/s .VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN .

Kondapur(V),Ghatkesar(M),Medchal(D),501301

And

M/s. ACE ENGINEERING COLLEGE

Ankushapur(V), Ghatkesar(M), Medchal(D),501301

This agreement is made on 15.09.2020

M/s .VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN .

Kondapur(V),Ghatkesar(M),Medchal(D),501301, Telangana, is an affiliated institute under JNTUH and established in the Year 2008, College Code-VMTW, under LAVU Educational Society, Hyderabad.

and

M/s. ACE Engineering College

Ankushapur(V), Ghatkesar(M), Medchal(D),501301. Telangana, is an affiliated institute under JNTUH and established in the Year 2007, College Code-ACE, under Yadala Satyanarayana Memorial Educational Society.

Aim of Memorandum of Understanding

1. The MOU aims to:

A. Interact and exchange the technical capability of both organizations to the mutual benefit of each other.

Sharing TECHNOLOGY of ACE ENGINEERING COLLEGE

B. ,there of the VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, with approval from competent authorities of ACE.

Coordinate with the R&D, Faculty of ACE ENGINEERING COLLEGE, and the faculty of VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, to bring out a good instruction manual, which shall be used by both of them, on identified projects/product development.

2. Common Interest and Agreement.


After a discussion about the strengths and objectives of VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN and ACE ENGINEERING COLLEGE, both have agreed to share the expertise available for mutual benefits in the fields of education, training, scientific and industrial research. Subsequently the discussions were held among the faculty from all the departments of ACE ENGINEERING COLLEGE and certain thematic area/programs has been identified for mutual collaboration as listed below:

- Faculty exchange
- Seminars
- Workshops
- Collaboration of Research & Development activities
- Quality Initiatives.

3. Memorandum of Understanding for the period.

The duration of this MOU shall be Five Years from the signing of the MOU. The MOU Shall stand cancelled if so desired otherwise by either party, and the contract agreement will be renewed with appropriate clauses. The termination of the contract if it is within the contract period shall be discussed and at least two months prior notice should be issued to the other party for the preparations to handle the pending issues.

IN WITNESS WHEREOF THE UNDER SIGNED, duly authorized there to, have signed this Memorandum of Understanding on Date: 15.09.2020


AUTHORIZED SIGNATORY
(M/S VIGNAN'S INSTITUTE OF MANAGEMENT
AND TECHNOLOGY FOR WOMEN)

PRINCIPAL

Vignans Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajiri (Dt)-501301
Telangana State


PRINCIPAL

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Telangana State


AUTHORIZED SIGNATORY
(M/S ACE ENGINEERING COLLEGE)

PRINCIPAL

ACE Engineering College
Ankushapur (v), Ghatkesar (M)
M.M. Dist.-501301 T.S.



Kondapur Village, Ghatkesar (M), Medchal - Malkajiri District - 501 301

Phone : +91 96529 10002/3, E-mail : info.vmtw@gmail.com, hyd.vmtw.principal@gmail.com

Website : www.vmtw.in



Memorandum of Understanding

This Memorandum of Understanding is entered on January 20th 2022 (“Effective Date”) by and between **Edunet Foundation** having its office at A-11- 1105, Arcadia South City 2, Gurgaon 122018, India (hereinafter referred to as “Edunet”); and,

VIGNAN’S INSITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN having its address KONDAPUR(V), GHATKESAR(M),MEDCHAL -MALLKAJIRI(D),501-301.
_____ (hereinafter referred to as “Institution”).

Whereas, Edunet is a non-profit organization with multiple programs, sponsored by government and corporate entities, that are offered free to learners across the education spectrum, including but not limited to Next Gen Employability Program (<http://ey.edunetworld.com>).

Whereas, Institution is a premier institution with the following details:

Established (year):	2008
Vision:	To empower female students with professional education using & innovative technical practices of global competence and research aptitude to become competitive engineers with ethical values and entrepreneurial skills.

And whereas, the Parties seek to collaborate with each other to mutually complement their synergies and to jointly work on building capacity of learners through one or more of the programs managed by Edunet.

Now therefore, this **Memorandum of Understanding** (hereinafter called “MOU”) witnesses the following.

- 1. Term and termination:** This MOU is valid for an initial term of 1 year from the Effective Date. It can be extended by further periods, as agreed to by the Parties from time to time. Either Party may terminate this MOU by giving the other minimum 30 days’ notice. The MOU will be deemed terminated at the end of the notice period or after completing all ongoing activities so that the beneficiaries (learners and teachers) are not negatively impacted, whichever is later.
- 2. Non-binding nature of this MOU:** The MOU is not binding on either Party and each is working with the other out of sheer good-will and for the benefit of the learners.
- 3. Single Point of Contact (SPOC) for program co-ordination:** Both the Parties shall appoint a suitable person who will serve as a single of contact on all matters related to program rollout. Individual learners and teachers may be in touch with corresponding trainers, mentors, advisors and peers during program roll-out but all matters related to the execution of this MOU shall reside with the SPOC.
- 4. Program Calendar:** The SPOCs from both Parties will work with their respective internal stakeholders to develop a calendar for the program(s) rollout at the start of every quarter. This calendar will then by synchronized and published for use by everyone.




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Telangana State

5. Responsibilities of Edunet and/or its program sponsors/partners:

- a. **Orientation sessions:** Edunet will conduct orientation sessions for learners and educators, at a mutually agreed schedule, to onboard them onto the program(s).
- b. **Program materials:** Edunet will share all program materials with the institution and/or learners as required. All sharing will be online and/or through electronic media.
- c. **Online instructor led sessions:** These sessions may take the form of coursework sessions, webinars or mentoring workshops or technology bootcamps or innovation camps or career readiness workshops that will seek to assist learners in their career goals. These programs will be organized regular as per a regular calendar, published online and will be conducted by Edunet team members or program sponsors or external stakeholders as appropriate.
- d. **Interaction with Industry experts:** Edunet will bring industry experts to the Institute to drive engagements with students through seminars/webinars or project mentorship.
- e. **Online platform availability:** Online platforms for each of the programs of interest to the Institution will be made available to it. Links for these platforms will be made available to the Institution in a timely manner.
- f. **Assessments:** Edunet will conduct assessments, as required, for its programs prior to certification by Edunet and/or its industry partners and/or participating government agencies.
- g. **For programs with career paths:** Edunet will provide linkages with local and regional industry, government and the local start-up ecosystem (incubators etc) that will help learners with gainful employment and/or entrepreneurial opportunities. Interactions will be encouraged in terms of classrooms sessions, workshops, internship opportunities, career opportunities and entrepreneurship opportunities.
- h. **Updates:** Edunet will keep Institution management updated with the progress of the program(s)

6. Responsibilities of Institution:

- a. **Learner identification:** Institute will identify learners, volunteers and instructors who may participate in one or more programs offered by Edunet.
- b. **Support with orientation sessions:** Institute will support Edunet conduct orientation sessions for all stakeholders.
- c. **Support with attendance:** Institute will ensure that program participants enthusiastically participate in chosen programs, with minimum attendance as agreed between the Parties.
- d. **Support with assessments:** Institute will ensure that assessments carried onsite are proctored and professionally managed.
- e. **No fees:** Institute will not charge any extra fees from learners for participation in Edunet programs. Edunet will not charge any fees from the students/university for the program.

IN WITNESS WHEREOF, the parties hereto have executed this MOU on the Effective Date.

For Institution

For Edunet Foundation


Name: Vignan's Institute of Management and
Technology for Women


Name: NAGESH SINGH

Designation: Mr. V Satish Sri Raj (TPO)
Training & Placement Officer

Designation: Executive Director

Vignan's Institute of Management
and Technology for Women
Kondapur (V), Ghatkesar (M),
Medchal-Malkajgiri Dist-501301




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Annexure 1:

Program Brief:

India has one of the largest as well as the youngest workforce in the world. This is potentially one of the most integral factors that can make the country a global economic giant. But the current gap between skills required by the industry and the skill level of the incoming/existing workforce is making the situation that could potentially head towards disaster with a rise in unemployment despite availability of jobs as well as steady enrollment in higher studies.

To mitigate this, the proposed program aims to bridge the skill gap by providing students from tier 2/3 institutes, typically from underserved communities, with future skills that bring up their employability index. The program proposes to impart future skills such as cognitive thinking, problem-solving, effective communication, teamwork, etc. along with IR 4.0 skills centered around Data Analytics and Cloud Computing ensuring current career readiness along with future readiness. The program also aims to drive the capacity building of teachers to achieve a ripple effect to broaden the reach of the program. The program will be deployed in a blended format with experiential learning elements such as expert talks, bootcamps, and project-based learning

Program Implementation:

Duration: February 2022 to July 2022

Target number of learners: In the state of Telangana, Tamil Nadu & Karnataka the program aims to train 1500 students from Engineering and /or Sciences background

Student training will be a structured and exhaustive engagement program for the pre-final and final year students, with a strong focus on helping them develop the relevant digital technology skills through a project-based learning methodology. The program will enable the students to

- build strong foundational and industry relevant skills in the respective technology vertical through hands-on experiences
- learn complimentary skills through self-paced learning opportunities and modular engagements like expert talks, bootcamps, etc.
- reinforce their learning through mandatory project work aimed at building technical solutions for real-world cases under mentorship of master trainers/industry experts.
- Enhance their overall employability and provide with opportunities for internships/ jobs/micro-entrepreneurship.

Student training to be divided into two cohorts –

- Cohort 1 for students from engineering colleges to train them program content and provide access to employment opportunities through jobs/internships to eligible students
- Cohort 2 for learners from non-engineering institutions to build their capacity on fundamentals and provide access to employment opportunities through jobs/internships to eligible students



[Signature]
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Telangana State

Memorandum of Understanding

Whereas on 30/07/2020

ADITI SOFTWARE, Hyderabad whose address is Third Floor, VVR Complex, KPHB Road Number-2, Phase -1, Hyderabad, Telangana-500072 engaged in the business of Overseas Education providing test prep courses Workshops, Internships, Industrial visit, and Short Term Courses.

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN which is situated at Kondapur (V), Ghatkesar (M), Medchal Dist, Telangana - 501301, is engaged in providing opportunities to pursue specific academics in as many areas as possible and enable it across India and the world at large.

ADITI SOFTWARE and **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN** have decided to work together for mutual benefits with respective expertise in their fields, in providing training & counseling on **Workshops, Internships, Industrial visit, and Short Term Courses** to the students of the **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN** at college campus / through Online whichever is possible. Both the parties intend to record the terms and conditions of the memorandum of understanding in writing.

Now this Memorandum of Understanding witness in consideration of the mutual convenience contained herein, the parties agreed as follows.

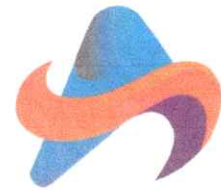
1. Purpose: The purpose of this MOU is to establish the terms and conditions under which **ADITI SOFTWARE, Hyderabad** will use premises of **VMTW** through Online mode for conducting Counseling sessions / Awareness Programs / Workshop/ Internship Training for Test Prep courses to Engineering students of Pre-Final & Final Year.
2. Terms of the MOU, This MOU is effective upon and will come into force from the day and date last signed and executed by the duly authorized representative of the parties to this MOU and shall remain in full force and effect until terminated by either party giving 1 month notice.
3. **VMTW** agrees to provide the facilities like premises to conduct counseling sessions, drinking water, electricity etc. to run the Overseas Education free Counseling sessions at their premises.
4. **ADITI SOFTWARE** agrees to give a **special discount of 50%** to the students of **VMTW** on their courses like Workshops, Internship, Industrial visit, and Short Term Courses. No other discount or offer can be availed along with this discount.



Third Floor, VVR Complex
KPHB Road No 2
Phase - 1, Hyderabad - 72
Telangana - India

Desk: 040-48-525-888
Mobile: +91-836-748-7105


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admin@aditisoftware.in
www.aditisoftware.in



ADITI SOFTWARE
Ascend & Conquer

ADITI SOFTWARE, Hyderabad will provide guidance & Training on:

- Workshops,
- Internships,
- Industrial visit,
- Short Term Courses

Authorized Signatory


For ADITI Software




Authorized Signatory


For vignan's institute of management and technology for women

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Telangana - India

Desk: 040-48-525-888
Mobile: +91-836-748-7105

admin@aditisoftware.in
www.aditisoftware.in

Memorandum of Understanding

This Memorandum of Understanding (MoU) executed on **26-06-2020** between VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN (herein after referred to as "Institution"), Kondapur (V), Ghatkesar (M), Hyderabad, and Pin-501301 as a first Party in this MOU

AND

Truechip Solutions Pvt. Ltd. (here in after referred to "Truechip") a leading provider of Design and Verification solutions – which help you, accelerate your design, lowering the cost and the risks associated with the development of your ASIC, FPGA and SOC, with registered office located at D-25, 1st Floor, Lajpat Nagar – II, New Delhi – 1100 24, INDIA, as a party of the second part

AND

Future Tech Wizards LLP (hereinafter referred to as "Future Wiz") is a leading provider of training (in VLSI) and design services, with its design center located at D-67, 1st floor, Sector 2, Noida, UP – 201301, INDIA, as a party of the third part.

Whereas VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN is a Leading women's Engineering College in Hyderabad offering B. Tech and M. Tech Courses in various fields.

Whereas **FutureWiz** provides **trainings (to students and corporates) and design services.**

Whereas **Truechip** is engaged in providing Verification IP licenses and design services. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, **Truechip and FutureWiz** would individually be termed as a "Party" and collectively be termed as "Parties".

Registration No. : U72900DL2008PTC181881
Design Center : D-67, First Floor, Sector - 2, Noida - 201301 (INDIA) Tel. +91-120-4227550
Registered Office : D-25, Lajpat Nagar - II, New Delhi - 110024 Tel. 91-11- 29839014

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Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
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deemed "Confidential Information" under this Agreement if it is so designated by the Disclosing Party by prominent markings with a "Confidential", "Proprietary" or similar legend. The Receiving Party agrees that it will not use the Disclosing Party's Confidential Information except as otherwise expressly permitted by this Agreement in the performance of its obligations and shall take reasonable precautions to protect the confidentiality of the Disclosing Party's Confidential Information.

Verbally disclosed information shall not be deemed "Confidential Information" unless it is (a) designated as confidential or proprietary by the Disclosing Party at the time of verbal disclosure, and (b) summarized and identified as being confidential or proprietary in writing, which shall be received by the Receiving Party within thirty (30) days after such verbal disclosure.

If either Party is required by law or by any regulation or by any Governmental authorities to disclose any Confidential Information relating to the other Party, the disclosing party or such disclosing person shall notify the other Party as early as practicable and shall co-operate in seeking a reasonable protective order.

Upon termination or expiration of this Agreement, each party shall return or destroy, at the direction of the other party, all Confidential Information and Proprietary Information owned by the other party.

The provisions of this Clause shall not apply to information, which is:

- a. In the public domain at the time of such disclosure or before.
- b. Readily known to the recipient.
- c. Developed independently by recipient without the benefit of any Confidential Information of the disclosing party;
- d. Received from a third party without similar restriction and without breach of this Agreement or a similar agreement or contract; or
- e. Permitted by the disclosing party in writing.

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4. Arbitration

- a. In the unlikely event of any dispute or difference arising between the parties hereto as to the rights and obligations under this Agreement or as to any claim, monetary or otherwise of one party against the other or as to the interpretation and effect of any terms and conditions of this Agreement such dispute or difference shall be referred to the Chief Executive Officers, of all the Parties at first level. In the event such dispute or claim cannot be settled by the Chief Executive Officers within ninety (90) days after written notification by one party of the existence of such dispute or claim, then such dispute shall be referred to Arbitration of a common Arbitrator if agreed upon, otherwise to two or more Arbitrators, one to be appointed by each of the parties to this Agreement and such Arbitrator shall be governed by the provisions of Arbitration and Conciliation Act, 1996 as at present in force and as may be amended from time to time.
- b. The venue for such Arbitration shall be in India at Delhi. The language to be used in the arbitral proceedings shall be English.
- c. The award rendered by the arbitrators shall be final and binding upon all Parties and may be entered by any court of competent jurisdiction for execution forthwith. Each Party shall bear its own expenses and attorneys' fees in connection with the arbitration.

5. Term and Termination

- a. This term of this Agreement shall be one year from the Effective Date of this Agreement and the Agreement shall automatically renew for another term at the end of each term, unless terminated in writing by either party in accordance with the provisions of this Agreement.
- b. Any one of the Parties may terminate this Agreement by serving sixty (60) days written notice to the other Party in the event:
 - i. that the other Party has failed to perform any material obligation undertaking under this Agreement and such default is not remedied/ and the evidence of



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such remedy is not furnished to the Party not in default, within thirty (30) days after receipt of a notice of default; or

- ii. that liquidation, bankruptcy or insolvency proceedings have been initiated against other Party and have not been dismissed or discontinued within a period of one hundred and eighty (180) days.
- a. This Agreement shall be terminated by any Party with fifteen (15) days written notice to the other Parties in the event that:
- i. any law which shall make performance of this Agreement impossible (and not just commercially impractical) for that Party is enacted and the Parties fail to reach an agreement on continuation of this Agreement within thirty (30) days after the date of the other Parties' receipt of notice of such enactment; or
 - ii. Any law, which materially alters the rights and obligations of the Parties from those agreed and contemplated by this Agreement, is enacted and the Parties fail to reach an agreement on continuation of this Agreement within thirty (30) days after the date of the other Parties' receipt of notice of such enactment.
 - a) Either Party may at any time choose to terminate this Agreement at any time based on its will to do so for any reason. In this case, if there is an existing training program on- going, then the Agreement will end after the completion of the training program.
 - b) Post termination of this Agreement, all parties must remove each other's logo from their website within a period of thirty (30) days.

6. Government Approvals

All sanctions, approvals, permissions, licenses and other requirements of the Government of India and of any statutory authorities required for giving effect to all the terms and conditions of this Agreement shall be obtained by the respective party to which it is applicable.

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Design Centre - 67, Sector 16, East of Kailash - 2, Noida - 201301 (INDIA) Tel. +91-120-4227550
Regd. Off. - 15, Ghatkesar (M), Medchal - II, New Delhi - 110024 Tel. 91-11- 29839014

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7. Governing Law

This Agreement shall be governed, construed and interpreted in accordance with the laws of Republic of India.

8. Notice

Any notice, consent, approvals, and other communication by one party to the other shall be made in writing and delivered to the receiving party to its respective address set forth below by email or by registered post, with acknowledgement due or by telex or fax or cable. In case the communication is made by telex or fax or cable the same will be subsequently but immediately thereafter confirmed by written communication sent by registered post as aforesaid. Any evidence showing the communication was posted or telex, fax or cable communication was made will be sufficient to prove the posting or sending the communication.

Notices hereunder shall be delivered to:

For FUTUREWIZ: FUTURE Tech Wizards LLP. D-25, 1st Floor,
Lajpat Nagar – II,
New Delhi – 1100 48, India

For Truechip: Truechip Solutions Pvt. Ltd. D-25, 1st Floor,
Lajpat Nagar – II,
New Delhi-110048, India.

For VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN:

Attention: Dr. G. Apparao Naidu

Mobile: 9701330999

Email ID: principal@vmtw.in

Either Party may, from time to time, change its address or representative for receipt of notices or other communications provided for in this Agreement by giving to the other party not less than ten (10) days prior written notice.

Design Office: Kondapur (V), Noida - 201301 (INDIA) Tel. +91-120-4227550
Regd. Office: Chatkesar (M), Lajpat Nagar - II, New Delhi - 110024 Tel. 91-11- 29839014

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Telangana State

13. Severability

If the provision of this Agreement is held to be invalid under any applicable statute or rule of Law, it shall be, to the extent, deemed omitted, and shall not affect the remaining clause and portions of this Agreement.

14. Waiver

No delay, omission, or failure to exercise and right or remedy provided for in this Agreement shall be deemed to be a waiver thereof or an acquiescence in the event giving rise to such remedy, but every such right or remedy may be exercised, from time to time, as may be deemed expedient by the party exercising such right or remedy.

15. Force Majeure

- a. The term "Force Majeure" as employed herein shall include but not limited to national disaster, hostilities or wars, economic downturn, revolutions, acts of public enemy, restrains of any de jure or de facto Government general strikes or other labour disturbances, any kind of fire, explosion or any other similar situations beyond the reasonable control of the affected Party.
- b. Neither party shall be deemed responsible for delays or failures on performance resulting from acts beyond the control of such party. In the event of either Party being rendered unable by Force Majeure event to perform any obligation required to be performed by it under this Agreement, the relative obligation of Party affected by such Force Majeure event shall upon notification to the other Parties be suspended for the period during which such cause and its consequences last.
- c. In case the Force Majeure condition continues, and the Parties cannot reach amicable settlement for more than six (6) months, then the Party not being involved in such Force Majeure event may terminate this Agreement by giving written notice to the Party involved in the Force Majeure, without prejudice to any of its rights conferred hereunder, including the right to receive any payment which is due and payable at the time of giving such notice.

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In the event of the Force Majeure event, each party shall immediately consult with each other in order to arrive at an equitable solution.

16. Indemnity

Each Party ("Indemnifying Party") shall defend, indemnify, and hold the other Party, its directors, officers, employees and agents (collectively "Indemnified Party") harmless from any and all third party liabilities, damages and claims for damages, suits, recoveries, judgments or execution, and expenses (including litigation costs, expenses and attorney's fees) which may be suffered by, accrued, against, charged to, or recoverable from the Indemnified Party by reason of or in connection with the Indemnifying Party's acts or omissions, negligence or willful default of the provisions of this Agreement.

1. Disclaimer of Warranties

- a. FutureWiz expressly disclaims all warranties of any kind whether express or implied.
- b. FutureWiz makes no warranty that the deputed trainers will meet PARTNER's requirement, or the services provided by them on behalf of FutureWiz shall be timely, secure or neither error free, nor does FutureWiz make any warranty as to the results that may be obtained or that the material provided will be free from errors or bugs. It is however acknowledged by FutureWiz that the trainer provided to FutureWiz will be well qualified.

2. Amendments

No modification or amendment of this Agreement or any of the terms or conditions hereof shall be valid or binding unless made in writing and duly executed by the Parties.

3. Further Assurance

The Parties shall do, execute or perform all such further deeds, documents, assurances, acts and things as may be reasonably required by the other Party to carry out the provisions of the Agreement into full force and effect.

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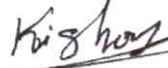
IN WITNESS WHERE OF, the Parties hereto have duly executed these presents on the date, month and year mentioned below.

For Truechip Solutions Pvt. Ltd.

Name : Mr. Nitin Kishore

Designation : CEO

Truechip Solutions Private Limited



Director

For Future wiz Academy LLP

Name : Ms. Arti Kishore

Designation : CEO



For Vignan's Institute of Management and Technology for Women

Name : Dr. K. Chandra Shekar

Designation : Principal



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Memorandum of Understanding

This Memorandum of Understanding (MoU) executed on **06-09-2021** between VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN (herein after referred to as "Institution"), Kondapur (V), Ghatkesar (M), Hyderabad, and Pin-501301 as a first Party in this MOU

AND

Truechip Solutions Pvt. Ltd. (here in after referred to "Truechip") a leading provider of Design and Verification solutions – which help you, accelerate your design, lowering the cost and the risks associated with the development of your ASIC, FPGA and SOC, with registered office located at D-25, 1st Floor, Lajpat Nagar – II, New Delhi – 1100 24, INDIA, as a party of the second part

AND

Future Tech Wizards LLP (hereinafter referred to as "Future Wiz") is a leading provider of training (in VLSI) and design services, with its design center located at D-67, 1st floor, Sector 2, Noida, UP – 201301, INDIA, as a party of the third part.

Whereas VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN is a Leading women's Engineering College in Hyderabad offering B. Tech and M. Tech Courses in various fields.

Whereas **FutureWiz** provides **trainings (to students and corporates) and design services.**

Whereas **Truechip** is engaged in providing Verification IP licenses and design services. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, **Truechip and FutureWiz** would individually be termed as a "Party" and collectively be termed as "Parties".

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Whereas **Truechip, FutureWiz** and VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN have agreed to collaborate as placement partner and developing skilled manpower and imparting Technical training to the students as per terms and conditions hereunder:

1. Effective Date: This MoU shall be deemed to be in effect from **06-09-2021** (hereinafter "Effective Date")

2. Joint Marketing

Based on this MoU, Institute Partner can show **Truechip & FutureWiz** logo on its website as training / industry partner. **Truechip & FutureWiz**, can also use VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN logo on its website as an institutional partner. All parties will agree with each other and look forward to doing more joint marketing activities.

3. Confidentiality

FutureWiz "Course Material" may consist of all material, in soft or printed manner, including but not limited to presentations, assignments, quiz questions, programs fully or partly coded and question papers. Such Course Material is confidential property of FutureWiz.

Either party may disclose either verbally, in writing, in electronic form or any other form to the other party certain information which the other party considers to be confidential. Confidential Information may include any confidential or proprietary information of each party hereto or its clients (including, without limitation, any information relating to technology or product development, pricing, client and prospective lists, strategic and business forecast / plans, salaries, business affairs, financial statements or other trade secrets of the party). During the term of this Agreement and surviving its expiration or termination, Confidential Information conveyed in writing or other tangible or soft copy form shall be deemed "Confidential Information" under this Agreement if it is so designated by the

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Disclosing Party by prominent markings with a "Confidential", "Proprietary" or similar legend. The Receiving Party agrees that it will not use the Disclosing Party's Confidential Information except as otherwise expressly permitted by this Agreement in the performance of its obligations and shall take reasonable precautions to protect the confidentiality of the Disclosing Party's Confidential Information.

Verbally disclosed information shall not be deemed "Confidential Information" unless it is (a) designated as confidential or proprietary by the Disclosing Party at the time of verbal disclosure, and (b) summarized and identified as being confidential or proprietary in writing, which shall be received by the Receiving Party within thirty (30) days after such verbal disclosure.

If either Party is required by law or by any regulation or by any Governmental authorities to disclose any Confidential Information relating to the other Party, the disclosing party or such disclosing person shall notify the other Party as early as practicable and shall co-operate in seeking a reasonable protective order.

Upon termination or expiration of this Agreement, each party shall return or destroy, at the direction of the other party, all Confidential Information and Proprietary Information owned by the other party.

The provisions of this Clause shall not apply to information, which is:

- a. In the public domain at the time of such disclosure or before.
- b. Readily known to the recipient.
- c. Developed independently by recipient without the benefit of any Confidential Information of the disclosing party;
- d. Received from a third party without similar restriction and without breach of this Agreement or a similar agreement or contract; or
- e. Permitted by the disclosing party in writing.

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4. Arbitration

- a. In the unlikely event of any dispute or difference arising between the parties hereto as to the rights and obligations under this Agreement or as to any claim, monetary or otherwise of one party against the other or as to the interpretation and effect of any terms and conditions of this Agreement such dispute or difference shall be referred to the Chief Executive Officers, of all the Parties at first level. In the event such dispute or claim cannot be settled by the Chief Executive Officers within ninety (90) days after written notification by one party of the existence of such dispute or claim, then such dispute shall be referred to Arbitration of a common Arbitrator if agreed upon, otherwise to two or more Arbitrators, one to be appointed by each of the parties to this Agreement and such Arbitrator shall be governed by the provisions of Arbitration and Conciliation Act, 1996 as at present in force and as may be amended from time to time.
- b. The venue for such Arbitration shall be in India at Delhi. The language to be used in the arbitral proceedings shall be English.
- c. The award rendered by the arbitrators shall be final and binding upon all Parties and may be entered by any court of competent jurisdiction for execution forthwith. Each Party shall bear its own expenses and attorneys' fees in connection with the arbitration.

5. Term and Termination

- a. This term of this Agreement shall be one year from the Effective Date of this Agreement and the Agreement shall automatically renew for another term at the end of each term, unless terminated in writing by either party in accordance with the provisions of this Agreement.
- b. Any one of the Parties may terminate this Agreement by serving sixty (60) days written notice to the other Party in the event:
 - i. that the other Party has failed to perform any material obligation undertaking under this Agreement and such default is not remedied/ and the evidence of such remedy is not furnished to the Party not in default, within thirty (30) days after receipt of a notice of default; or



- ii. that liquidation, bankruptcy or insolvency proceedings have been initiated against other Party and have not been dismissed or discontinued within a period of one hundred and eighty (180) days.
- a. Either Party may at any time choose to terminate this Agreement at any time based on its will to do so for any reason. In this case, if there is an existing training program on- going, then the Agreement will end after the completion of the training program.
- b. Post termination of this Agreement, all parties must remove each other's logo from their website within a period of thirty (30) days.

6. Government Approvals

All sanctions, approvals, permissions, licenses and other requirements of the Government of India and of any statutory authorities required for giving effect to all the terms and conditions of this Agreement shall be obtained by the respective party to which it is applicable.

7. Governing Law

This Agreement shall be governed, construed and interpreted in accordance with the laws of Republic of India.

8. Notice

Any notice, consent, approvals, and other communication by one party to the other shall be made in writing and delivered to the receiving party to its respective address set forth below by email or by registered post, with acknowledgement due or by telex or fax or cable. In case the communication is made by telex or fax or cable the same will be subsequently but immediately thereafter confirmed by written communication sent by registered post as aforesaid. Any evidence showing the communication was posted or telex, fax or cable communication was made will be sufficient to prove the posting or sending the communication.

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Telangana State

Notices hereunder shall be delivered to:

For FUTUREWIZ: FUTURE Tech Wizards LLP, D-25, 1st Floor,
Lajpat Nagar – II,
New Delhi – 1100 48, India

For Truechip: Truechip Solutions Pvt. Ltd, D-25, 1st Floor,
Lajpat Nagar – II,
New Delhi–110048, India.

For VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN:

Attention: Dr. G. Apparao Naidu

Mobile: 9701330999

Email ID: principal@vmtw.in

Either Party may, from time to time, change its address or representative for receipt of notices or other communications provided for in this Agreement by giving to the other party not less than ten (10) days prior written notice.

9. Limitation of Liability

IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR ANY INDIRECT, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES UNDER ANY CAUSE OF ACTION, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION SHALL APPLY NOTWITHSTANDING ANY FAILURE OF AN ESSENTIAL PURPOSE OR ANY LIMITED REMEDY PROVIDED HEREIN. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT, TOTAL CUMULATIVE LIABILITY OF EITHER PARTY SHALL NOT EXCEED THE AMOUNT PAID FOR TRAINING OR THE AMOUNT DUE FOR TRAINING IN LAST SIX MONTH.

10. Representations and Warranties

Each Party shall represent and warrants that it has the full right and authority to enter into and perform any and all applicable provisions of this Agreement and that there are

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no encumbrances or other restrictions that may prevent it or its employees from performing and all applicable clause of this Agreement.

11. Assignment

Neither party may assign this Agreement or any rights or obligations under this Agreement without the prior written consent of the other party.

12. Independent Contractor

Each party agrees and acknowledges that in its performance of its obligations under this Agreement, it is an independent contractor of the other party, and is solely responsibility for its own activities. Neither party shall have any authority to make commitments or enter into contracts on behalf of, bind or otherwise obligate the other party in any manner whatsoever except as expressly stated in this Agreement.

13. Severability

If the provision of this Agreement is held to be invalid under any applicable statute or rule of Law, it shall be, to the extent, deemed omitted, and shall not affect the remaining clause and portions of this Agreement.

14. Waiver

No delay, omission, or failure to exercise and right or remedy provided for in this Agreement shall be deemed to be a waiver thereof or an acquiescence in the event giving rise to such remedy, but every such right or remedy may be exercised, from time to time, as may be deemed expedient by the party exercising such right or remedy.

15. Force Majeure

- a. The term "Force Majeure" as employed herein shall include but not limited to national disaster, hostilities or wars, economic downturn, revolutions, acts of public enemy, restrains of any de jure or de facto Government general strikes or other labour disturbances, any kind of fire, explosion or any other similar situations beyond the reasonable control of the affected Party.
- b. Neither party shall be deemed responsible for delays or failures on performance resulting from acts beyond the control of such party. In the event of either Party being rendered unable by Force Majeure event to perform any obligation required to be

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performed by it under this Agreement, the relative obligation of Party affected by such Force Majeure event shall upon notification to the other Parties be suspended for the period during which such cause and its consequences last.

- c. In case the Force Majeure condition continues, and the Parties cannot reach amicable settlement for more than six (6) months, then the Party not being involved in such Force Majeure event may terminate this Agreement by giving written notice to the Party involved in the Force Majeure, without prejudice to any of its rights conferred hereunder, including the right to receive any payment which is due and payable at the time of giving such notice.

In the event of the Force Majeure event, each party shall immediately consult with each other in order to arrive at an equitable solution.

16. Indemnity

Each Party ("Indemnifying Party") shall defend, indemnify, and hold the other Party, its directors, officers, employees and agents (collectively "Indemnified Party") harmless from any and all third party liabilities, damages and claims for damages, suits, recoveries, judgments or execution, and expenses (including litigation costs, expenses and attorney's fees) which may be suffered by, accrued, against, charged to, or recoverable from the Indemnified Party by reason of or in connection with the Indemnifying Party's acts or omissions, negligence or willful default of the provisions of this Agreement.

1. Disclaimer of Warranties

- a. FutureWiz expressly disclaims all warranties of any kind whether express or implied.
- b. FutureWiz makes no warranty that the deputed trainers will meet PARTNER's requirement, or the services provided by them on behalf of FutureWiz shall be timely, secure or neither error free, nor does FutureWiz make any warranty as to the results that may be obtained or that the material provided will be free from errors or bugs. It is however acknowledged by FutureWiz that the trainer provided to FutureWiz will be well qualified.

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Telangana State

2. Amendments

No modification or amendment of this Agreement or any of the terms or conditions hereof shall be valid or binding unless made in writing and duly executed by the Parties.

3. Further Assurance

The Parties shall do, execute or perform all such further deeds, documents, assurances, acts and things as may be reasonably required by the other Party to carry out the provisions of the Agreement into full force and effect.

IN WITNESS WHERE OF, the Parties hereto have duly executed these presents on the date, month and year mentioned below.

For Truechip Solutions Pvt. Ltd.

Name : Mr. Nitin Kishore
Designation : CEO

Truechip Solutions Private Limited
Nitin Kishore
Director

For Future wiz Academy LLP

Name : Ms. Arti Kishore
Designation : CEO

Future Wiz Academy LLP
Arti Kishore
TECH WIZ

For Vignan's Institute of Management and Technology for Women

Name : Dr. G. Apparao Naidu
Designation : Principal

Dr. G. Apparao Naidu
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Dr. G. Apparao Naidu
PRINCIPAL
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13

CALYXPOD

Memorandum of Understanding

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CALYXPOD Talent Solutions Pvt. Ltd.
861, Phase 5, Udyog Vihar,
Gurugram, Haryana,
INDIA - 122016




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Telangana State

Dated: 10th Jan 2020

Principal

Thank you for your interest in using CALYXPOD, a product designed & provided by CALYXPOD Talent Solutions (Pvt.) Ltd.

Attached is the Memorandum of Understanding (MoU) for your kind reference. We are available to answer any requests you may have either on the various features of CALYXPOD or related to the MoU.

We at CALYXPOD are committed towards providing a forward looking and a best in class solution to enable continuous growth of your esteemed institution. We look forward towards a perennial successful relationship with your esteemed institute.

Sincerely,

Mr. Rishu Gupta

CALYXPOD

M: +91-9811283792



Rishu Gupta
PRINCIPAL
Vignan's Institute of Management & Technology For Women
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MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (this "MoU"), is made on the _____ day of _____, 2020 between **CALYXPOD Talent Solutions Pvt. Ltd**, having its office at #861, Phase 5, Udyog Vihar, Gurugram, Haryana - 122016, INDIA (hereinafter referred to as "**CALYXPOD**") and **Vignan Institute of Technology & Management**, Hyderabad, Telangana (hereinafter referred as the "**Institution**").

RECITALS

CALYXPOD and **Institution** are hereinafter collectively referred to as the "Parties" and individually referred to as the "Party". Each Party in this agreement has the legal authority and capacity to enter into this agreement.

WHEREAS **CALYXPOD** is providing its product **CALYXPOD** for use by the **Institution** for their convenience and as a tool to help them perform their job in a more efficient manner;

WHEREAS the **Institution** desires to engage with **CALYXPOD** to use its product **CALYXPOD**;

NOW, THEREFORE, for and in consideration of the mutual covenants and obligations by the parties hereto, the receipt and sufficiency of which both parties hereby acknowledge, it is agreed as follows:

AGREEMENT**1. SCOPE of CALYXPOD**

CALYXPOD will provide its product **CALYXPOD** over the internet. **CALYXPOD** will be offering the following features for use by the Institution for their convenience and as a tool to help them perform their job more effectively:

- 1.1 Institution** will be provided its own **Community** on **CALYXPOD** with a URL like <https://Community.Calyxpod.Com>.
- 1.2 Institution** will be able to update its contact details & logo.
- 1.3 Institution** will be able to define and manage any number of courses or degrees that it offers to the students.
- 1.4 Institution** will be able to add any new team member to its **Community** on **CALYXPOD** or suspend any team member from its **Community** on **CALYXPOD**. **Institution** will also be able to manage the permissions and roles of each individual team member on its own.
- 1.5 Institution** will be able to define and manage up to five (5) departments on **CALYXPOD** for managing their placement activities across different courses offered by it. **Institution** will be able to associate any number of courses or degrees with each of the departments.
- 1.6 Institution** will be able to add and manage up to twenty (20) active members in each department defined by it.
- 1.7** Each Department team member as per the role & permission assigned to it, as defined by **CALYXPOD**, will be able to add and manage students belonging to various courses linked to the Department.



[Handwritten Signature]
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- 1.8** Department team member as per the role & permission assigned to it, as defined by CALYXPOD, will be able to invite Students to **CALYXPOD**.
- 1.9** Institution, as defined by CALYXPOD, will be able to decide if the students can update their academic details by themselves or only the Department team members must be allowed to update the academic details of various students.
- 1.10** Department Team Members as per the role & permission assigned to them, as defined by CALYXPOD, will be able to download an Excel of the various students being taken care of by it.
- 1.11** Department Team Members as per the role & permission assigned to them, as defined by CALYXPOD, will be able to view and download various resumes submitted by the student.
- 1.12** Department Team Members as per the role & permission assigned to them, as defined by CALYXPOD, will be able to define and manage various placement events being organized by them for the students.
- 1.13** Department Team Members as per the role & permission assigned to them, as defined by CALYXPOD, will be able to mark which students are eligible for a placement event.
- 1.14** Department Team Members as per the role & permission assigned to them, as defined by CALYXPOD, will be able to define the registration dates for the various placement events being organized by them.
- 1.15** Department Team Members as per the role & permission assigned to them, as defined by CALYXPOD, will be able to view / download the following lists of students:
1. Students who are eligible for a placement event.
 2. Students who have registered for the placement event.
 3. Students whose applications have been approved for being sent to the Company.
 4. Students whose applications have been shortlisted by the Company for appearing in the placement event.
 5. Students who have been selected for offers by the company in the placement event.
- 1.16** Department Team Members as per the role & permission assigned to them, as defined by CALYXPOD, will be able to view the list of all the Placement Events being organized for a batch.
- 1.17** Department Team Members as per the role & permission assigned to them, as defined by CALYXPOD, will be able to view the list and the details of all the offers made to the students of a batch.
- 1.18** Department Team Members and the Students will be able to update their individual passwords.
- 1.19** Individual students will be able to edit / update the following details in their profile and generate their Resumes.
1. Personal Details (excluding the Name, Course, Roll Number)
 2. Contact Details (excluding the Primary Email Address)
 3. Academic Details (College Academics if Permitted by the Department settings as decided by the Department Head)
 4. Project Details
 5. Professional Experience Details
 6. Seminar / Training Details
 7. Research / White Paper Details
 8. Achievements, Extra Curricular Activities, Personal Interests / Hobbies.
 9. References
- 1.20** Department Heads can decide if they would like to make it mandatory for students to seek approval on their resume content before they can submit the resume at the time of registering for a




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placement event or if the students can directly submit the newly generated resumes without seeking approval from the Department.

- 1.21 Students will be able to view the various placement event opportunities for which they are eligible.
- 1.22 Students will be able to register for the Opportunities they are eligible for. Student can do so only within the period the Department has opened the Registration. Department will be allowed to change the dates of Registration as per their requirements.
- 1.23 Students must be able to see the details of the Job / Internship offer received by them.
- 1.24 Notifications will be generated on CALYXPOD to keep students informed of the various placement events schedule being organized by the Department. These Notifications will be based on the details provided by the Department Team Members.

2. SUBSCRIPTION PACKAGES

CALYXPOD will provide **CALYXPOD** for use by the **Institution** for 2 years. All students graduating in one calendar year are termed together as a single Batch. These students may belong to any course and the graduating month (in one calendar year) of each course may be different from the other. **The Core platform shall be provided for free for two academic years (2019-20 & 2020-21 batch).**

CALYXPOD will also permit the **Institution** to be able to add & invite its per-final year students and manage their internship opportunities without any cost to the **Institution**.

CALYXPOD commits to let the **Institution** use **CALYXPOD** as per the package chosen by the **Institution** and an agreement shall be signed between both the parties on mutual agreement.

CALYXPOD will provide a capability to the **Institution** to send SMS Notifications to Students via **CALYXPOD**. However, the same will be chargeable based on the number of SMS Notifications sent by the **Institution**. The cost for SMS Notifications can be shared if required.

3. DATA SECURITY

As per this agreement all the details collected from the students and all data stored and retained in **CALYXPOD** shall not be misused, distributed, and sold by **CALYXPOD** to any third party for commercial purposes.

That **CALYXPOD** undertakes and ensures that it shall take all optimum steps and shall guarantee to its best capacity and capabilities to provide security and protect the information stored on **CALYXPOD** in accordance to all prevalent and established internet protocols.

Below are the few steps we take to ensure the Data Security

1. **HTTPS Connection:** The URL is Secure.
2. **Team Management / Access Control System:** No user can misuse the system.




PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

3. **Complete Admin**

Rights: No Other Party Involvement

4. **History Trail:** All activity of various Actions and Downloads are captured.

5. Deployed on one of the **best Secure Cloud Environments** in the World.

6. **Data shall not be distributed or sold by CalyxPOD to any third party for commercial reasons.**

4. **TERM, TERMINATION and REVIEW**

This Agreement is valid from the Effective Date (date of signing of the agreement) outlined herein and is valid for one year from the date of signing of the agreement.

This Agreement will be reviewed once the deadline has expired and may be continued by mutual consent of both parties.

The Institution may choose to end this agreement at their will at any date before the expiry of the agreement period. CALYXPOD on receiving a notification from the Institution for ending the contract will disable the Institution's Community on CALYXPOD.

5. **DISPUTE RESOLUTION: ARBITRATION CLAUSE**

Every dispute, difference, or question which may at any time arise between the parties, touching or arising out of or in respect of this agreement or the subject matter thereof shall be referred to the sole arbitrator appointed by both the parties and in the event of any failure to commence or to continue arbitration by the arbitrator for any reasons whatsoever, the new arbitrator shall be appointed.

The arbitration shall be governed by the applicable Indian Laws. The seat of arbitration shall be in Delhi, India.

6. **MISCELLANEOUS:**

- a) The Parties agree to attempt in good faith to resolve any dispute or disagreement of any kind whatsoever between or among them in connection with or arising out of this agreement, including any question regarding its existence, validity or termination ("Dispute") expediently and amicably to achieve timely and full performance of the term of this agreement.



W.A.S.
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

CALYXPOD

Vignan Institute of Technology & Management

- b) All claims regarding this Agreement are governed by and construed in accordance with the laws of Delhi state and central government of India applicable to contracts wholly made and performed in such jurisdiction, except for any choice or conflict of law principles and must be litigated in Delhi state jurisdiction only.
- c) This Agreement binds and inures to the benefit of the parties' successors and assignees. This Agreement is not assignable, delegable, sub-licensable, or otherwise transferable by the **Institution** in whole or in part without the prior consent of **CALYXPOD**. Any transfer, assignment, delegation or sublicense by **Institution** done otherwise without consent is invalid.

IN WITNESS WHEREOF the Parties hereto have entered into this Agreement the day and year herein above written.

Signed and Delivered by The Authorized Representative of Parties to this Agreement:


For and on behalf of

CALYXPOD Talent Solutions Pvt. Ltd.


.....
CALYXPOD TALENT SOLUTIONS PVT. LTD.
Mr. Rishu Gupta Director
(Authorized Signatory)

For and on behalf of

Vignan Institute of Technology & Management


.....
Sathish Sri Raj
(TPO)

(The validity of the Memorandum of Understanding and the feature details are valid until further revisions)




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

Established in the Year 2008
Affiliated to JNTU, Hyderabad (M & A), under the J.B. Educational Society



CSE & ECE

Ref: VMTW/PO/2019/COLLAB/3

Date 03.10.2019

COLLABORATION AGREEMENT BETWEEN

M/s. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,
Kondapur(V), Ghatkesar(M), Medchal(D), 501301, Telangana

And

M/s. J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY,
Yenkapally(V), Moinabad(M), HYDERABAD, 500075, Telangana.

This agreement is made on 03.10.2019

M/s. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,
Kondapur(V), Ghatkesar(M), Medchal(D), 501301, Telangana, is an affiliated institute under JNTU and established in the Year 2008. College Code-
VMTW, under LAVU Educational Society, Hyderabad.

and

M/s. J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY,
Yenkapally(V), Moinabad(M), HYDERABAD, 500075, Telangana, is an affiliated institute under JNTU and established in the Year 1998,
College Code-JBIET, under J. B. Educational Society

Aim of Memorandum of Understanding

- The MOU aims to:**
 - Interact and exchange the technical capability of both organizations to the mutual benefit of each other.
 - Sharing TECHNOLOGY of J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY, there of the VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, with approval from competent authorities of SMSK.
 - Coordinate with the R&D Faculty of J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY, and the faculty of VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN to bring out a good instruction manual, which shall be used by both of them, on identified projects/product development.

- Common Interest and Agreement.**

After a discussion about the strengths and objectives of VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN and J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY both have agreed to share the expertise available for mutual benefits in the fields of education, training, scientific and industrial research. Subsequently the discussions were held among the faculty from all the departments of JBIET and certain thematic area/programs has been identified for mutual collaboration as listed below.

- Faculty exchange
- Seminars
- Workshops
- Collaboration of Research & Development activities.
- Quality Initiatives.

- Memorandum of Understanding for the period.**

The duration of this MOU shall be Five Years from the signing of the MOU. The MOU Shall stand cancelled if so desired otherwise by either party, and the contract agreement will be renewed with appropriate clauses. The termination of the contract if it is within the contract period shall be discussed and at least two months prior notice should be issued to the other party for the preparations to handle the pending issues.

IN WITNESS WHEREOF THE UNDER SIGNED duly authorized there to have signed this Memorandum of Understanding on Date: 03.10.2019

AUTHORIZED SIGNATORY
(M/S VIGNAN'S INSTITUTE OF MANAGEMENT
AND TECHNOLOGY FOR WOMEN)

AUTHORIZED SIGNATORY
(M/S J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY)

PRINCIPAL

PRINCIPAL

PRINCIPAL
J.B. INSTITUTE OF
ENGINEERING & TECHNOLOGY

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301,
Telangana State

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301,
Telangana State

Rhaskar Nagar, Yenkapally (V),
Moinabad (M), R.R. Dist.-500075.

+91-96529-10002,3

vmtw@gmail.com, hyd.vmtw.principal@gmail.com

Website: www.vmtw.in



Memorandum of Understanding

The Memorandum of Understanding (hereinafter referred to as "MOU") is made and executed on this 23rd day of August 2019 (Effective date), at Hyderabad.

BY AND BETWEEN

VIGNAN INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN'S is represented by Principal And INDIAN PLACEMENT SERVICE CENTER and its subsidiary INSTITUTE OF TRAINING AND PLACEMENT SERVICES having its offices in Hyderabad, through its duly authorized signatory Mr . Venkata Sandeep K - CEO (hereinafter referred to as "IPSC" which expression shall, unless it be repugnant to the context or meaning thereof, be deemed to mean and include its successors and assigns)

IPSC (INDIAN PLACEMENT SERVICE CENTER) is a skill and Talent development company established in 2012 which drives students to be employable. We majorly focusing on bridging the gap between the Academia and Industry through its unique Skill Vs Aspiration model which helps the graduates discover their goal, acquire the skills, Build the profile, and achieve the career goal.

We train students on market demand skills like **Aptitude & Reasoning Communication & Interview skills. Technical skills like C, C++, JAVA, HARDWARE NETWORKING, AUTO CAD, BANKING, TALLY, SALES & MARKETING Techniques** and provide an opportunity to attend campus recruitment drives, direct walk in, pool drives etc. We have trained more than 30000 students from Engineering / Degree/ MBA / ITI Diploma.

Currently, IPSC is looking into the to achieve the career goals. It is uniquely designed to cater to the need of the industry to have skilled Interns and at the same time provide a platform to the student's community to reach out to the corporate.

Our proposal with the following training programs as per the requirements of today's industry .

WHEREAS

As per the Discussion had with the Department of Vignan Institute Of Management and Technology for Women's, IPSC decided to lay down the terms and conditions of MOU with the following Clauses. The terms and conditions are not limited to the following but new terms shall only be added with mutual consents of both the parties.



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
Telangana State

ADDRESS: Regus, Manjeera Trinity Corporate, Plot No-S2, JNTU, Hitech City Rd, KPHB Clny Kukatpally, Hyderabad -85.

[Signature]

[Signature]

Campus Placement Training:

SECTION 1: Program Details

For 1st Year Students:

Name of the Courses: Verbal + Soft skills

Purpose : Verbal topics and Soft skills

Duration : 14 days (i.e., 40Hrs)

For 2nd Year Students Training Courses:

➤ Verbal + Html5 & CSS3

HTML5 and CSS3 Training Course Overview:

- HTML5 is everywhere, and is a technology that can no longer be ignored or treated as a mere extension of HTML4. HTML5 is a vast umbrella term for modern Front End Engineering, namely **JavaScript**, Markup, Device APIs, and Styles. Almost anything you see in **App Stores** can now be created with pure HTML5 & CSS3.

HTML5 and CSS3 Course Duration

- 17 days (i.e., 48Hrs)

For 3rd Year Students Training Courses:

Python + Verbal :

Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. Python has been one of the premier, flexible, and powerful open-source language that is easy to learn, easy to use, and has powerful libraries for data manipulation and analysis.

Duration: 18days (i.e., 50 Hrs)

IMPORTANT:



[Signature]
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

ADDRESS: Regus, Manjeera Trinity Corporate, Plot No-S2, JNTU, Hitech City Rd, KPHB Clny Kukatpally, Hyderabad -85.

P. Sudhaka

K. Venkt Sahay

- Last minute Changes in training dates will not be accommodated. Hence IPSC recommends that the college should double-check and ensure that none of these fall during the training dates : 1. No Local/State/National holidays. 2. No Internal tests /examinations. 3. No college functions. 4. No guest Lectures/special programs 5. No placement/recruitment process.
- Any request for change in training dates needs to be communicated to IPSC at- least 7working days in advance.
- Even if communicated 7 working days in advance, IPSC is not liable to deliver the service on the revised dates. IPSC will re-confirm the possibility of service delivery based on availability of trainers, ease of trainer travel and accommodation and other constraints.
- Once the MOU is signed, our Campus Manager from IPSC office will be in touch with you to plan further details of logistics.
- Batch list of students to be trained needs to be attached to this MOU. This is a mandatory requirement from IPSC.

DECLARATION: I have read and understood Section 1 – Program details and I agree to the same.

For

Vignn's Institute of Management and Technology For Women's



PRINCIPAL

Vignn's Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), R.R.Dist-501 301
Principal, Telangana State

For

IPSC

For INDIAN PLACEMENT SERVICE CENTER

Proprietor

CEO

SECTION 2: FINANCE AND CONDITIONS:

ADDRESS: Regus, Manjeera Trinity Corporate, Plot No-S2, JNTU, Hitech City Rd, KPHB Clny
Kukatpally, Hyderabad -85.



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Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

Vignan's Institute	1 st Year	2 nd Year	3 rd Year
Duration of Training Program(in Days)	14 days	17 days	18 days
Duration of Training Program(in Hours)	40Hrs	48 Hrs	50Hrs
Training Dates	Aug: 28,29 Sep: 3,9,16,17,23,24,30 Oct:1,14,15,21,22	Aug:28,29 Sep:4,5,11,12,18,19,25,26 Oct:3,9,10,16,17,23,24	Aug:29,30 Sep:5,6,12,13,19,20,26,27 Oct:3,4,10,11,17,18,24,25
Price(per Student)	600	800	1500
GST @ 18.0%	Applicable	Applicable	Applicable

NOTE: After completion of program, IPSC Accounts Manager will be in touch with the college SPOC for invoicing and payments.

DECLARATION: I have read and understood Section 2 – Finance details and I agree to the same.

For

Vignan's Institute of Management and Technology For Women's

P. Sudhakar
PRINCIPAL
Vignan's Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), R.R.Dist-501 301
Principal Telangana State

For

IPSC

FOR INDIAN PLACEMENT SERVICE CENTER
K. Venket Sastry
Proprietor

CEO

SECTION 3: Payment Schedule – Terms & Conditions

ADDRESS: Regus, Manjira Fraternity Corporate, Plot No-S2, JNTU, Hitech City Rd, KPHB Clony
Kukatpally, Hyderabad 505.



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Advance Amount (start date of training)	35 %								
Second payment(after 50 % of training delivery)	35 %								
Final payment(Last day of training)	30 %								
	By Cheque or DD, favoring "INDIAN PLACEMENT SERVICE CENTER".								
	<table border="1"> <tr> <td>Account Holder Name</td> <td>IPSC Indian Placement Service Center</td> </tr> <tr> <td>Bank A/c No.</td> <td>409000066557</td> </tr> <tr> <td>IFSC Code</td> <td>RATN0000112</td> </tr> <tr> <td>Bank Branch</td> <td>GREENLANDS,Ameerpet</td> </tr> </table>	Account Holder Name	IPSC Indian Placement Service Center	Bank A/c No.	409000066557	IFSC Code	RATN0000112	Bank Branch	GREENLANDS,Ameerpet
Account Holder Name	IPSC Indian Placement Service Center								
Bank A/c No.	409000066557								
IFSC Code	RATN0000112								
Bank Branch	GREENLANDS,Ameerpet								
	Note: Cash Payment Will not be accepted								

DECLARATION: I have read and understood **SECTION 3: Payment Schedule – Terms & Conditions** and I agree to the same.

For

Vignan's Institute of Management and Technology For Women's



PRINCIPAL

Vignan's Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), R.R.Dist-501 301
Principal, Medchal, Telangana State

For INDIAN PLACEMENT SERVICE CENTER

K. Venket Reddy
For IPSC Proprietor

CEO

SECTION 4: Travel & Logistics – Terms & Conditions

ADDRESS: Regus, Manjeera Trinity Corporate, Plot No-S2, JNTU, Hitech City Rd, KPHB Clony
Kukatpally, Hyderabad -85



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

Trainer Travel to (Hyderabad)	IPSC will take care
Local Conveyance from port of entry in Hyderabad to place of stay	IPSC will Arrange Cab
Trainer Accommodation	IPSC will take care
Local Conveyance from place of stay to college and back	College will take care
Food Arrangements (Lunch)	College will provide Lunch

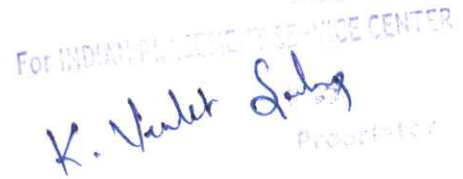
DECLARATION: I have read and understood **SECTION 4: Travel & Logistics – Terms & Conditions** and I agree to the same.

For
Vignan's Institute of Management and Technology For Women's



PRINCIPAL
Vignan's Institute of Management and Technology for Women
Kondapur (V), Ghatkesar (M), R.R. Dist-501 301
Telangana State
Principal

For
IPSC



For INDIAN PLACEMENT SERVICE CENTER
Proprietor

CEO




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

ADDRESS: Regus, Manjeera Trinity Corporate, Plot No-S2, JNTU, Hitech City Rd, KPHB Clny
Kukatpally, Hyderabad -85.

FA Employability Services

Memorandum of Understanding (MoU)

This Memorandum of Understanding (MoU) has been executed on the 21st day of August of 2019 between **Vignan's Institute of Management And Technology For Women**, situated at Kondapur(V), Ghatkesar (M), Medchal (Dist) - 501301 (hereinafter referred to as "**Client**"), which expression shall unless repugnant to the context, be deemed to include its successors in title, in interest and in right etc., and permitted assigns.

And

Fourth Ambit Technologies Pvt Ltd, situated at BMRA 66, Balakrishna Menon Road, Edappally, Kochi - 682024 (hereinafter referred to as "**Service Provider**"), which expression shall unless repugnant to the context, be deemed to include its successors in title, in interest and in right etc., and permitted assigns.

1. Objective

Enabling student employability by facilitating access to their alumni and providing access to programs, opportunities and partners across themes like internships, placements, skill development, assessments, entrepreneurship etc.

2. Scope of Services

The following would be the services provided by the Service Provider:

- 2.1. Set up the basic version of the College Community Portal. Orient and train the Single Point of Contact ("**SPOC**") from the college and the Student Ambassadors on usage of the same. Best practices about managing the portal to maximize value would be shared from time to time. The college can access the technical helpdesk for resolving specific queries.
- 2.2. Provide access to the Service Provider's Employability Portal. This would have features and content across themes like Career Orientation, Assessments, Skill Development, Internships and Placements. The college can utilize the same to keep track of all training and placement related activities. Orient and train the SPOC & Student Ambassadors on usage of the same.




PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajiri(Dt)-501301
Telangana State

2.3. Provide offline support to the college in various employability related activities like career orientation sessions, on-ground internship/ placement drives etc.

3. Responsibilities of the Client

- 3.1. Provide student/ alumni data in the required format for uploading into Community Portal as well as the Employability Portal.
- 3.2. Identify and on-board 5-8 Student Ambassadors to activate the student community towards maximizing the benefits of these portals for the student community.
- 3.3. Administer and manage the Community Portal as well as the Employability Portal as per the guidelines provided from time to time by the Service Provider.
- 3.4. Activate the student, alumni, faculty community towards adopting these portals.

4. Validity of this Agreement

- 4.1. This MoU will be operational and valid for one year from the date of signing or until the date of earlier termination. The MoU can then be renewed with mutual consent of both the parties.
- 4.2. Either party may terminate this agreement by providing notice of at least thirty days in advance in writing.

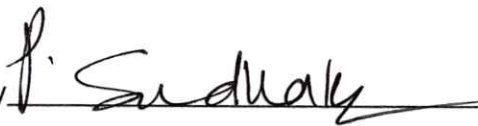
In witness whereof, the parties hereto have caused this Memorandum of Understanding to be executed by their representatives in duplicate, each party retaining one (1) copy thereof respectively.

For and on behalf of

For and on behalf of

Vignan's Institute of Management Technology For Women

Fourth Ambit Technologies Pvt Ltd

By 



PRINCIPAL
 Vignan's Institute of Management and Technology for Women
 Name : Mr. Sudhakar Rao Parvataneni
Kondapur (V), Ghatkesar (M), R.R. Dist-501 301
 Malkajgiri (Dt) Telangana State

Name : Rahul Das

Designation : Principal

Designation : CEO




PRINCIPAL
 Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
 Telangana State

Fourth Ambit Technologies Private Limited
 34/1219A, BMRA 66, Balakrishna Menon Road, Edappally, Kochi – 682024, Kerala, India

CIN: U72200KL2011PTC029522 GSTIN: 32AABCF8226D123

www.fourthambit.com

TECHONA ENTERPRISES

MEMORANDUM OF UNDERSTANDING

This memorandum of understanding (MOU) entered on 09.08.2019 at Hyderabad

Between

TECHONA ENTERPRISES having its registered premises at H-No: 1-9-382/11/1, beside veerareddy poultry firm, Kushaiguda Industrial area, Hyderabad-500062, Telangana state, India here after referred to as **TECHONA ENTERPRISES**.

And

The Vignan Institute of Management and Technology for Women (VMTW), situated in Bogaram (V), Ghatkesar (M), R.R.Dist, Hyderabad, Telangana 501301, affiliated to JNTUH Hyderabad, approved by AICTE and recognized by Govt. of Telangana state, here after referred to as **VMTW**

The word party refers to as either **TECHONA ENTERPRISES** or **VMTW** or both.

NOW IT IS HERE BY MUTUALLY AGREED BY & BETWEEN THE PARTIES HERE TO AS FOLLOWS:

SCOPE OF MOU:

VMTW and **TECHONA ENTERPRISES** express a strong desire to cooperate and agree to work in mutually beneficial areas to enhance the quality of education of the engineering college students and contribute to conduct academic projects.

AGREEMENT

VMTW will offer their facilities and expertise at **FREE** of cost to **TECHONA ENTERPRISES** in the following areas:

- ❖ Research development and consultancy department of **VMTW** will give the design expertise and the theoretical analysis as per the **TECHONA ENTERPRISES** requirements.
- ❖ Consultancy to improve the quality and productivity of products & processes.
- ❖ Further, for any projects, student internships and any other related things Mr. Satish Sri Raj act as coordinator.

TECHONA ENTERPRISES will offer the following to **VMTW**, if required:

- ❖ Provide tools, raw materials and parts needed for the research and development, consultation of projects.

H-No: 1-9-382/11/1, Eciil post, Kushaiguda, Hyderabad-500062
Contact: 8885785386/8885906617




PRINCIPAL
Vignan's Institute of Management & Technology for Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

TECHONA ENTERPRISES

- ❖ Conducting workshops for students in areas of PCB Designing, IOT & Robotics.
- ❖ To offer the academic projects to students
- ❖ Arrange eminent faculty for presenting the guest lecturers from both sides to improve the students knowledge

TERMS AND CONDITIONS:

- ❖ Failure of either party to enforce any of its rights under this agreement at any time shall not constitute violation of right.
- ❖ This MOU shall be valid for a period of 2 years from the date of signing the agreement.
- ❖ The submission of academic projects along with the kits should be completed as soon as possible with best outcomes.

The above entered MOU is strictly confidential between TECHONA ENTERPRISES & VMTW Hyderabad.


N.Divya
Hr-Manager




PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(Sponsored by Lavu Educational Society)

[Affiliated to JNTUH, Hyderabad & Approved by AICTE, New Delhi]

Accredited By



Ref: VMTW/PO/2019/COLLAB/2

Date: 07.08.2019

COLLABORATION AGREEMENT BETWEEN

M/s. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN.

And

M/s. SAMSKRUTI COLLEGE OF ENGINEERING AND TECHNOLOGY.

This agreement is made on 07.08.2019

M/s. VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, Kondapur (V), Ghatkesar, (M), Medchal (D), 501301, Telangana, is an affiliated institute under JNTUH and established in the Year 2008, College Code-VMTW, under LAVU Educational Society, Hyderabad.

and

M/s SAMSKRUTI COLLEGE OF ENGINEERING AND TECHNOLOGY, Kondapur (V), Ghatkesar (M), Medchal (D), 501301. Telangana. Telangana, is an affiliated institute under JNTUH and established in the Year 2005, College Code-SMSK, under st. Vincent Educational Society.

Aim of Memorandum of Understanding

1. The MOU aims to:

- Interact and exchange the technical capability of both organizations to the mutual benefit of each other.
- Sharing TECHNOLOGY of SAMSKRUTI COLLEGE OF ENGINEERING AND TECHNOLOGY, there of the VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, with approval from competent authorities of SMSK.
- Coordinate with the R&D, Faculty of SAMSKRUTI COLLEGE OF ENGINEERING AND TECHNOLOGY, and the faculty of VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN, to bring out a good instruction manual, which shall be used by both of them, on identified projects/product development.

2. Common Interest and Agreement.

After a discussion about the strengths and objectives of VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN and SAMSKRUTI COLLEGE OF ENGINEERING AND TECHNOLOGY, both have agreed to share the expertise available for mutual benefits in the fields of education, training, scientific and industrial research. Subsequently the discussions were held among the faculty from all the departments of SMSK and certain thematic area/programs has been identified for mutual collaboration as listed below:

- Faculty exchange
- Seminar
- Workshop
- Collaboration of Research & Development activities
- Quality Initiatives.

3. Memorandum of Understanding for the period.

The duration of this MOU shall be Five Years from the signing of the MOU. The MOU Shall stand cancelled if so desired otherwise by either party, and the contract agreement will be renewed with appropriate clauses. The termination of the contract if it is within the contract period shall be discussed and at least two months prior notice should be issued to the other party for the preparations to handle the pending issues.

IN WITNESS WHEREOF THE UNDER SIGNED, duly authorized there to, have signed this Memorandum of Understanding on
Date: 07.08.2019

P. Sudhakar

AUTHORIZED SIGNATORY
(M/S VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN)

PRINCIPAL

B. Suresh

AUTHORIZED SIGNATORY
(M/S SAMSKRUTHI COLLEGE OF ENGINEERING AND TECHNOLOGY)

PRINCIPAL

Samskruti College of Engineering and Technology
Kondapur Ghatkesar Municipality Medchal (D).

A. S. S.

PRINCIPAL

Vignans Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt.)-501301

Kondapur Village, Ghatkesar Mandal, Medchal - Malkajgiri District - 501 301

Phone : +91 96529 10002/3, E-mail : info.vmtw@gmail.com, hyd.vmtw.principal@gmail.com

Website : www.vmtw.in



MEMORANDUM OF UNDERSTANDING(MoU)

This Memorandum of Understanding (MOU) is entered on 08.07.2019 at Hyderabad.

Between

Vignan's Institute of Management and Technology for Women, Kondapur(V), Hyderabad, Medchal Dist-501301, affiliated to JNTUH Hyderabad, approved by AICTE here after referred to as VMTW.

And

Techfort Software Services Pvt. Ltd. having its registered premises at 502, Venkoti Building, SBH Officers Colony, Mega Hills, Madhapur, Hyderabad, Telangana 500081.

NOW IT IS HEREBY MUTUALLY AGREED BY AND BETWEEN THE PARTIES HERE TO AS FOLLOWS:

SCOPE OF MOU

VMTW and Techfort Software services Pvt. Ltd, express a strong desire to cooperate and agree to work in mutually beneficial areas to enhance the quality of education of the Engineering College students and contribute to conduct academic projects.

AGREEMENT

Techfort Software services Pvt. Ltd, Will offer the following to VMTW, if required:

- Research Development and Consultancy Department of VMTW will help in design expertise and the theoretical analysis as per the Techfort Software Services Pvt. Ltd requirements.
- To offer the Internships to students.
- Consultancy to improve the quality and productivity and process.
- To share ideas and implement innovative ideas in design and development of missiles and control algorithms.




PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

Techfort Software services Pvt. Ltd. 502, Venkoti Building, SBH Officers Colony, Mega Hills, Hyderabad, Telangana 500081 website: <http://techfortit.com/>

- Software and Hardware implementation of research ideas by the industry and academic experts.

TERMS AND CONDITIONS

- Failure of either party to enforce any of its rights under this agreement at any time shall not constitute violation of right.
- This MoU shall be valid for a period of two years from the date of signing the agreement.
- The submission of assigned works should be completed as soon as possible with best outcomes.

The above entered MOU is strictly confidential between Techfort Software Services Pvt. Ltd, and Vignan's Institute of Management and Technology for Women.

Signed by:

For and on behalf of



Vignan's Institute of Management and Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

For and on behalf of



Techfort Software Services Pvt. Ltd.



Techfort Software Services Pvt. Ltd. 502, Venkoti Building SRN Engineers Colony, Mega Hills, Madhapur, Telangana 500081 website: <http://techfortit.com/>



PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is executed on Day, **01/07/2019**.

Between

Electronics and Communication Engineering Department of **Vignan's Institute of Management and Technology for women**, an Engineering College run by Lavu Educational Society, Guntur (hereinafter referred to as "**Vignan's Institute of Management and Technology for women**", which expression shall, unless repugnant to the context or meaning thereof, include its successors, legal representatives and permitted assignees) on FIRST PART.

and

Deeksha Technologies, a Company duly organized and existing under the laws of India having its registered office at Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore (hereafter referred to as "**Deeksha Technologies**", which expression shall unless repugnant to the context or meaning thereof, include its successors, legal representative and permitted assignees) on SECOND PART

AND WHEREAS, "**Vignan's Institute of Management and Technology for women**" is among the noteworthy academic institutes of Kondapur offering UG program in Electronics and Communication Engineering, and Computer Engineering.

AND WHEREAS, **Deeksha Technologies**, is a registered company, engaged in Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore AND WHERE both "**Vignan's Institute of Management and Technology for women**" and **Deeksha Technologies** are desirous of associating with each other for faculty and student exchange.

Reg No. 250/2019, Chandrareddy College, Near Muthukur Bus stand, Nellore. Phone: 074163 89674, 898179; Email: codes.deeksha@gmail.com




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Now therefore, in consideration of the premises and the actual covenants herein contained, it is agreed by both **Vignan's Institute of Management and Technology for women** and **Deeksha Technologies** as under.

1. Definitions and Interpretation

- 1.0 "MOU" shall mean this Memorandum of Understanding executed between **Vignan's Institute of Management and Technology for women** and **Deeksha Technologies** on 01-07-2019.
- 1.1 "Party" or "Parties" shall mean **Vignan's Institute of Management and Technology for women** and **Deeksha Technologies** individually and collectively as the context may require.
- 1.2 The headings/subheadings/titles sub-titles are only for the sake of convenience and shall not be interpreted to restrict or otherwise affect the meaning or import of the clauses, which shall be interpreted solely in light of the contents thereof.
- 1.3 Use of words in the singular includes the plural and vice versa and the masculine gender includes the feminine where applicable.
- 1.4 Where a word or phrase is defined, other parts of speech and grammatical forms of that word or phrase shall have the corresponding meanings. Any reference to 'Writing' includes printing, typing, lithography and other means of reproducing words in visible form.

2. Focus Area

- 2.1. **Research collaboration**
- 2.2. Exchange of Faculty and Student for mutual benefit.

Reg No. 250/2017 Address: Opp Chandra reddy College, Near Muthukur Bus stand, Nellore, Phone: 074163 89674,
9898179, Email: codes.deeksha@gmail.com




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

3. Responsibility Structure

- 3.0 **Vignan's Institute of Management and Technology for women** shall provide the infrastructure of systems, LCD projector etc. for the Expert Lectures. Also the labs and other research equipment are available in the lab.
- 3.1 **Deeksha Technologies** shall be responsible for arrangements & co-ordination for supply of Industry Expertise, Design training program, Process of necessary Appointments with Industries for Industry Internship Program, Projects as well as Visits in co-ordination with staff & HoD Electronics Department of Vignan's Institute of Management and Technology for women.
- 3.2 **Vignan's Institute of Management and Technology for women** shall create awareness amongst its students for promotion of the activity especially Internship Program.

4. Relationship

This MOU relates solely to the intention of the parties, wherein **Vignan's Institute of Management and Technology for women** and **Deeksha Technologies** jointly work together and shall not extend to any other activity or create a partnership between the Parties hereto and under any law of any country. The parties agree that it is not their intention to share any loss or profit between them in their respective fields, except to the extent expressly provided herein.

5. Authority to Bind

No party shall act on behalf of the other party to contractually bind the other Party under the terms of this MOU having first obtained the other Party's written agreement.

6. Confidential and Proprietary Information

Reg No. 250/2017 Address: Opp Chandra reddy College, Near Muthukur Bus stand, Nellore, Phone: 074163 89674, 8919898179, Email: codes.deeksha@gmail.com




Vignan's Institute of Management & Technology
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

- 6.1 “Confidential Information” shall mean all information, including the material and licenses or other information if any so given to **Vignan’s Institute of Management and Technology for women**, written or verbal, identified as confidential or of a nature that a reasonable person would understand as being considered confidential by **Deeksha Technologies** and disclosed by **Deeksha Technologies** to **Vignan’s Institute of Management and Technology for women** or its faculty which is related to **Deeksha Technologies** information such as course material, training data, guidance notes, procedures, methodology, etc.
- 6.2 **Vignan’s Institute of Management and Technology for women** shall hold in trust and confidence for **Deeksha Technologies** all confidential information provided by **Deeksha Technologies** and **Vignan’s Institute of Management and Technology for women** shall not disclose to any person or use such information for any purpose other than defined in this MOU. **Vignan’s Institute of Management and Technology for women** shall not make any copies of the confidential information other than are required for the work involved and with prior and mutual consent from **Deeksha Technologies** and shall return/destroy all such information at the termination of the contract. By disclosing this information to **Vignan’s Institute of Management and Technology for women**, **Deeksha Technologies** does not grant any expressed, implied or other license or right to **Vignan’s Institute of Management and Technology for women** to propagate the information. **Deeksha Technologies** hereby grants to **Vignan’s Institute of Management and Technology for women** an academic, non-exclusive, non-transferable right and license solely for the purpose of providing practical training to the **Vignan’s Institute of Management and Technology for women** students.
- 6.3 **Vignan’s Institute of Management and Technology for women** shall not disclose **Deeksha Technologies** confidential information without first obtaining written consent from **Deeksha Technologies**.
- 6.4 **Vignan’s Institute of Management and Technology for women** shall disclose **Deeksha Technologies** confidential information only to **Vignan’s Institute of Management and Technology for women** employees having a legitimate reason to know the same and shall inform each employee receiving the confidential information of the confidential nature of the same and **Vignan’s Institute of Management and Technology for women** obligations hereunder.

Reg No. 250/2017 Address: Opp Chandra reddy College, Near Muthukur Bus stand, Nellore. Phone 074165 89674, 8919898179; Email: codes.deeksha@gmail.com




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

6.5 **Vignan's Institute of Management and Technology for women** shall secure documents, items of work in progress and work products that embody confidential information in locked files or areas providing restricted access to prevent its unauthorized disclosure. **Vignan's Institute of Management and Technology for women** shall maintain adequate procedures to prevent loss of any confidential information or confidential documents provided to it by **Deeksha Technologies**. In the event of any loss, **Vignan's Institute of Management and Technology for women** shall notify **Deeksha Technologies** immediately.

7. Termination

1 (One) Year from the date of signing of MOU, unless renewed on a mutually agreed terms and condition for a further period. During the initial term or any renewal term, either party may terminate this MOU, after mutually agreed days, with prior written notice to the other party.

8. Assignment

This MOU shall not be assigned or otherwise transferred by any Party, in whole or in part, without the express written consent of the Other Party.

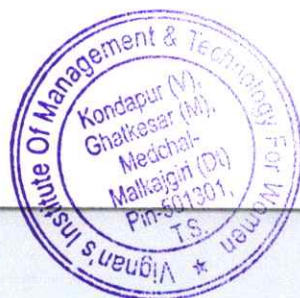
9. Consequential Damages

Other than explicitly mentioned in this MOU, either Party shall not under any circumstances or at any time be liable to the other under or in connection with the MOU for any special or any direct or indirect loss or damage or for any consequential loss or damage, whether direct or indirect, including but without limiting the generality of the foregoing, loss of profits, loss of production, or loss of opportunities.

10. Severability

If any provision of this MOU or the application thereof to any person, entity or circumstance shall be invalid or unenforceable to any extent, the remainder of this MOU shall not be affected thereby and the application of such provision shall be enforced to the greatest extent permitted by law.

Reg No. 250/2017 Address: Opp Chandra reddy College, Near Muthukur Bus stand, Nellore. Phone: (07416) 89674, 8919898179; Email: codes.deeksha@gmail.com




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

11. Arbitration

- 11.1 All disputes, differences or claims arising out of or in relation with this MOU not limited but inclusive of as regards to rights, liabilities, damages, claims, breach or interpretation of this MOU between the Parties shall be referred to arbitration.
- 11.2 Any party shall give a written notice to other party of existing such dispute, difference or claim. On receipt of such notice within 15 days, the Head of Institution of **Vignan's Institute of Management and Technology for women** and Partner, **Deeksha Technologies** or any other persons so nominated by the respective Parties, shall meet together and try to resolve such dispute, difference or claim amicably. If such amicable solution is not arrived within one month, then the matter shall be referred to Arbitration.
- 11.3 The place of arbitration shall be Hyderabad. The arbitration proceedings shall be conducted in English as per the rules of The Arbitration and Conciliation Act 1996 by three (3) arbitrators appointed in accordance with the said Rules. The Arbitration Decision shall be final and binding.

12. Governing Law

The agreement shall be governed by Law of the Land.

13. Notices

- 13.1 Any notice and other communications provided for in the Agreement shall be in writing in English and shall be first transmitted by facsimile transmission and/or by internationally recognized courier service, in the manner as elected by the Party giving such notice:
In the case of notices to **Deeksha Technologies**.

Reg. Office Address:

Deeksha Technologies

Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003,
Nellore.

Reg No. 250/2017 Address: Opp. Chandra reddy College, Near Muthukur Bus stand, Nellore. Phone: 074163 89674,
8919898179, Email: codes.deeksha@gmail.com




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DI)-501301
Telangana State



DEEKSHA TECHNOLOGIES

College Address:

Vignan's Institute of Management and Technology for Women (VMTW),
Kondapur(V), Hyderabad, Medchal Dist-501301

13.2 Either Party may, from time to time, change its address or representative for receipt of notices or other communications provided for in this Agreement by giving to the other not less than 15 days prior written notice.

14. Entire understanding

This MOU expresses the whole agreement reached between the Parties. Consequently, this Agreement supersedes any previous letter or document of whatsoever nature exchanged between the Parties with respect to this Agreement.

15. Waiver

The waivers by one Party hereto of any default hereunder or of any covenant, agreement or condition contained herein shall not be construed to constitute a waiver of any other default or breach hereof whether similar or otherwise.

16. Amendment

No amendment to this MOU shall be valid and binding to the Parties unless it is made in writing and signed by an authorized representative of all Parties to this Agreement.

In witness where of the Parties have caused this Agreement to be executed by their duly authorized representatives on this 1st July 2019.

For Deeksha Educational Society

Managing Director
For Deeksha Technologies

Name : Mr. P Hari Prasad
Designation : Managing Director

For Vignan's Institute of Management
and Technology for women

Name : Dr. P. Sudhakara Rao
Designation : Principal

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Reg No: 250/2017 Address: Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301, Telangana State



PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is executed on Day, **12/08/2020**.

Between

Electronics and Communication Engineering Department of **Vignan's Institute of Management and Technology for women**, an Engineering College run by Lavu Educational Society, Guntur (hereinafter referred to as "**Vignan's Institute of Management and Technology for women**", which expression shall, unless repugnant to the context or meaning thereof, include its successors, legal representatives and permitted assignees) on FIRST PART.

And

Deeksha Technologies, a Company duly organized and existing under the laws of India having its registered office at Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore (hereafter referred to as "**Deeksha Technologies**", which expression shall unless repugnant to the context or meaning thereof, include its successors, legal representative and permitted assignees) on SECOND PART

AND WHEREAS, "Vignan's Institute of Management and Technology for women" is among the noteworthy academic institutes of Kondapur offering UG program in Electronics and Communication Engineering, and Computer Engineering.

AND WHEREAS, Deeksha Technologies, is a registered company, engaged in Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore AND WHERE both "Vignan's Institute of Management and Technology for women" and Deeksha Technologies are desirous of associating with each other in co-ordination with Vignan's Institute of Management and Technology for women Faculties & HoD.

Reg No. 250/2017 Address: Chandrareddy Collage, Near Muthukur Bus stand, Nellore. Phone: 08443 80674, 844388179 Email: codes.deeksha@gmail.com



Handwritten Signature
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



DEEKSHA TECHNOLOGIES

Now therefore, in consideration of the premises and the actual covenants herein contained, it is agreed by both Vignan's Institute of Management and Technology for women and Deeksha Technologies as under.

1. **Definitions and Interpretation**

- 1.1 "MOU" shall mean this Memorandum of Understanding executed between Vignan's Institute of Management and Technology for women and Deeksha Technologies on 12-08-2020.
- 1.2 "Party" or "Parties" shall mean Vignan's Institute of Management and Technology for women and Deeksha Technologies individually and collectively as the context may require;
- 1.3 The headings/subheadings/titles sub-titles are only for the sake of convenience and shall not be interpreted to restrict or otherwise affect the meaning or import of the clauses, which shall be interpreted solely in light of the contents thereof.
- 1.4 Use of words in the singular includes the plural and vice versa and the masculine gender includes the feminine where applicable.
- 1.5 Where a word or phrase is defined, other parts of speech and grammatical forms of that word or phrase shall have the corresponding meanings. Any reference to 'Writing' includes printing, typing, lithography and other means of reproducing words in visible form.

2. **Responsibility Structure**

- 2.1 Vignan's Institute of Management and Technology for women shall provide the infrastructure of systems, LCD projector etc. for the Expert Lectures. Also the labs and other research equipment available in the lab.
- 2.2 Deeksha Technologies shall be responsible for arrangements & co- ordination for supply of

Industry Expertise, Design training program, Process of necessary Appointments with
Reg No. 250/2017 Address: Opp. Sankar Reddy College, Near Muthukur Bus Stand, Nellore, Phone: 07416389674,
9888811113, Email: dees.deeksha@gmail.com



ASHA
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
Telangana State



DEEKSHA TECHNOLOGIES

Industries for Industry Internship Program, Projects as well as Visits in co-ordination with staff & HoD Electronics Department of Vignan's Institute of Management and Technology for women.

- 2.3 Vignan's Institute of Management and Technology for women shall create awareness amongst its students for promotion of the activity especially Internship Program.

3. Relationship

This MOU relates solely to the intention of the parties, wherein Vignan's Institute of Management and Technology for women and Deeksha Technologies jointly work together and shall not extend to any other activity or create a partnership between the Parties hereto and under any law of any country. The parties agree that it is not their intention to share any loss or profit between them in their respective fields, except to the extent expressly provided herein.

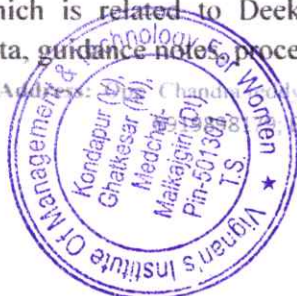
4. Authority to Bind

No party shall act on behalf of the other party to contractually bind the other Party under the terms of this MOU having first obtained the other Party's written agreement.

5. Confidential and Proprietary Information

- 5.1 "Confidential Information" shall mean all information, including the material and licenses or other information if any so given to Vignan's Institute of Management and Technology for women, written or verbal, identified as confidential or of a nature that a reasonable person would understand as being considered confidential by Deeksha Technologies and disclosed by Deeksha Technologies to Vignan's Institute of Management and Technology for women or its faculty which is related to Deeksha Technologies information such as course material, training data, guidance notes, procedures, methodology, etc.

Reg No. 250/2017 Andhra Pradesh: Chandra Sekhri College, Near Muthukur Bus stand, Nellore. Phone: 074163 89674, Email: codes.deeksha@gmail.com



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501304
Telangana State



DEEKSHA TECHNOLOGIES

- 5.2 Vignan's Institute of Management and Technology for women shall hold in trust and confidence for Deeksha Technologies all confidential information provided by Deeksha Technologies and Vignan's Institute of Management and Technology for women shall not disclose to any person or use such information for any purpose other than defined in this MOU. Vignan's Institute of Management and Technology for women shall not make any copies of the confidential information other than are required for the work involved and with prior and mutual consent from Deeksha Technologies and shall return/destroy all such information at the termination of the contract. By disclosing this information to Vignan's Institute of Management and Technology for women, Deeksha Technologies does not grant any expressed, implied or other license or right to Vignan's Institute of Management and Technology for women to propagate the information. Deeksha Technologies hereby grants to Vignan's Institute of Management and Technology for women an academic, non-exclusive, non-transferable right and license solely for the purpose of providing practical training to the Vignan's Institute of Management and Technology for women students.
- 5.3 Vignan's Institute of Management and Technology for women shall not disclose Deeksha Technologies confidential information without first obtaining written consent from Deeksha Technologies
- 5.4 Vignan's Institute of Management and Technology for women shall disclose Deeksha Technologies confidential information only to Vignan's Institute of Management and Technology for women employees having a legitimate reason to know the same and shall inform each employee receiving the confidential information of the confidential nature of the same and Vignan's Institute of Management and Technology for women obligations hereunder.
- 5.5 Vignan's Institute of Management and Technology for women shall secure documents, items of work in progress and work products that embody confidential information in locked files or areas providing restricted access to prevent its unauthorized disclosure. Vignan's Institute of Management and Technology for women shall maintain adequate procedures to prevent loss of any confidential information or confidential documents provided to it by Deeksha Technologies. In the event of any loss, Vignan's Institute of Management and Technology for women shall notify Deeksha Technologies immediately.

Reg No. 250/2017 Address: Vignan's Institute of Management & Technology For Women, Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301, T.S. Email: codes.deeksha@gmail.com Phone: 074163 89674.



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



6. **Termination**

1 (One) Year from the date of signing of MOU, unless renewed on a mutually agreed terms and condition for a further period. During the initial term or any renewal term, either party may terminate this MOU, after mutually agreed days, with prior written notice to the other party.

7. **Assignment**

This MOU shall not be assigned or otherwise transferred by any Party, inwhole or in part, without the express written consent of the Other Party.

8. **Consequential Damages**

Other than explicitly mentioned in this MOU, either Party shall not under any circumstances or at any time be liable to the other under or in connection with the MOU for any special or any direct or indirect loss or damage or for any consequential loss or damage, whether direct or indirect, including but without limiting the generality of the foregoing, loss of profits, loss of production, or loss of opportunities.

9. **Severability**

If any provision of this MOU or the application thereof to any person, entity or circumstance shall be invalid or unenforceable to any extent, the remainder of this MOU shall not be affected thereby and the application of such provision shall be enforced to the greatest extent permitted by law.

10. **Arbitration**

10.1 All disputes, differences or claims arising out of or in relation with this MOU not limited but inclusive of as regards to rights, liabilities, damages, claims, breach or interpretation of this MOU between the Parties shall be referred to arbitration.

Reg No. 250/2017 Address: Vignans Institute of Management & Technology For Women, Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt), Pin-501301, T.S. Email: codes.deeksha@gmail.com



Adh
PRINCIPAL

Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



DEEKSHA TECHNOLOGIES

10.2 Any party shall give a written notice to other party of existing such dispute, difference or claim. On receipt of such notice within 15 days, the Head of Institution of Vignan's Institute of Management and Technology for women and Partner, Deeksha Technologies or any other persons so nominated by the respective Parties, shall meet together and try to resolve such dispute, difference or claim amicably. If such amicable solution is not arrived within one month, then the matter shall be referred to Arbitration.

10.3 The place of arbitration shall be Hyderabad. The arbitration proceedings shall be conducted in English as per the rules of The Arbitration and Conciliation Act 1996 by three (3) arbitrators appointed in accordance with the said Rules. The Arbitration Decision shall be final and binding.

11.0 Governing Law

The agreement shall be governed by Law of the Land.

12.0 Notices

12.1 Any notice and other communications provided for in the Agreement shall be in writing in English and shall be first transmitted by facsimile transmission and/or by internationally recognized courier service, in the manner as elected by the Party giving such notice: In the case of notices to Deeksha Technologies.

Reg. Office Address:

Deeksha Technologies

Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore.

College Address:

Vignan's Institute of Management and Technology for Women (VMTW),
Kondapur (V), Hyderabad, Medchal Dist-501301

12.2 Either Party may, from time to time, change its address or representative for receipt of notices or other communications provided for in this Agreement by giving to the other not less than 15 days prior written notice.

Reg No: 2502017
Chandrareddy Collage, Near Muthukur Bus stand, Nellore. Phone: 074163 89674,
501301, Pin-501301, Email: codes.deeksha@gmail.com




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Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Maikajiri(Dt)-501301
Telangana State

Institute of Management and Technology for women and Partner, Deeksha Technologies or any other persons so nominated by the respective Parties, shall meet together and try to resolve such dispute, difference or claim amicably. If such amicable solution is not arrived within one month, then the matter shall be referred to Arbitration.

10.3 The place of arbitration shall be Hyderabad. The arbitration proceedings shall be conducted in English as per the rules of The Arbitration and Conciliation Act 1996 by three (3) arbitrators appointed in accordance with the said Rules. The Arbitration Decision shall be final and binding.

11. Governing Law

The agreement shall be governed by the Law of the Land.

12. Notices

12.1 Any notice and other communications provided for in the Agreement shall be in writing in English and shall be first transmitted by facsimile transmission and/or by internationally recognized courier service, in the manner as elected by the Party giving such notice:

In the case of notices to **Deeksha Technologies**.

Reg. Office Address:

Deeksha Technologies

Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore.


College Address:

Vignan's Institute of Management and Technology for Women (**VMTW**),
Kondapur (V), Hyderabad, Medchal Dist-501301

12.2 Either Party may, from time to time, change its address or representative for receipt of notices or other communications provided for in this Agreement by giving to the other not less than 15 days prior written notice.

Reg No. 250/2017 Address: Vignan's Institute of Management & Technology For Women, Kondapur (V), Hyderabad, Medchal Dist-501301, Phone: 074163 89674, Email: codes.deeksha@gmail.com




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkoar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

13. Entire understanding

This MOU expresses the whole agreement reached between the Parties. Consequently, this Agreement supersedes any previous letter or document of whatsoever nature exchanged between the Parties with respect to this Agreement.

14. Waiver

The waivers by one Party hereto of any default hereunder or of any covenant, agreement or condition contained herein shall not be construed to constitute a waiver of any other default or breach hereof whether similar or otherwise.

15. Amendment

No amendment to this MOU shall be valid and binding to the Parties unless it is made in writing and signed by authorized representative of all Parties to this Agreement.

In witness whereof the Parties have caused this Agreement to be executed by their duly authorized representatives on this 12th Day of August 2020.



For Deeksha Technologies

Name : Mr. P Hari Prasad
Designation : Managing Director

For Deeksha Educational Society

Reg No. 250/2017

Address: Director
Managing Director

Address: Ghatkesar reddy College, Near Muthukur Bus stand, Nellore, Phone: 074163 89674,
8919898179, Email: codes.deeksha@gmail.com

PRINCIPAL

Vignn's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



Vignn's Institute of Management and
Technology for women

Name : Dr. G. Apparao Naidu
Designation : Principal

PRINCIPAL

Vignn's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State





DEEKSHA TECHNOLOGIES

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is executed on Day, **18/08/2021**

Between

Electronics and Communication Engineering Department of **Vignan's Institute of Management and Technology for women**, an Engineering College run by Lavu Educational Society, Guntur (hereinafter referred to as "**Vignan's Institute of Management and Technology for women**", which expression shall, unless repugnant to the context or meaning thereof, include its successors, legal representatives and permitted assignees) on FIRST PART.

And

Deeksha Technologies, a Company duly organized and existing under the laws of India having its registered office at Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore (hereafter referred to as "**Deeksha Technologies**", which expression shall unless repugnant to the context or meaning thereof, include its successors, legal representative and permitted assignees) on SECOND PART

AND WHEREAS, "**Vignan's Institute of Management and Technology for women**" is among the noteworthy academic institutes of Kondapur offering UG program in Electronics and Communication Engineering, and Computer Engineering.

AND WHEREAS, **Deeksha Technologies**, is a registered company, engaged in Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore AND WHERE both "**Vignan's Institute of Management and Technology for women**" and **Deeksha Technologies** are desirous of associating with each other to expertise students of **Vignan's Institute of Management and Technology for women** on **Embedded System and VLSI Design** also help in conducting **Technical Trainings, Expert Projects and Workshops** as an addition to **Vignan's Institute of Management and Technology for women** curriculum in co-ordination

Reg No. 250/2019, Opp. Chandrareddy College, Near Muthukur Bus stand, Nellore, Phone: 074163 89674, 894898179; Email: codes.deeksha@gmail.com




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Telangana State



DEEKSHA TECHNOLOGIES

with Vignan's Institute of Management and Technology for women Faculties & HoD.

Now therefore, in consideration of the premises and the actual covenants herein contained, it is agreed by both **Vignan's Institute of Management and Technology for women** and **Deeksha Technologies** as under.

1. Definitions and Interpretation

- 1.1 "MOU" shall mean this Memorandum of Understanding executed between **Vignan's Institute of Management and Technology for women** and **Deeksha Technologies** on **18-08-2021**
- 1.2 "Party" or "Parties" shall mean **Vignan's Institute of Management and Technology for women** and **Deeksha Technologies** individually and collectively as the context may require;
- 1.3 The headings/subheadings/titles sub-titles are only for the sake of convenience and shall not be interpreted to restrict or otherwise affect the meaning or import of the clauses, which shall be interpreted solely in light of the contents thereof.
- 1.4 Use of words in the singular includes the plural and vice versa and the masculine gender includes the feminine where applicable.
- 1.5 Where a word or phrase is defined, other parts of speech and grammatical forms of that word or phrase shall have the corresponding meanings. Any reference to 'Writing' includes printing, typing, lithography and other means of reproducing words in visible form.

2. Responsibility Structure

- 2.1 **Vignan's Institute of Management and Technology for women** shall provide the infrastructure of systems, LCD projector etc. for the Expert Lectures. Also the labs and other research equipment available in the lab.
- 2.2 **Deeksha Technologies** shall be responsible for arrangements & co-ordination for supply of Industry Expertise, Design training program, Process of necessary Appointments with

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Kondapur(V), Ghatkesar(M), Medchal-Malkajiri(Dt)-501301
Telangana State

Industries for Industry Internship Program, Projects as well as Visits in co-ordination with staff & HoD Electronics Department of Vignan's Institute of Management and Technology for women.

- 2.3 **Vignan's Institute of Management and Technology for women** shall create awareness amongst its students for promotion of the activity especially Internship Program.

3. Relationship

This MOU relates solely to the intention of the parties, wherein **Vignan's Institute of Management and Technology for women** and **Deeksha Technologies** jointly work together and shall not extend to any other activity or create a partnership between the Parties hereto and under any law of any country. The parties agree that it is not their intention to share any loss or profit between them in their respective fields, except to the extent expressly provided herein.

4. Authority to Bind

No party shall act on behalf of the other party to contractually bind the other Party under the terms of this MOU having first obtained the other Party's written agreement.

5. Confidential and Proprietary Information

"Confidential Information" shall mean all information, including the material and licenses or other information if any so given to **Vignan's Institute of Management and Technology for women**, written or verbal, identified as confidential or of a nature that a reasonable person would understand as being considered confidential by **Deeksha Technologies** and disclosed by **Deeksha Technologies** to **Vignan's Institute of Management and Technology for women** or its faculty which is related to **Deeksha Technologies** information such as course material, training data, guidance notes, procedures, methodology, etc.

- 5.1 **Vignan's Institute of Management and Technology for women** shall hold in trust and confidence for **Deeksha Technologies** all confidential information provided by **Deeksha Technologies** and **Vignan's Institute of Management and Technology for women** shall not disclose to any person or use such information for any purpose other than defined in

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Kondapur(V), Ghatkesar(M), Medchal-Malkajiri(Dt)-501301
Telangana State



DEEKSHA TECHNOLOGIES

this MOU. **Vignan's Institute of Management and Technology for women** shall not make any copies of the confidential information other than are required for the work involved and with prior and mutual consent from **Deeksha Technologies** and shall return/destroy all such information at the termination of the contract. By disclosing this information to **Vignan's Institute of Management and Technology for women**, **Deeksha Technologies** does not grant any expressed, implied or other license or right to **Vignan's Institute of Management and Technology for women** to propagate the information. **Deeksha Technologies** hereby grants to **Vignan's Institute of Management and Technology for women** an academic, non-exclusive, non-transferable right and license solely for the purpose of providing practical training to the **Vignan's Institute of Management and Technology for women** students.

5.2 **Vignan's Institute of Management and Technology for women** shall not disclose **Deeksha Technologies** confidential information without first obtaining written consent from **Deeksha Technologies**

5.3 **Vignan's Institute of Management and Technology for women** shall disclose **Deeksha Technologies** confidential information only to **Vignan's Institute of Management and Technology for women** employees having a legitimate reason to know the same and shall inform each employee receiving the confidential information of the confidential nature of the same and **Vignan's Institute of Management and Technology for women** obligations hereunder.

5.4 **Vignan's Institute of Management and Technology for women** shall secure documents, items of work in progress and work products that embody confidential information in locked files or areas providing restricted access to prevent its unauthorized disclosure. **Vignan's Institute of Management and Technology for women** shall maintain adequate procedures to prevent loss of any confidential information or confidential documents provided to it by **Deeksha Technologies**. In the event of any loss, **Vignan's Institute of Management and Technology for women** shall notify **Deeksha Technologies** immediately.

6. Termination

1 (One) Year from the date of signing of MOU, unless renewed on a mutually agreed terms and condition for a further period. During the initial term or any renewal term, either

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Handwritten signature in green ink.

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Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



DEEKSHA TECHNOLOGIES

party may terminate this MOU, after mutually agreed days, with prior written notice to the other party.

7. Assignment

This MOU shall not be assigned or otherwise transferred by any Party, in whole or in part, without the express written consent of the Other Party.

8. Consequential Damages

Other than explicitly mentioned in this MOU, either Party shall not under any circumstances or at any time be liable to the other under or in connection with the MOU for any special or any direct or indirect loss or damage or for any consequential loss or damage, whether direct or indirect, including but without limiting the generality of the foregoing, loss of profits, loss of production, or loss of opportunities.

9. Severability

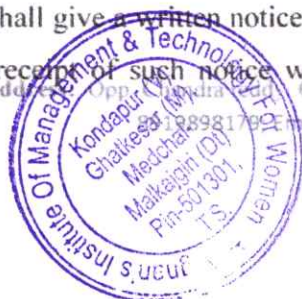
If any provision of this MOU or the application thereof to any person, entity or circumstance shall be invalid or unenforceable to any extent, the remainder of this MOU shall not be affected thereby and the application of such provision shall be enforced to the greatest extent permitted by law.

10. Arbitration

10.1 All disputes, differences or claims arising out of or in relation with this MOU not limited but inclusive of as regards to rights, liabilities, damages, claims, breach or interpretation of this MOU between the Parties shall be referred to arbitration.

10.2 Any party shall give a written notice to other party of existing such dispute, difference or claim. On receipt of such notice within 15 days, the Head of Institution of Vignan's

Reg No. 250/2017 Address: Opp. Vignana College, Near Vuthukur Bus stand, Nellore. Phone: 074163 89674, 8898179977. Email: codes.deeksha@gmail.com



Handwritten signature

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DEEKSHA TECHNOLOGIES

resolve such dispute, difference or claim amicably. If such amicable solution is not arrived within one month, then the matter shall be referred to Arbitration.

10.3 The place of arbitration shall be Hyderabad. The arbitration proceedings shall be conducted in English as per the rules of The Arbitration and Conciliation Act 1996 by three (3) arbitrators appointed in accordance with the said Rules. The Arbitration Decision shall be final and binding.

11. Governing Law

The agreement shall be governed by the Law of the Land.

12. Notices

12.1 Any notice and other communications provided for in the Agreement shall be in writing in English and shall be first transmitted by facsimile transmission and/or by internationally recognized courier service, in the manner as elected by the Party giving such notice:

In the case of notices to **Deeksha Technologies**,

Reg. Office Address:

Deeksha Technologies

Near Muthukur Bus Stand, Opposite Chandrareddy Collage, Pin Code-524003, Nellore.

College Address:

Vignans Institute of Management and Technology for Women (VMTW),
Kondapur (V), Hyderabad, Medchal Dist-501301

12.2 Either Party may, from time to time, change its address or representative for receipt of notices or other communications provided for in this Agreement by giving to the other not less than 15 days prior written notice.

Reg No. 250/2017 Add: Chandrareddy College, Near Muthukur Bus stand, Nellore Phone: 074163 89674, Email: codes.deeksha@gmail.com




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Telangana State



DEEKSHA TECHNOLOGIES

13. Entire understanding

This MOU expresses the whole agreement reached between the Parties. Consequently, this Agreement supersedes any previous letter or document of whatsoever nature exchanged between the Parties with respect to this Agreement.

14. Waiver

The waivers by one Party hereto of any default hereunder or of any covenant, agreement or condition contained herein shall not be construed to constitute a waiver of any other default or breach hereof whether similar or otherwise.

15. Amendment

No amendment to this MOU shall be valid and binding to the Parties unless it is made in writing and signed by an authorized representative of all Parties to this Agreement. In witness where of the Parties have caused this Agreement to be executed by their duly authorized representatives on this 18th Day of August 2021.

For Deeksha Technologies

Name : Mr. P Hari Prasad
Designation : Managing Director

For Vignan's Institute of Management and Technology for women

Name : Dr. G. Apparao Naidu
Designation : Principal

Reg No. 250/2017 Address: Vignan's Institute of Management & Technology, Reddy College, Near Muthukur Bus stand, Nellore, Phone: 074163 89674, Email: codes.deeksha@gmail.com



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Kondapur(V), Chatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN



CSE & ECE

Ref: VMTW/PO/2020/COLLAB/1

Date: 12.06.2019

COLLABORATION AGREEMENT BETWEEN

M/s VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN,
Kondapur(V), Ghatkesar(M), Medchal(D), 501301

And

M/s. JOGINAPALLY B.R. ENGINEERING COLLEGE
Yenkapally(V), Moinabad(M), Ranga Reddy(D), 500075

This agreement is made on 12.06.2019.

M/s VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

Kondapur(V), Ghatkesar(M), Medchal(D), 501301, Telangana, is an affiliated institute under JNTUH and established in the Year 2008. College Code-VMTW, under LAVU Educational Society, Hyderabad.

and

M/s. JOGINAPALLY B.R. ENGINEERING COLLEGE

Yenkapally(V), Moinabad(M), Ranga Reddy(D), 500075, Telangana, is an affiliated institute under JNTUH and established in the year 2002. College Code-IBREC, under J. B.R. Educational Society.

Aim of Memorandum of Understanding

1. The MOU aims to:

- Interact and exchange the technical capability of both organizations to the mutual benefit of each other. Sharing TECHNOLOGY JOGINAPALLY B.R. ENGINEERING COLLEGE
 - Share of the VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN with approval from competent authorities of IBREC.
- Coordinate with the R&D Faculty of JOGINAPALLY B.R. ENGINEERING COLLEGE and the faculty of VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN to bring out a good instruction manual which shall be used by both of them, on identified projects/product development.

2. Common Interest and Agreement.

After a discussion about the strengths and objectives of VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN and JOGINAPALLY B.R. ENGINEERING COLLEGE both have agreed to share the expertise available for mutual benefits in the fields of education, training, scientific and industrial research. Subsequently the discussions were held among the faculty from all the departments of IBREC and certain thematic area/programs has been identified for mutual collaboration as listed below:

- Faculty exchange
- Seminars
- Workshops
- Collaboration of Research & Development activities
- Quality Initiatives.

3. Memorandum of Understanding for the period.

The duration of this MOU shall be Five Years from the signing of the MOU. The MOU Shall stand cancelled if so desired otherwise by either party, and the contract agreement will be renewed with appropriate clauses. The termination of the contract if it is within the contract period shall be discussed and at least two months prior notice should be issued to the other party for the preparations to handle the pending issues.

IN WITNESS WHEREOF THE UNDER SIGNED duly authorized there to have signed this Memorandum of Understanding on Date: 12.06.2019

AUTHORIZED SIGNATORY
M/S VIGNAN'S INSTITUTE OF MANAGEMENT
AND TECHNOLOGY FOR WOMEN
PRINCIPAL

Vignans Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt.)-501301
Telangana State



AUTHORIZED SIGNATORY
M/S JOGINAPALLY B.R. ENGINEERING COLLEGE

Principal
Joginapally B.R. Engineering College
Bhaskarnagar, Village - 278, Yenkapally (V)
Himayath Nagar (Dist), Moinabad (M)
R.R. (Dist), Hyderabad-500 075

PRINCIPAL

Vignans Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt.)-501301
Telangana State

**MEMORANDUM
OF
UNDERSTANDING**

**VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY
FOR WOMEN**

Ghatkesar- 501301, Telanagana

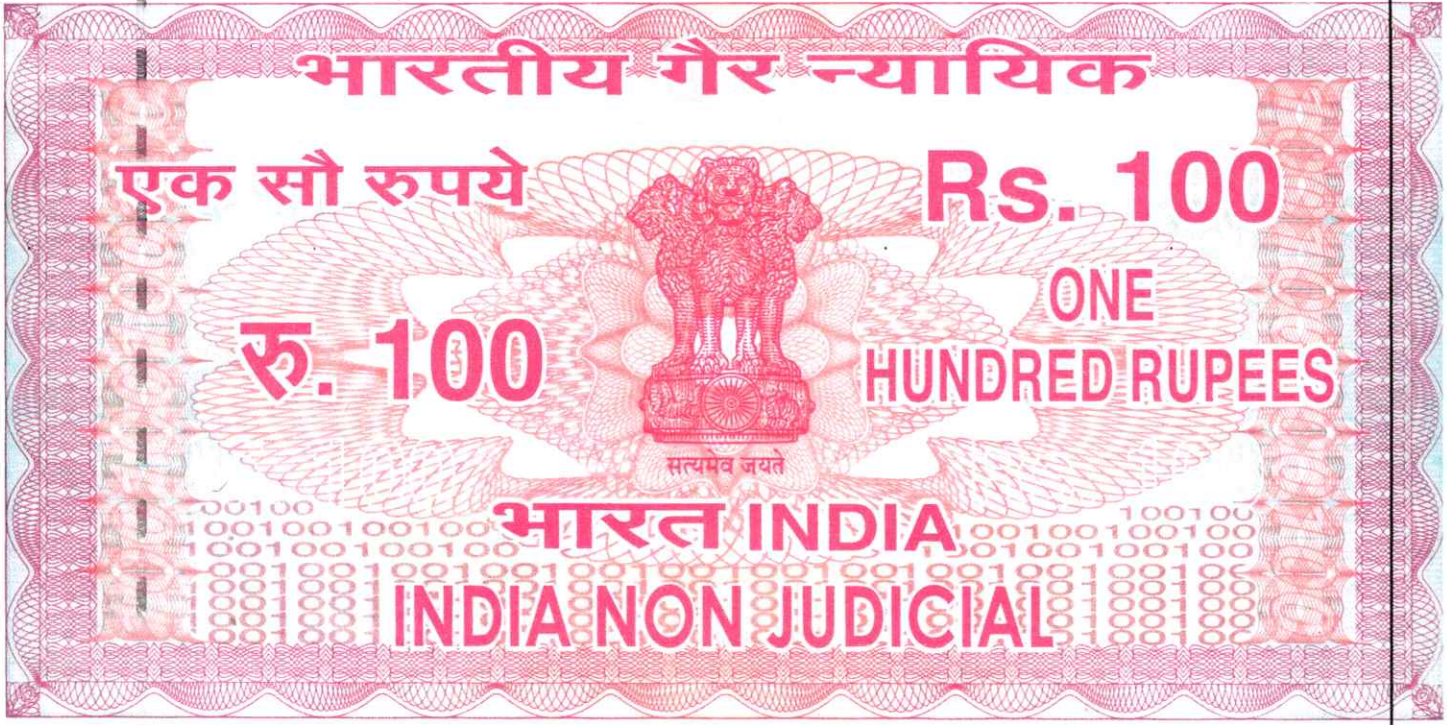
&

SRI GAJANAN E-SLATES PVT LTD

Madhapur, Hyderabad-500081, Telangana



[Handwritten Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



తెలంగాణ తెలంగాణ TELANGANA

Sl No. 12143 Date 27/10/2018
Sold to: Nagesh vattikurti
Sold W/o D/o: V.V. Subba Rao R/o Hyd
To Whom: Mrs. Sri Gajanan E-slates Pvt Ltd, Hyd.

L. Smitha S 552650
Smt L. Smitha Varma
LICENCED STAMP VENDOR
LIC No: 15-10-008/2018
Plot No.527, AAA Residency,
Guttala Begumpet, Ravindra Socie
Kavuri Hills Serilingampally
RANGA REDDY DIST
PHONE NO: 9849504171

MEMORANDUM OF UNDERSTANDING (MoU)

This Memorandum of understanding is entered on 26th December 2018 between the **Vignan's Institute of Management and Technology for Women**, having its registered Office at **Ghatkesar- 501301, Telangana**, (hereinafter called "**College**" or "**First Party**" which expression shall where the context so admits include its successors and permitted assignees)

&

Sri Gajanan E-Slates Private Limited, sole owner of portal www.ekalasaala.com, a company incorporated under the Companies Act, 2013 having its corporate office at #3A, 3rd Floor, Raghuma Towers, Madhapur, Hyderabad -500081 (Telangana-India) (hereinafter called "**eKalasaala**" or "**Second Party**" which expression shall where the context so



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

admits include its successors and permitted assignees) and VMTW is registered under the Vignan's Institute of Management and Technology for Women in engineering Education in the areas of all streams of Engineering and in other areas.

Whereas eKalasaala is an emerging name in the world of Higher Education. It develops teaching aids, methodologies, content and training programs to make a disruptive change in Higher education and in furtherance of only company that offer Online Finishing School for Graduation Students under the portal www.eKalasaala.com. eKalasaala can be introduced as a hybrid education model helping institutions with end to end educational eco system that covers Continuous Faculty Development Program, Workshops for Students and Faculty of Higher Education and Technical Education such as Engineering and Diplomas, TOEFL, IELTS, GRE, GATE, Engineering Software Trainings, Industry Software Trainings, Communication Skills and Personality Development Skills etc.

RESPONSIBILITIES:-

First Party:-

- 1) The College shall cooperate with the Company to implement the Online Finishing School and Virtual Classroom services across all the engineering students studying in the college and its subsidiary/ branches.
- 2) College takes responsibility to provide the Student Level Data to register the students and facilitate.

Second Party:-

- 1) The eKalasaala provides industry specific courses of related areas etc as decided mutually.
- 2) eKalasaala may arrange industry visit, industry expert lecture, project demonstration, and placement assistance etc for students if needed. Any additional placement programs such as Hire-Train-Deploy will have separate fee structure and doesn't come under this MOU.




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Telangana State

- 3) Since all the courses under eKalasaala.com are online in nature, there is limitation for the students to access and eKalasaala shall ensure at least 99% uptime.
- 4) eKalasaala shall bear all costs associated with the preparation, presentation, demonstration, submission of any documents etc. including cost of clarification / verifications of the claims.
- 5) The Training/ FDP/ In-House Training/ Online Training/ Workshop/ eWorkshops/ Conferences /Software Development etc shall be based on latest technology, preferably proven technology.

DELIVERY:

- 1) The mode of training will be online/ and offline when needed.
- 2) The mechanism of operations may be devised jointly later.
- 3) Programmes offered:
 - Online Finishing School
 - Internet of Things
 - AI and Machine learning
 - Engineering Software Trainings
 - Expert Lectures for FDP
 - Technology awareness workshops
 - Campus Recruitment Training
 - GATE /TOEFL/ IELTS/ GRE
 - Other relevant courses entering in the domain of CEG/eKalasaala and useful for students to build 21st century skills.

CONFIDENTIALITY

- 1) The College acknowledges that the information, data and knowledge, which derive in the course of his relationship with eKalasaala under his agreement regarding its business, are all confidential and both party agree to maintain total confidentiality of the same.



Handwritten signature
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

- 2) The eKalasaala agrees that, not to disclose or discuss details of their compensation package to others at any point of time.

OWNERSHIP OF WORK

- 1) During the tenure of this agreement, the intellectual rights for any work of content created/provided by eKalasaala will be reserved with Sri Gajanan E-Slates Pvt Ltd however both CEG and Institute will be allowed to use the content for academic purpose during training programs, FDPs, seminars or similar activity organized in collaboration.
- 2) All intellectual property rights used in arising in the course of performance of this agreement shall belong to and be the property of Sri Gajanan E-Slates Pvt Ltd.

REVENUE SHARING PATTERN

Total subscription amount and other details is as follows:

SUBSCRIPTION FEE PER STUDENT PER ANNUM: Rs.1500/-

CERTIFICATION/ASSESSMENT FEE: As the certification/assessment is done by CEG, Govt. of Rajasthan in the area opted by student.

Fee for certification: Rs.300/- per student
[incl. sending electronic and hard copy to student]




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Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

VALIDITY

The MOU shall be valid, initially for a period of 5 years, extendable by mutual consent.

SETTLEMENT OF DISPUTES:

The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Agreement or the interpretation thereof. If any dispute, difference, question or disagreement arises between the Parties hereto or their respective representatives or assignees, in connection with construction, meaning operation, effect interpretation of the Agreement or breach thereof which Parties are unable to settle mutually within 30 days from the commencement of settlement proceedings and if not settled than the same shall be referred to the court of Hyderabad.

TERMINATION

This MoU may be terminated by giving a notice of one year or the conclusion of ongoing programs, whichever is later, from either side.



PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajiri(Dt)-501301
Telangana State

This memorandum which is in 7 pages is signed on 26-December-2018 and exchanged in at Hyderabad.

For **Vignan's Institute of Management and Technology for Women**, Ghatkesar-501301, Telangana (First Party)

For **Sri Gajanan E-Slates Pvt. Ltd.**, Hyderabad-500081, Telangana (Second Party)

P. Sudhakar

Authorized Signatory

[Signature] For **SRI GAJANAN E-SLATES PVT. LTD.**

Authorized Signatory **DIRECTOR**



Witness:

1. *[Signature]*
K. VINUTHA

1. *[Signature]*
SRK Parvathamma Hande

Date: 26-12-2018

Place: Hyderabad



[Signature]
PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D)-501301
Telangana

Agreement Award



Indian-Non Judicial Stamp Haryana Government



Date : 26/12/2018

Certificate No. G0Z2018L1755



Stamp Duty Paid : ₹ 101
(Rs. Only)

GRN No. 42833211



Penalty : ₹ 0

(Rs. Zero Only)

Seller / First Party Detail

Name: Cocubes Technologies Pvt Ltd

H.No/Floor : 1205/1206

Sector/Ward : 48

LandMark : Welldone tech park

City/Village : Gurgaon

District : Gurgaon

State : Harayana

Phone: 000

Others : Cocubes technologies pvt ltd



Buyer / Second Party Detail

Name : Vignan Institute of management and Technology for women

H.No/Floor : 000

Sector/Ward : 000

LandMark : Hyderabad

City/Village: Hyderabad

District : Hyderabad

State : Telangana

Phone : 000

Others : Vignan institute of management and technology for women

Purpose : Service Agreement Between Cocubes technologies Pvt Ltd And Vignan Institute Of Management And Technology For Women

The authenticity of this document can be verified by scanning this QrCode Through smart phone or on the website <https://egrashry.nic.in>



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajiri(Dt)-501301
Telangana State



SERVICE AGREEMENT

This Agreement is entered into as of **4th October, 2018** at New Delhi ("**Agreement**").

BY and BETWEEN

CoCubes Technologies Pvt. Ltd., an Aon Hewitt company, registered under the Indian Companies Act 1956, having its principal place of business at 1205-1206 A/B/C Welldone Tech Park, Sector 48, Sohna Road, Gurgaon 122002 (hereinafter referred to as "**Cocubes**" which expression shall, unless repugnant to the context thereof, mean and include its affiliates, successors and assigns);

and

Vignan's Institute of Management and Technology for Women, having its registered office/ principal place of business situated at **Dullapally, Hyderabad** (hereinafter referred to as "**the Institute**", which expression shall, unless repugnant to the context thereof, mean and include its successors and permitted assigns).

CoCubes and the Institute are hereinafter referred together as "the Parties" and each individually "a Party".

WHEREAS

1. CoCubes are engaged in the business of providing online career development services to educational institutes and its enrolled students. As part of this business, CoCubes has developed a proprietary technology platform to automate the process of engaging students. This platform enables CoCubes to connect companies, who wish to engage students, directly with the Institutes. The platform also provides guidance to the students in preparing them for employability with corporates and better career prospects
2. The Institute is a certified educational institute providing higher education facility to students in India
3. The Institute desires to engage CoCubes to provide their online career development services ("Services") and CoCubes has agreed to provide its Services to the Institute subject to the terms and conditions set out in this agreement.

NOW THIS AGREEMENT WITNESSES:

1. Definitions

- 1.1. "**Agreement**" shall mean this Agreement along with all its exhibits, schedules and annexes
- 1.2. "**CoCubes Online Platform (Platform)**" shall mean the proprietary technology platform developed by CoCubes and available at the website www.cocubes.com, on and through which the services are rendered.
- 1.3. "**Force Majeure**" shall mean and include circumstances, including acts of God, floods, riots or civil unrest, war or threat of war, acts of terrorism, or other hostilities, pandemics, governmental, legislative or regulatory authority actions, strikes, lockouts, or labor difficulties initiated by its subcontractor's employees, loss of facilities, telephone system and other utility, technological outages, equipment malfunctions or technical breakdowns, and similar occurrences beyond CoCubes' reasonable control.
- 1.4. "**Intellectual Property (IP)**" means all algorithms, apparatus, components, circuit designs and assemblies, concepts, confidential or proprietary information, trade secrets, data (including clinical data), databases and data collections, designs, diagrams, documentation, drawings, flow charts, formulas, ideas, inventions (whether or not patentable or reduced to practice), marks (including brand and product names, logos, slogans, domain names), know-how, marketing and development plans, methods, models, procedures, processes, protocols, schematics, software codes (in any form including source code and executable or object code), specifications, subroutines, techniques, tools, user interfaces, websites, works of authorship and other forms of technology.
- 1.5. "**Intellectual Property Rights (IPR)**" means all patents, any extensions of the exclusivity granted in connection with patents, patents pending, utility models, registered designs, trademarks, service

marks, applications for any of the foregoing (including continuations, continuations-in-part and divisional applications), the right to apply for any of the foregoing, rights in trade names, business names, brand names, get up, logos, domain names and URLs, copyright, design, rights, moral rights, database rights, publication rights, all rights in and to the IP having equivalent or similar effect to any of the foregoing rights, which may exist anywhere in the world.

- 1.6. **"Services"** means the services to be performed or actually performed by CoCubes under this Agreement, as specified in a mutually agreed Statement of Work ("SOW"), which may be executed by the Parties from time to time and attached hereto as **Schedule A**. Each such SOW executed pursuant to this Agreement shall be numbered sequentially (e.g. Schedule A-1, A-2,) for purposes of identification and control.
- 1.7. **"Students"** shall mean students studying at the Institute, who have consented to their enrolment to avail the Services and who will be provided access to the Platform.
- 1.8. **"Terms and Conditions"** shall mean the website terms of use, on the basis of which the Platform can be accessed and used at https://static.cocubes.com/document/reg_tc.html.

2. Provision of Services

- 2.1. The Institute hereby appoints CoCubes to provide to it the Services specified in this Agreement and more fully in the SOW annexed herewith as Schedule A and CoCubes agrees to provide the Services to the Institute
- 2.2. CoCubes shall provide the following Services to the Institute for the duration of the term as specified in the given SOW:
 - i. CoCubes shall provide access to the Platform to the Institute and the Students
 - ii. CoCubes shall provide a separate log-in and password to each Student and the Institute's placement officer(s)
 - iii. CoCubes shall provide SMS enabled communication tools to the Institute to enable interaction with students. This has limited use. Please refer to the SOW to understand the limitations of this feature.
 - iv. CoCubes shall provide such additional and relate services as more fully detailed in the SOW. Any change in the SOW will be agreed to by the Parties in writing.
- 2.3. The Institute understands and acknowledges that the use of the Platform shall be subject to its Terms and Conditions, which shall prevail in all matters related to access and use of the Platform. This is available at https://static.cocubes.com/document/reg_tc.html.
- 2.4. CoCubes reserves the right to suspend performance of the Services or any part thereof or terminate this Agreement or any SOW, if the Institute fails to pay any fees and expenses when due.

3. The Institute's responsibilities and obligations

- 3.1. The Institute will enroll the below number of students during the Term of the Agreement. The Institute shall undertake all acts as may be necessary, including but not limited to obtaining the Student's explicit consent to availing CoCubes' Services. CoCubes shall not be required to obtain the Student's consent separately

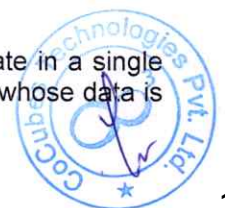
No. of students	Batch	Degree
175	2019	B. Tech

- 3.2. All data relating to the Students shall be provided by the Institute to CoCubes in a predefined format provided by CoCubes. All Student data shall be authenticated by the Institute and thereafter provided to CoCubes. The Institute shall indemnify CoCubes in the event of any claim or demand raised against CoCubes on account of any Student data which is found to be inaccurate, false or misleading and as a consequence of which CoCubes suffers any loss.

The Institute shall provide Student data to CoCubes immediately from the Effective Date in a single file. CoCubes shall not be responsible for any loss or opportunity for those Students whose data is



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incomplete. This may also result in CoCubes not being able to provide its services to the Institute to the best of its abilities, for which CoCubes will not be responsible. In the event the Institute is unable to provide the Student data within the specified time period, CoCubes will not be responsible for making the Student data available through the Platform for the Student's career development.

- 3.4. The Institute agrees that its and the Students' use of the Services and that of the Platform will, in addition to the terms set out in this Agreement, be in compliance with the Terms and Conditions available on https://static.cocubes.com/document/reg_tc.html.

4. Fees and Expenses

4.1. Fees

Subject to the terms and conditions of this Agreement, the Institute will pay CoCubes the fees ("Fees") as set out in the SOW as CoCubes' compensation for the Services provided by CoCubes under this Agreement. It has to be noted that the fees charged by CoCubes is towards the annual subscription of the technology for career development and assessment offerings; the fee is not towards creating employment opportunity of any specific company. As a principal and business model, CoCubes does not charge fee in the name of any specific company.

4.2. Expenses

Unless expressly provided otherwise in the Agreement or any SOW hereunder, CoCubes will be solely responsible for all expenses incurred by CoCubes or any of its employees or agents in connection with the performing of the Services or otherwise performing its obligations under this Agreement or any SOW ("Expenses").

Notwithstanding the above, the Institute shall pay all reasonable pre-approved travel and related living expenses incurred by CoCubes' personnel in performing Services for the Institute.

4.3. Invoicing

- i. CoCubes shall raise one invoice per batch on the date of signing of the Agreement ("Effective Date"), provided the Institute shares the database immediately. Else the invoice will be raised on the day CoCubes receives the data and the Effective Date will be the date the invoice is raised. For other details on invoicing, refer to the SOW.
- ii. CoCubes's fees for Services is exclusive of all applicable indirect taxes, levies, duties, cesses and surcharges that are applicable now or that may hereafter be imposed on Aon's rendering of the Services or the Client's use of the Services. Any indirect tax will be charged and recovered over and above the CoCubes's fees for Services. Pursuant to the introduction of GST, in the event of any subsequent amendments, the parties would discuss and agree upon an approach which would allow for optimization of the taxes applicable under the Agreement

5. Service Provider Representations, Warranties and Disclaimers

5.1. Service Warranties

CoCubes represents and warrants that, during its provision of Services under a SOW and continuing through the 30-day period following completion of provision of the Services covered by a particular SOW (the "**Warranty Period**"):

- i. Services will conform to the specifications set forth in the SOW;
- ii. CoCubes will perform the Services in a professional manner conforming to generally accepted industry standards.
- iii. CoCubes has the requisite skill, experience and expertise to perform the Services
- iv. CoCubes has skilled, qualified and experienced personnel at its disposal to provide the Services

5.2. Client's Exclusive Remedies for Breach of Service Warranty

On any breach by CoCubes of any of the warranties set forth above in Section 5.1, during the Warranty Period, CoCubes' sole liability, and the Institute's sole remedies therefore, will be for CoCubes to render additional Services to remedy any and all such breaches or deficiencies provided always that any expenses related to facilitate prework shall be borne by CoCubes.

5.3. General Warranties

CoCubes represents and warrants to the Institute that:

- i. This Agreement has been validly executed and delivered by CoCubes and that this Agreement constitutes the legal, valid and binding obligation of CoCubes enforceable against CoCubes in accordance with its terms thereof;
- ii. CoCubes has all requisite corporate power, authority, rights, licenses and permits required to enter into this Agreement and to perform and fulfill its obligations under this Agreement,
- iii. CoCubes will comply at all times with all applicable laws, rules and regulations;
- iv. The Services will not infringe the copyrights, trademarks, patents, trade secrets or other intellectual property rights, privacy or similar rights of any person or entity.

5.4. CoCubes Services shall be provided to the Institute on a nonexclusive basis

5.5. CoCubes shall have no right or authority to make any promise, representation or warranty for or on behalf of the Institute or to enter into any agreement or otherwise bind the Institute in any manner whatsoever or to hold out as the Institute agent, without the Institute's prior written approval.

5.6. The Institute agrees and acknowledges that CoCubes does not conduct any background checks on the Students who have access to the Platform. CoCubes also does not verify the contents of their resume/curriculum vitae and hence does not warrant the authenticity of any Student data and information displayed on the Platform. All student related information provided to CoCubes by the Institute will be authenticated by the Institute. CoCubes shall not be held liable for inaccuracy or incorrectness of any Student information.

5.7. The Institute and CoCubes agree and understand that the Student data is the nonexclusive property of the Institute and CoCubes. CoCubes shall use the Student data provided by the Institute for displaying it on the Platform for online career development activities, which are a part of the Services provided by CoCubes to the Institute.

5.8. EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, COCUBES DOES NOT MAKE ANY WARRANTIES, GUARANTEES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED IN RELATION TO THE SERVICES, INCLUDING WITH LIMITATION, ANY IMPLIED WARRANTY OF FITNESS OF THE SERVICES FOR A PARTICULAR PURPOSE.

6. Intellectual Property rights

6.1. "Institute Information" is defined as all non-public information, data, and materials (in whatever form or media) provided to CoCubes under this Agreement by or on behalf of the Institute. The Institute represents that the use of Institute Information contemplated in this Agreement will not infringe the privacy and/ or intellectual property rights of any third party and that the Institute has obtained all consents or authorizations of any such third party necessary for such use of Institute Information. Institute Information will remain the property of the Institute

6.2. "CoCubes Information" includes, but is not limited to: the CoCubes Online Platform and all rights, title, interest therein, software systems, user interfaces and screen designs; general purpose consulting and software tools; websites or web based applications through which it may perform the Services and make related information and/or other content available to the Institute including software used in the operation of the website; presentations including CoCubes' templates, standard proposals and materials and derivatives thereof; all other data, information, or material residing on its computer servers, documentation, generalized practices, techniques, business processes, know-how and proprietary information, regardless of whether developed in connection with the Services or engagements with other CoCubes clients.

6.3. Nothing in this Agreement shall be construed to grant the Institute any rights in the Services or CoCubes Information, other than the right to use the Platform for access to the Services in the manner specified in this Agreement.

6.4. The parties agree that while the Student data, accumulated by CoCubes in the course of the provision of Services, belongs to the individual Student who turn authorizes the Institute to share it with a third party towards improving the Student's chances of employability, the analysis

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generated from such Student data so accumulated belongs to CoCubes. CoCubes shall have the right to permit its clients to use the processed Student data as part of the CoCubes service offerings to its clients.

- 6.5. The Institute will not (i) create derivative works based on or translate the CoCubes Information, (ii) sell, assign, distribute, lease, market, rent, sublicense, transfer, or otherwise grant rights to the CoCubes Information in whole or in part to any third party; (iii) obfuscate, remove or alter any of the internet links or copyright or other proprietary legends that are in the CoCubes Information or that are displayed on pages served by the CoCubes Information, (iv) reverse engineer, decompile or disassemble CoCubes Software or any part thereof or otherwise obtain or attempt to obtain the source code for CoCubes Software. CoCubes retains all right, title and interest in and to the CoCubes Information.
- 6.6. The Client acknowledges that CoCubes may be required to mention its indicative list of clients in its proposals, marketing materials, brochures and/ or similar documents and agrees that it has no objection to CoCubes making a reference to the Client's name and usage of logo in the aforesaid documents. Provided, however, that any usage of trademark or service mark (other than its name) by CoCubes in any such document shall be with the Client's prior written consent.

7. Confidentiality

- 7.1. The term "Confidential Information" shall mean any and all information or proprietary materials (in every form and media) not generally known in the relevant trade or industry and which has been or is hereafter disclosed or made available by one party (the "Disclosing Party") to the other party (the "Receiving Party") and/or its affiliates in connection with this Agreement, including but not limited to (i) the terms of this Agreement; (ii) Client Information; (iii) CoCubes Information; (iv) all trade secrets (v) existing or contemplated products, services, designs, technology, processes, technical data, engineering, techniques, methodologies and concepts and any information related thereto; (vi) information related to business plans, sales or marketing methods and customer lists or requirements. Any information disclosed (in whatever form) by the Disclosing Party to the Receiving Party in connection with this Agreement or for the performance of the Services, whether orally, visually or in documentary or electronic form shall be considered Confidential Information by the Receiving Party. The Receiving Party agrees to maintain the confidentiality of such Confidential Information during the term of this Agreement and for a period of three years from the date of expiry or termination of the Agreement until any part of the Confidential Information enters the public domain or such Confidential Information is destroyed/ returned to the Disclosing Party on written instruction. Each Party's respective Confidential Information will remain its sole and exclusive property.
- 7.2. The Receiving party will protect the Confidential Information from any unauthorized use, access or disclosure in the same manner as it protects its own confidential or proprietary information of a similar nature. The Receiving Party shall (i) disclose the other Party's Confidential Information to those of their employees who have a need to know the Confidential Information of the other Party (and in case of CoCubes, any affiliate or third party service provider providing back office/IT support), (ii) not disclose the other Party's Confidential Information to a third party without the prior written consent of the Disclosing Party, (iii) not use the Confidential Information for any purpose whatsoever except as expressly contemplated under this Agreement, except that CoCubes may use the Institute's Confidential Information in combination with other data for statistical or analytical purposes provided that no such Institute Confidential Information is identifiable by the Institute and either Party may disclose the other Party's Confidential Information to its legal counsel and auditors. CoCubes may also disclose the Institute's Confidential Information to any subcontractor in connection with this Agreement as reasonably necessary for such subcontractor or third party to perform its services, provided that any such subcontractor is subject to a confidentiality agreement. For the avoidance of doubt, CoCubes shall not be required to destroy electronic records which are automatically backed up to a backup or recovery system in the ordinary course of business for disaster recovery purposes. CoCubes will retain an archival copy of the Confidential Information for the purpose of determining the scope of obligations incurred under this Agreement.
- 7.3. The Receiving Party shall immediately notify the Disclosing Party of any suspected or actual unauthorized use, copying or disclosure of the Confidential Information
- 7.4. Confidential Information does not include information if and to the extent such information: (i) is or becomes generally available or known to the public through no fault of the receiving Party; (ii) was already known by or available to the Receiving Party prior to the disclosure by the Disclosing Party;

(iii) is subsequently disclosed to the Receiving Party by a third party who is not under any obligation of confidentiality to the Party who disclosed the information; (iv) has already been or is hereafter independently acquired or developed by the Receiving Party without violating any confidentiality agreement with or other obligation to the Disclosing Party; or (v) is required by law to be disclosed as part of a judicial process, government investigation, legal proceeding, or other similar process. If the Receiving Party is required to disclose the Confidential Information of the disclosing Party as part of a judicial process, government investigation, legal proceeding, or other similar process, (i) the Receiving Party will give prior written notice of such requirement to the Disclosing Party to allow the Disclosing Party to seek a protective order or other appropriate remedy (ii) Receiving Party shall disclose only such Confidential Information as is required by the governmental authority (iii) Receiving Party shall use commercially reasonable efforts to obtain confidential treatment for any Confidential Information so disclosed.

7.5. The parties shall comply at all times with any and all applicable laws relating to personal data protection and any and all legal conditions that must be satisfied in relation to the collection, transfer, processing, storage, and destruction of personal information. The Institute agrees that CoCubes may transfer these documents, physically or electronically, to its personnel and affiliates in India or overseas in connection with the performance of this Agreement.

8. Indemnification

- 8.1. Each Party agrees to indemnify the other Party for such claims, suits, losses, damages, costs, or liability (collectively "Liabilities") being suffered by the aggrieved Party as a direct consequence of breach of its confidentiality and intellectual property related obligations under this Agreement.
- 8.2. CoCubes agrees to indemnify the Institute from and against any Liabilities incurred by the Institute in the event of breach by CoCubes of any of its representations and warranties set out in Clauses 5.3, 5.4 and 5.5.
- 8.3. The Institute agrees to indemnify CoCubes from and against any Liability arising out of (i) misuse of the Platform by the Students or the Institute (ii) any Student related information provided to CoCubes being incorrect, false or misleading.

9. Non Solicitation

- 9.1. During the term of this Agreement and for twelve (12) months thereafter, the Institute will not directly or indirectly solicit, induce or attempt to induce any employee or independent contractor of CoCubes to terminate or breach any employment, contractual or other relationship with CoCubes

10. Limitation of Liability

In no event will CoCubes be liable for any consequential, indirect, exemplary, special, punitive or incidental damages arising from or relating to the Agreement. CoCubes' total cumulative liability in connection with this Agreement, whether in contract or tort or otherwise, will not exceed the aggregate amount of fees actually paid or owed by the Institute to CoCubes for services performed under this Agreement for the year immediately preceding the date on which such liability was incurred.

11. Independent Contractor

CoCubes' relationship with the Institute will be that of an independent contractor and nothing in this Agreement will be construed to create a partnership, joint venture, principal-agent or employer-employee relationship. CoCubes will (i) be solely responsible for payment of all compensation due to CoCubes employees and contractors in connection with this Agreement, (ii) file on a timely basis all tax returns and payments required to be filed or made to any federal, state or local tax authority with respect to CoCubes performance of Services and receipt of compensation by CoCubes and its employees and contractors hereunder and (iii) be responsible for providing, at its expense and in its name, disability, workers' compensation or other insurance as well as any and all licenses and permits necessary or usual for rendering the Services.

12. Term and Termination

- 12.1. This Agreement shall commence on (the "27th August 2018") and shall remain in effect for a period of One year ("Term"). The parties agree that all Students will continue to have access to the Platform pursuant to the termination of this Agreement. The parties may renew the Agreement for such further periods and on such terms as mutually agreed in writing. The above program (or any part of it) shall be delivered as mentioned in the Agreement irrespective of the Termination clause
- 12.2. This clause is purely for ease of Accounting of 'Service Revenue' at the end of CoCubes.com.

The scores achieved in the (sectional best of two or only) Pre-Assess of CoCubes.com will be valid for 12 months post the last date of conduct of Pre-Assess.

12.2. Either Party may terminate this Agreement or any SOW for convenience at any time upon thirty (30) days prior written notice to the other Party.

12.3. Either Party (in this Section the "**Affected Party**") may terminate this Agreement, or any SOW, for material breach upon thirty (30) days prior written notice ("**Cure Period**") to the other Party (the "**Party in default**"), if

- i. The Party in default fails to cure such breach, if it is curable in the opinion of the Affected Party, to the Affected Party's satisfaction, before expiration of the said Cure Period.
- ii. The other Party is likely to become or becomes insolvent or makes or attempts to make an assignment for the benefit of creditors or ceases or attempts to cease to do business or institutes or has instituted against it or allows any third party to institute against it, any proceedings for bankruptcy, reorganization, insolvency, or liquidation or other proceedings under any bankruptcy or other law for the relief of debtors; and does not terminate such proceedings within thirty (30) days.

12.4. Effects of Termination

- i. Termination of this Agreement or a SOW shall not affect the rights and obligations of the Parties, which had accrued prior to the effective date of termination.
- ii. Completion or termination of any SOW under this Agreement shall not constitute termination of this Agreement, it being the intent of both Parties to leave this Agreement in effect until terminated as specified herein. If the term of a SOW extends beyond the termination date of this Agreement, such SOW, unless expressly terminated, shall continue to be governed by the terms of this Agreement and each Party shall duly perform and fulfill its obligations under this Agreement in respect of such SOW.
- iii. Upon termination:
 - a) CoCubes will stop providing its Services to the Institute and its Students forthwith. All rights, liabilities and obligations of CoCubes as well as the Institute will come to an end immediately.
 - b) The Institute and its Students will not have access to the services listed in the SOW.
- iv. If the Institute terminates the Agreement for any reason whatsoever within a period of one (1) month from the Effective Date, CoCubes shall refund the Fees back to the Institute on a pro-rata basis for the remainder of the Term. In the event of termination of this Agreement after a period of one (1) month by the Institute for any reason whatsoever, CoCubes shall not be liable to refund the Fees back to the Institute.

13. Force Majeure

13.1. A Party shall not be liable to the other Party or be deemed to be in breach of this Agreement by reason of any delay in performing, or any failure to perform, any of that Party's obligations under this Agreement if the delay or failure was due to a Force Majeure Event, provided that such Party shall:

- i. Immediately serve on the other Party written notice thereof specifying the particulars of the Force Majeure Event, the extent to which such Party is unable to discharge or perform its obligations, the reasons for the inability of such Party to perform or discharge its obligations and estimated period during which such Party is unable to perform or discharge its obligations; and
- ii. Promptly take and continues to take all action within its powers to minimize the duration and effect of the Force Majeure Event on such party.

13.2. Provided, however, that if the Force Majeure Event/s continue(s) to subsist for a continuous period of 30 days, the other Party may terminate the Agreement by giving notice in writing.

14. General Provisions

14.1. Governing Law and Dispute Resolution


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- i. This Agreement will be governed by and construed in accordance with the laws of India. Each Party agrees to submit itself to the exclusive jurisdiction of the courts of New Delhi.
- ii. The Parties agree to meet and confer in good faith on all matters of common interest or all controversies, claims, or disputes ("Dispute") which materially affect the performance of either Party under this Agreement. As soon as a Dispute is identified by either Party, it will communicate the substance of such Dispute to the other Party and the Parties shall attempt to resolve the dispute in good faith by senior level negotiations. If the Dispute cannot be resolved between the Parties within two (2) weeks after the Dispute has been identified, then the Dispute shall be dealt with in accordance with Section 14 (iii) below.
- iii. All disputes in connection with or arising out of this Agreement shall be governed by the provisions under the Arbitration and Conciliation Act 1996 ("Act") for the time being in force. The Tribunal shall consist of a sole arbitrator, who shall be appointed by mutual consent of both the Parties within 10 days of the request first being raised by a Party. If no consent is arrived at within 10 days, the court shall appoint the arbitrator. The language of the arbitration shall be English. The seat of arbitration shall be New Delhi. The fees of arbitration will be borne by the Party as directed in the arbitration award.

14.2. Severability

Should any provision of this Agreement be held invalid or unenforceable, such invalidity will not invalidate the whole of this Agreement, but rather that invalid provision will be amended to achieve as nearly as possible the same economic effect as the original provision and the remainder of this Agreement will remain in full force

14.3. Assignment

Neither this Agreement nor any of the rights or obligations of either Party hereunder may be assigned or transferred without the other Party's prior written consent, which consent will not be unreasonably withheld.

Nothing set forth in the preceding sentence shall restrict either Party from assigning this Agreement or its rights or obligations to its affiliate/subsidiary or CoCubes subcontracting the whole or any part of the Services to any contractor of its choice, provided that such subcontracting shall not relieve CoCubes from its obligations to the Institute under this Agreement. The assignment of employees of CoCubes' Affiliates to perform the Services shall not be regarded as subcontracting. This Agreement will be binding upon and inure to the benefit of the Institute and CoCubes and their respective successors and assigns.

14.4. Publicity

The Client acknowledges that CoCubes may be required to mention its indicative list of clients in its proposals, marketing materials, brochures and/ or similar documents and agrees that it has no objection to making a reference to the Client's name in the aforesaid documents. Provided, however, that any usage of Client's logo, trademark or service mark (other than its name) by CoCubes in any such document shall be with the Client's prior written consent.

14.5. Notices

All notices and other communications required or permitted under this Agreement will be in writing and will be deemed effectively delivered upon receipt by personal delivery, overnight courier service, by certified or registered mail at the address listed on the 1st page of this Agreement or facsimile as confirmed by delivery and/ or transmission receipt or to a dedicated e-mail ID as set out herein. Any Party may change its particulars for such communications by giving a 15 business days' prior written notice to the other Party conforming to this Section.

14.6. Waiver

All waivers must be in writing and signed by the Party to be charged. Waiver or failure to enforce by either Party of the breach of any provision of this Agreement by the other Party will not operate or be construed as a waiver of any subsequent, similar or other breach by the breaching Party.

14.7. No Third Party Beneficiary

Save as expressly provided herein, this Agreement is made and entered into for the sole protection and benefit of the Parties to this Agreement and is not intended to convey any rights or benefits to any third party, nor will this Agreement be interpreted to convey any rights or benefits to any person except the Parties to this Agreement.

14.8. Compliance with Laws

This Agreement and the performance of this Agreement is subject to all present and future applicable laws, rules, orders, statutes and regulations of governmental authorities having jurisdiction over the Parties, the deliverables or the Services. Both Parties will comply with all applicable laws, rules, orders, statutes, and regulations, including any applicable trade restrictions.



[Handwritten Signature]
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14.9. Entire Agreement

This Agreement, together with the SOWs issued hereunder (i) embodies the final, complete and exclusive understanding between the Parties with respect to its subject matter; (ii) replaces and supersedes all previous oral or written agreements, understandings or arrangements between the Parties; (iii) may be signed in counterparts, each of which will be an original and all of which will constitute one and the same document; and (iv) may only be amended in a writing signed by an authorized officer of each Party hereto. The Parties acknowledge and agree that any pre-printed terms on any transactional or other document used in connection herewith are per se null and void and of no force or effect.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

(Institute)
Authorized signatory
By:
Name:
Title:

CoCubes Technologies Pvt. Ltd
Authorized signatory
By:
Name:
Title:



2/2/20
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Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

Schedule A-1

Institute: Vignan's Institute of Management and Technology for Women

Statement of Work No.:

Dated: 4th October, 2018

THIS STATEMENT OF WORK ("SOW") is executed pursuant to the Service Agreement **4th October, 2018** ("Agreement") entered into between the Institute and **CoCubes Technologies Pvt. Ltd, an Aon Hewitt company**, ("CoCubes") for the performance of the Services by CoCubes to the Institute in accordance with and subject to the terms and conditions set forth in the Agreement and herein below.

In the event of a conflict with any Purchase Order issued by the Institute based on this SOW, the terms of the Agreement and SOW shall prevail.

This SOW shall commence on **4th October, 2018** (the "Effective Date") and shall remain in effect for a period of One Year ("Term"), unless terminated earlier in accordance with the provisions of the Agreement.

Part A – Services

1. CoCubes Online Platform ("Platform")

- a.) CoCubes will provide the Institute, its career development cell and Students access to the Platform by providing Log-in/password unique to every individual, with different features and permissions to ensure data security, authentication and transparency in academic marks, assessments and placement related data. Individual Log-in/password are provided for the Institute administrator (multiple log-ins possible with one administrator log-in) and for students in 3rd and 4th years. However, no individual log-ins are provided to 1st and 2nd year students. Assessments for 1st and 2nd year will be conducted via a standalone assessment engine.
- b.) Web enabled platform to manage internal placements and student data.
- c.) Online platform shall generate placement statistics for placements for the institute.
- d.) SMS feature on the platform can be used for:
 - i. Internal job post related student SMSes i.e. SMS generated when a job post created is operational
 - ii. Communication to eligible/applied/offered/declined/no-response students
 - iii. Communication module (custom or standard groups) is available
 - iv. Every Institute will be given 1000 SMSes on registration. Additional SMSes can be purchased @INR 35 paise per SMS
- e.) Key features and Benefits
 - i. Data Security – 7 level data security
 - ii. Cloud based tool – access from anywhere. Authentic data (marks, branch, Institute, degrees), track assessments and placement related data
 - iii. Bring transparency in the system with respect to education marks, degrees, etc.
 - iv. Send communication – email, notifications, SMS to students and Institutes
- f.) [insert case study]

2. Pre-Assess – Career development for Students

- a.) This is a standard Assessment recognised by Industry. Several companies use sectional and total scores achieved in this as a parameter in their recruitment process. [A sample list is available below]. This offering helps increase corporate opportunities available for the students in the final year. [A snapshot of the report generated post the Pre-Assess is also given below].
- b.) Pre-Assess Process Guidelines
 - i. Pre-Assess is a 3 hour extensive exam with 7 different sections
 - ii. In order to generate a report and be applicable to even one job, it is mandatory to give the aptitude and psychometric test. If this is not done, no report will be generated and the said student will not be able to apply for any company.
 - iii. Syllabus of the Pre-Assess is available
 - iv. Pre-Assess is conducted on a day/date convenient to the Institute, barring Monday
 - v. List of students with slots for each must be shared a minimum of 7 days before the Pre-Assess is scheduled. Failure to do so may result in poor experience of the Institute and students. If this list is not shared 4 days before the scheduled Pre-Assess, CoCubes can cancel the Pre-Assess and the Institute (and every registered student in the Institute) will lose one Pre-Assess.



- vi. If any Student, whose slot has been shared by the Institute at D-4, fails to appear in the given slot on the said day, that Student will lose one Pre-Assess from the count of Pre-Assess allocated to the Institute.
- vii. Pre-Assess is invigilated by the CoCubes team
- viii. The Pre-Assess is conducted at the Institute premises only if the Institute registers more than 200 students.
- ix. It is strongly recommended that the Institute conduct 2 slots while conducting the Pre-Assess on any given day.
- x. Pre-Assess may be needed to split over 2 or more days to ensure every registered student in the batch is able to take the same. The 2 or more days should be within the 7 day period.
- xi. Scores of Pre-Assess are valid for a period of 12 months following the last date of Pre-Assess.
- xii. Different sections are important for different job profiles. Hence, it is recommended that the students prepare and give all the sections in Pre-Assess.
- xiii. Applying on a job via the Pre-Assess and then being shortlisted for interviews, requires the students to go for the interview. If the student fails to go for the interview without prior intimation of the same (at least 3 days before the date of the interview) it will lead to the individual student log-in being disabled for the period of one month.
- xiv. Report of the Pre-Assess will be generated within 7 business days of the conduct of the Pre-Assess
- xv. If the 2nd Pre-Assess is applicable:
 - There must be a minimum gap of 6 months between the 1st and 2nd Pre-Assess
 - Sectional best of the two Pre-Assess scores will be the final score of the student
 - 2nd Pre-Assess will be conducted on a date/time as determined by CoCubes

3. Continuous Evaluation Program – Employability Enhancement of Students

- a.) CoCubes has scientifically developed this program. This is intended to periodically measure the employability and progress of the students at the Institute based on Industry standard parameters, thus giving the Institute an insight into critical gaps in development.
- b.) **Diagnostic Assessments (career test scheduling, reports and process)**
 - i. Diagnostic career tests for final year students will be conducted at days determined by the Institute. Each student will be able to give a maximum of 8 career tests. Each of these 8 tests will be collectively scheduled for an Institute.
 - ii. Syllabus and precise process of the assessments will be shared with the Institute one week in advance before the designated assessment.
 - iii. Individual student reports are emailed to the student within 7 business days of the completion of the test
 - iv. Reports at the Institute/degree/branch/student will be shared within 14 business days of the completion of the designated assessment
 - v. On the day of the Diagnostic career test, a PASSKEY will be sent to the Institute who will administer the test preferably at the Institute.
- c.) **Continuous Evaluation Assessments** for [insert batch number(s)] Process
 - i. Institute to share database and training schedule
 - ii. Institute to (in conjunction with CoCubes) determine dates (for a semester) for the assessments for the 1st, 2nd, and 3rd year
 - iii. Assessments to be executed as per schedule
 - iv. Domain tests to be done twice (4 units wise) for these batches – wherever such assessments are applicable
 - v. Employability aptitude tests to be executed once every semester for these batches




PRINCIPAL
 Vignan's Institute of Management & Technology For Women
 Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DI)-501301
 Telangana State



Part B - Fees

Offering	Degree	Batch	Count of Students	Price/student
7 DCT+ 2 PRE-ASSESS®	B. Tech	2019	175	INR 932.20

* The above prices are exclusive of all taxes and duties which would be payable, as applicable. Pursuant to the introduction of GST, in the event of any subsequent amendments, the parties would discuss and agree upon an approach which would allow for optimization of the taxes applicable under the Agreement.

1. Payment Terms

- All payments are to be made 100% in advance
- Payments become due immediately from the date of invoice and shall be made to CoCubes within 30 days from date of receipt of invoice without any deduction or set-off.
- CoCubes will also charge 35 paise per SMS (if the number of SMSes exceed the limit provided upon sign up)
- If the Institute fails to make the payment, assuming the log-ins of the student and/or Institute are active, the Platform will auto lock all the log-ins provided to (all across batches) the Students and the Institute. This may lead to loss of opportunities for Students for which CoCubes will not be responsible.

2. Disclaimers

- It has to be noted that the fees charged by CoCubes is towards the annual subscription of the technology for career development offerings; the fee is not towards creating employment opportunity of any specific company. As a principle and business model, CoCubes does not charge fee in the name of any specific company.
- This price is applicable for [insert batch number(s)] only
- Updates in count of Students, Services, prices and Terms for further batches need to be mutually agreed upon in writing

3. Institute Details

- Name of the Entity:** Vignan's Institute of Management and Technology for Women
- Invoice Address:** Dist, Ghatkesar, Kondapur, Telangana 501301
- Name of Contact Person:** Ms. Vinutha Kandukuri
- Contact Tel. no. and email Id:** 8106876564/tpo.vmtw@gmail.com
- GST details:**
 - GST Registration Number/ UIN :
 - Name of Entity as registered with GSTN
 - Registered Address
 - Date of Registration

4. CoCubes details

- Name of Contact Person:** Mr. Srikanth Reddy
- Contact Email Id :** srikanth.reddy@cocubes.com

IN WITNESS WHEREOF, the Parties have executed this SOW as of the Effective Date.

(Institute)
Authorised signatory
By:
Name:
Title:



CoCubes Technologies Pvt. Ltd
Authorised signatory
By:
Name:
Title:



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Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajiri(Dt)-501301
Telangana State

MEMORANDUM OF UNDERSTANDING (MoU)

BETWEEN

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

AND

TAG IT CONSULTING

This Memorandum of Understanding (hereinafter called as the 'MoU') is entered into on this the 3rd day of October 2018 by and between.

Vignan's Institute of Management and Technology for Women, the First Party signified herein by its Principal / Director / Head of Institution Vignan's Institute of Management and Technology for Women, And TAG IT Consulting. The Second party, and signified herein by its Centre Head / Director.

WHEREAS:

A) First Party is a Higher Educational Institution named: Vignan's Institute of Management and Technology for Women

B) First Party & Second Party believe that assistance and co-operation between themselves will encourage more effective use of each of their resources, and provide each of them with enhanced opportunities.

C) The Parties committed to collaborate and focus their efforts on cooperation within area of Skill Based Training, Education, Placement, Industrial Visit, Expert Lecture.

D) TAG IT Consulting, - the Second Party is engaged in **Industrial Training & Internships.**

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MOU, THE PARTIES HERETO AGREE AS FOLLOWS:

CLAUSE 1: CO-OPERATION

1.1 Both Parties are combined by common interests and objectives, and they shall begin co-operation.

1.2 First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities

1.3 The parties shall co-operate with each other and shall as promptly as is maturely practical, relevant agreements




PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajiri (Dt)-501301
Telangana State

www.tagitconsulting.com

#401, Sai Sahasra Enclave, Shilpa Hills, Road No 2, HITEX, Izzathnagar, Hyderabad, Telangana-500084.

040 - 48571079, 040 - 48571780

CLAUSE 2: SCOPE OF THE MoU

2.1 Industrial Training & Visits: Industry and Institution communication will provide an insight into the latest developments / requirements of the industries; the Second Party to authority the Faculty and Students of the First Party to visit its group. Companies and also include in Industrial Training Programs for the First Party. This will provide confidence & smooth transition for students work. Also the Second party may register on the AICTE Internship Portal for the benefit of students.

2.2 Guest Lectures: Second Party to extend the necessary support to deliver guest lecturers to the students of the First Party on the technology trends and in house requirements.

2.3 Placement of trained students: second party will actively participate to help the delivery of the training and placement of the students of the first party on the technology trends and in house requirements.

2.4 There is no financial commitment on the part of the Vignan's Institute of Management and Technology for Women, the first party to take up any program mention in MoU. If there is any financial consideration, it will be dealt separately.

2.5 Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required.

CLAUSE 3: VALIDITY

3.1 This Agreement will be valid until it is expressly terminated by either Party on mutually agreed terms, during which period, the Second Part.

CLAUSE 4: RELATIONSHIP BETWEEN THE PARTIES

4.1 It is expressly agreed that First Party and Second Party are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership.

P. Sreedhakar

Authorized Signatory

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt),
Vignan's Institute of Management and Technology
for Women, Telangana State



For TAG IT Consulting And Technology Pvt.Ltd.

Authorized Signatory

TAG IT CONSULTING Director

Adh

PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt),
Telangana State

www.tagitconsulting.com



BRAIN O VISION

MEMORANDUM OF UNDERSTANDING (MOU)

This Memorandum of Understanding is made and executed at Hyderabad on the 5th SEP, 2018. This MOU signifies a statement of intent to collaborate

M/s.to **BRAIN O VISION SOLUTIONS INDIA PVT. LTD** , having corporate office address Mohan's Elite , Opp to Bharat Petrol Pump, Cyber towers to JNTU Road (Smile Dental), Madhapur, Hyderabad, Telangana 500073– represented by Mr. D.Ganesh Nagu , aged 30 years,, Hyderabad-500 079 .
M/s.BRAIN O VISION SOLUTIONS INDIA PVT.Ltd., a leading software & technology training company for the purpose of enriching the technical education process and to jointly work for enhancing the quality of education imparted to students discipline herein after called the **FIRST PARTY**

AND

Vignan's Institute of Management and Technology for Women located at near Ghatkesar, Kondapur, **Telangana 500301**

, **India** is approved by AICTE, New Delhi and Govt. of T.G. & affiliated to JNTU, Hyderabad
SECOND PARTY.

Terms & Conditions:

1. Nature of Relationship

This MOU is for collaboration between both parties, for mutual benefit, for many purposes set out in Annexure – I to enhance the quality of the educational experience for , B.Tech 3rd year & B.Tech CSE/IT students of the college.

This MOU shall be valid till the tenure of Android Workshop and each party shall be at full liberty to terminate the collaboration with a notice period of 1 month.

Total No of Students 392




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (M), Ghatkesar (M), Medchal-Malkajgiri (DT)-500301, Telangana State

Brain O Vision Solutions Pvt. Ltd.

+91 95029 35039

Info.brainovision@gmail.com

www.brainovision.in

Mohan's Elite, 1st Floor, H.No:2-56/5/50, Madhapur, Khanamet, Hyd - 500 081.

www.fb.com/brainovisionsolutions



BRAIN O VISION

Both parties shall take all reasonable steps to ensure successful completion of the collaboration and cooperate with each other in fully carrying out the obligation agreed upon.

ANNEXURE – I

PURPOSE/SCOPE OF THE COLLABORATION:

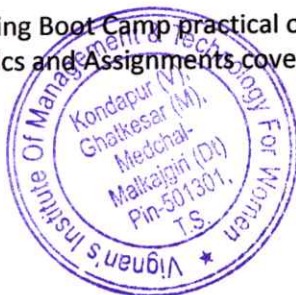
1. M/s. to BRAIN O VISION SOLUTIONS INDIA PVT.LTD ,will undertake HTML & CSS CODING Boot Camp for B tech 2nd and 3rd year students of CSE/ECE and carry out the Technology Training under the joint guidance of COLLEGE and for students in HTML & CSS
2. College will extend the services of their library, laboratories and workshop facilities for joint research, training and development on HTML & CSS.

Payment Terms:

Training services of BRAIN O VISION would be compensated under these terms and conditions:

- a. Training charges would be calculated on per student basis which is Rs. 300/- (Rupees Three hundred rupees only).(Exclusive of 18% GST)
- b. Payment to BRAIN O VISION SOLUTIONS INDIA PVT.LTD . Will be paid through Cheque/BankTransfer
- c. 50% of the fee amount to be paid after the MOU is signed, and another 50% will be given once Completed the training program.
- d. Completion of the training program is assured with the following guidelines:
 1. Completion of project
 2. Fulfillment of the condition laid by HOD/Principal

- a. Coding Boot Camp practical oriented
- b. Topics and Assignments covered in the course



+91 95029 35039

Info.brainovision@gmail.com

www.brainovision.in

Brain O Vision Solutions Pvt. Ltd.

Mohan's Elite, 1st Floor, H.No:2-56/5/36, Madhup, Ghatkhesar (M), Medchal-Malkajgiri (Dt)-501301, Kondapur (V), Vignana State, Telangana State - 500 081.

www.fb.com/brainvisionsolutions



BRAIN O VISION

D. GANESH NAGU,
Founder

ForM/s to BRAIN O VISION SOLUTION'S (IND) PVT. LTD

Mohan's Elite , Opp to Bharat Petrol Pump,

Cyber towers to JNTU Road (Smile Dental)

Madhapur, Kahanamet, Madhapur ,Hyderabad.

DR.Sudhakar
Principal

Vignan's Institute of Management

and Technology for Women,

Ghatkesar, Kondapur, **Telangana**



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www.brainovision.in

Brain O Vision Solutions Pvt. Ltd...

Mohan's Elite, 1st Floor, H.No: 2-56/5/50, Madhapur, Khanampet, Hyd - 500 081.

www.fb.com/brainovisionsolutions

Service Level Agreement (SLA)

The Service Level Agreement (SLA) is entered into on 24th 2018 between Vignan Institute Of Management and Technology for womens and Focus Academy for Career Enhancement (FACE), No.12, Lakshmi Nagar, Thottipalayam Pirivu, Avinashi Road, Coimbatore - 641014.

Vignan Institute Of Management and Technology for women's is represented by principal and FACE is represented by Satish Ayathu, Regional Manager – Andhra Pradesh & Telangana Vignan Institute Of Management and Technology for women's and FACE decided to lay down the terms and conditions of the SLA with the following clauses. The terms and conditions are not limited to the following but new terms shall only be added with mutual consent of both the parties.

Disputes if any are subject to jurisdiction of Coimbatore courts only.

For Vignan Institute Of Management and Technology for women's For FACE



principal
PRINCIPAL




Regional Manager



Vignan Institute of Management and Technology for Women
Kondapur Village, Ghatkesar Mandal,
Bangalore Reddy District 501301


PRINCIPAL

Vignan's Institute of Management & Technology For Women.
Kondapur (M), Ghatkesar (M), Malkajgiri (Dt)-501301
Telangana State

Section 1 – Program and batch details

Full Name of College	Vignan Institute of Management and Technology for Women
Program Name	Campus Placement Cracker™ - 60 Hours, Konfident - 16 Hours , Communique - 14 Hours
Program Duration (in Hours) per student	90 Hours
No of hours per student per week	3 Hours per student per week
Degree and Passing out year of students to be trained	B.E/ B.Tech, 2020 Pass-out Students
Training Days in the week	Every Week Thursday and Friday
Training Dates, please specify month-wise AFTER checking the academic calendar	Sep 12,14,20,21,27,28 2018 October 4,5,11,12 2018 Remaining Dates will be intimated shortly
Semester of Study of students to be trained, please specify month-wise	Aug, Sep, Oct, Nov 2018 - 5 th Semester Dec 2018, Jan, Feb, Mar, Apr 2019- 6 th Semester
Total No of students attending the training (as per attached Batch-List)	200 Students
No of batches	4 batches Day 1(Thursday)- 2 Batches (CSE A and B) Day 2 (Friday) - 2 Batches (ECE A and B)
Session Timings	9 to 11 AM; 11.15 to 1.15 PM; 2 to 4 PM

IMPORTANT:

- Last minute changes in training dates will not be accommodated. Hence FACE recommends that the college should double-check and ensure that none of these fall during the training dates: 1. No Local / State / National holidays. 2. No Internal tests / examinations. 3. No college functions. (Ex: Sports day, Annual day) 4. No guest lecturers / special programs. 5. No placement / recruitment process
- Any request for change in training dates needs to be communicated to FACE at-least 7 working days in advance
- Even if communicated 7 working days in advance, FACE is not automatically liable to deliver the service on the revised dates. FACE will re-confirm the possibility of service delivery based on availability of trainers, ease of trainer travel and accommodation and other constraints
- Once the SLA is signed, our Account Manager (AM) from FACE Office will be in touch with you to plan finer details of logistics.

DECLARATION: I have read and understood **Section 1 – Program and batch details** and I agree to the same.

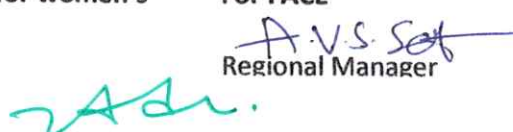
For Vignan Institute Of Management and Technology for women's

For FACE

principal

Regional Manager


PRINCIPAL


Regional Manager

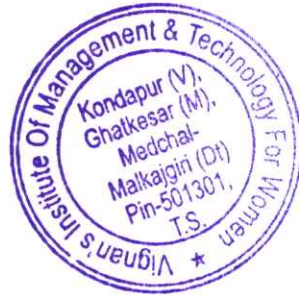
Vignan Institute of Management and Technology for Women
Kondapur Village, Ghatkesar Mandal,
Medchal-Malkajgiri District, Telangana State


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Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

Section 2 – Agreed Pricing & Advance Payable – Terms & Conditions

Agreed Pricing

Price Per Batch Per Hour	Rs. 1208.33
GST @ 18.0%	= Rs. 1208.33 * 0.18 = Rs. 217.5
Price Per Batch Per Hour - Inclusive of GST	= Rs. 1208.33 + 217.5 = Rs. 1,425.833
Total Duration of Training Program (in Hours)	90 Hours
No of students for whom materials will be sent (as per attached batch-list)	200 Students (4 Batches)
Total Contract Value	= 4 * 90 * 1,425.833 = Rs. 5,13,300. 4 - No of Batches 90 - No of Hours Per Batch Rs. 1,425.833- Price per batch per hour
Invoice Amount Calculation Methodology	All registered students whose names are mentioned in the attached batch-list are allowed to attend the FACE classes. If there is any change in the number of students between semesters, this needs to be intimated to FACE at the start of the new semester



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Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Advance Payable

Advance Amount Payable	NA										
Last date for payment of advance amount (failing which the service delivery will not commence)	NA										
Mode of Payment	By Cheque or DD, favoring " Focus 4-D Career Education Pvt. Ltd. " Payable at Coimbatore OR										
	By NEFT/ RTGS Transfer to:										
	<table border="1"> <tr> <td>Account Holder Name</td> <td>Focus 4-D Career Education Pvt. Ltd.</td> </tr> <tr> <td>Account No</td> <td>053109000142765</td> </tr> <tr> <td>Bank Name</td> <td>City Union Bank</td> </tr> <tr> <td>Branch Name</td> <td>Vilankurichi Branch</td> </tr> <tr> <td>IFSC Code</td> <td>CIUB0000053</td> </tr> </table>	Account Holder Name	Focus 4-D Career Education Pvt. Ltd.	Account No	053109000142765	Bank Name	City Union Bank	Branch Name	Vilankurichi Branch	IFSC Code	CIUB0000053
	Account Holder Name	Focus 4-D Career Education Pvt. Ltd.									
	Account No	053109000142765									
	Bank Name	City Union Bank									
Branch Name	Vilankurichi Branch										
IFSC Code	CIUB0000053										
NOTE: Cash payments will not be accepted											

DECLARATION: I have read and understood **Section 2 – Agreed Pricing & Advance Payable – Terms & Conditions** and I agree to the same.



[Handwritten Signature]
PRINCIPAL
 Vignans Institute of Management & Technology For Women
 Kondapur(V),Ghatkesar(M),Medchal-Malkajiri(Dt)-501301
 Telangana State

For Vignan Institute Of Management and Technology for women's

For FACE

principal

[Handwritten Signature]
Regional Manager

PRINCIPAL

Vignans Institute of Management and Technology for Women
 Kondapur Village, Ghatkesar Mandak,
 Rangareddy District - 501301

Section 3 - Monthly Invoicing & Payment Schedule

Months of Training Program	September 2018 to March 2019
Monthly Invoicing Schedule (Invoice will be sent as both hard-copy and soft-copy)	<p>By the 5th of the next month i.e</p> <ul style="list-style-type: none"> · For training done in Sep 2018, by 5th Oct 2018 · For training done in Oct 2018, by 5th Nov 2018 · Every month by 5th Invoice should be raised
Monthly Payment Schedule	<p>Before the last working day of the next month i.e</p> <ul style="list-style-type: none"> · For training done in Sep 2018, by 30th Oct 2018 · For training done in Oct 2016, by 30th Nov 2018 · Every Month 30th We have to Collect the payment.

NOTE: After completion of program, FACE Accounts Manager will be in touch with the college SPOC for invoicing and payments. SPOC details are:

DECLARATION: I have read and understood **Section 3 - Monthly Invoicing & Payment Schedule** and I agree to the same. I also agree that Disputes if any are subject to jurisdiction of Coimbatore courts only.

For Vignan Institute Of Management and Technology for women's

For FACE

principal

AVS Sathy
Regional Manager

PRINCIPAL

Vignan Institute of Management and Technology
Kondapur Village, Ghatkesar Mandal,
Ranga Reddy District - 501301



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PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Section 4 – Travel and Logistics – Terms & Conditions

Trainer Travel to (Hyderabad)	FACE will take care
Local conveyance from port of entry in Hyderabad to place of stay	FACE will take care
Trainer Accommodation	FACE will take care
Local Conveyance from place of stay to College and back	College will take care (College bus)
Food Arrangements (Breakfast, Lunch, Dinner)	College will provide Lunch
Materials Printing (If any)	FACE will take care
Materials Dispatch (If Any)	FACE will take care

DECLARATION: I have read and understood **Section 4 - Travel & Logistics - Terms and Conditions** and I agree to the same.

For Vignan Institute Of Management and Technology for women's



principal

PRINCIPAL

Vignan Institute of Management and Technology for women's
Kondapur Village, Ghatkesar Mandal,
Medchal-Malkajgiri District - 501301

For FACE

A.V.S. Sath

Regional Manager

Adn

PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

Service Level Agreement (SLA)

The Service Level Agreement (SLA) is entered into on 19th AUG 2018 between Vignan Institute Of Management and Technology for womens and **Focus Academy for Career Enhancement (FACE)**, No.12, Lakshmi Nagar, Thottipalayam Pirivu, Avinashi Road, Coimbatore - 641014.

Vignan Institute Of Management and Technology for women's is represented by principal and FACE is represented by Satish Ayathu, Regional Manager – Andhra Pradesh & Telangana Vignan Institute Of Management and Technology for women's and FACE decided to lay down the terms and conditions of the SLA with the following clauses. The terms and conditions are not limited to the following but new terms shall only be added with mutual consent of both the parties.

Disputes if any are subject to jurisdiction of Coimbatore courts only.

For Vignan Institute Of Management and Technology for women's For FACE



principal
[Signature]
PRINCIPAL

[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
Telangana State
Think Placements. Think FACE.

[Signature]
Regional Manager



Vignan Institute of Management and Technology for Women
Kondapur Village, Ghatkesar Mandal,
Medchal-Malkajgiri District - 501301

Section 1 – Program and batch details

Full Name of College	Vignan Institute of Management and Technology for Women's
Program Name	TCS Ninja (Aptitude 36 Hours and Technical 24 Hours)
Total Program Duration (in Days)	10 Days
Total Program Duration (in Hours)	60 Hours
Degree and Passing out year of students to be trained	Batch of 2019
Training Dates	August 20,21,23,24,25,27,28,29,30,31 2018
Semester of Study of students to be trained	7 th Semester
Total No of students attending the training (as per attached Batch-List)	100
No of batches	1
Session Timings	9:00 AM to 12:00 PM and 1:00 PM to 4:00 PM

IMPORTANT:

- Last minute changes in training dates will not be accommodated. Hence FACE recommends that the college should double-check and ensure that none of these fall during the training dates: 1. No Local / State / National holidays. 2. No Internal tests / examinations. 3. No college functions. (Ex: Sports day, Annual day) 4. No guest lecturers / special programs. 5. No placement / recruitment process
- Any request for change in training dates needs to be communicated to FACE at-least 7 working days in advance
- Even if communicated 7 working days in advance, FACE is not automatically liable to deliver the service on the revised dates. FACE will re-confirm the possibility of service delivery based on availability of trainers, ease of trainer travel and accommodation and other constraints
- Once the SLA is signed, our Account Manager (AM) from FACE Office will be in touch with you to plan finer details of logistics.
- Batch List of students to be trained needs to be attached to this SLA. This is a mandatory requirement from FACE.

DECLARATION: I have read and understood **Section 1 – Program and batch details** and I agree to the same.

For Vignan Institute Of Management and Technology for women's For FACE


principal

PRINCIPAL

Vignan Institute of Management and Technology for wo.

Kanchi or Village, Ghatkesar Mandal,
R. Medchal District- 501301




Regional Manager


PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Section 2 – Billing Terms and Conditions

Duration of Training Program (in days)	10 Days
Duration of Training Program (in Hours)	60 Hours (Aptitude 36 Hours and Technical 24 Hours)
Training Dates	August 20,21,23,24,25,27,28,29,30,31 2018
Price (Per Trainer Per Day)	Rs. 7250
GST @ 18.0%	Rs. 7250 * 0.18 = Rs. 1305
Total Price Per Trainer(inclusive of taxes)	Rs. 7250 + Rs. 1305 = Rs. 8555
No of students for whom materials will be sent (as per attached batch-list)	100
No of students to be billed (irrespective of attendance, since materials and trainer planning will happen according to batch-list)	NA
Total Contract Value	Total no of Days(10) * Total no of Batches (1) * Rs. 8555 Per Day Per Trainer = Rs. 10*1*8555 = 85,550
Additional Students	NA

NOTE: After completion of program, FACE Accounts Manager will be in touch with the college SPOC for invoicing and payments. SPOC details are:

DECLARATION: I have read and understood **Section 2 - Billing Terms and Conditions** and I agree to the same.

For Vignan Institute Of Management and Technology for women's For FACE



Sudhakar
principal

PRINCIPAL

Vignan Institute of Management and Technology for
Kondapur Village, Ghatkesar Mandal,
Ranga Reddy District - 501301

A.V.S. Satish
Regional Manager

[Signature]
PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Section 3 – Payment Schedule – Terms & Conditions

Advance % Payable	NA										
Advance Amount Payable	NA										
Advance Payment Schedule	NA										
Last date for payment of advance amount (failing which the training will not be delivered)	NA										
Maximum Credit Period for Balance Payment	2 weeks from the invoice is reached.										
Last Date for Balance Payment	From whenever the training ends + 2 Weeks										
Mode of Payment	By Cheque or DD, favoring " Focus 4-D Career Education Pvt. Ltd. " Payable at Coimbatore OR By NEFT/ RTGS Transfer to:										
	<table border="1"> <tr> <td>Account Holder Name</td> <td>Focus 4-D Career Education Pvt. Ltd.</td> </tr> <tr> <td>Account No</td> <td>053109000142765</td> </tr> <tr> <td>Bank Name</td> <td>City Union Bank</td> </tr> <tr> <td>Branch Name</td> <td>Vilankurichi Branch</td> </tr> <tr> <td>IFSC Code</td> <td>CIUB0000053</td> </tr> </table>	Account Holder Name	Focus 4-D Career Education Pvt. Ltd.	Account No	053109000142765	Bank Name	City Union Bank	Branch Name	Vilankurichi Branch	IFSC Code	CIUB0000053
	Account Holder Name	Focus 4-D Career Education Pvt. Ltd.									
	Account No	053109000142765									
	Bank Name	City Union Bank									
	Branch Name	Vilankurichi Branch									
IFSC Code	CIUB0000053										
NOTE: Cash payments will not be accepted											

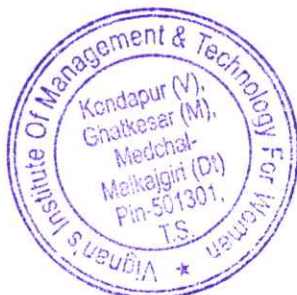
DECLARATION: I have read and understood **Section 3 - Payment Schedule - Terms and Conditions** and I agree to the same. I also agree that Disputes if any are subject to jurisdiction of Coimbatore courts only.

For Vignan Institute Of Management and Technology for women's For FACE

[Signature]
principal
PRINCIPAL

[Signature]
Regional Manager

Vignan Institute of Management and Technology for Women
Kondapur Village, Ghatkesar Mandal,
Ranga Reddy District - 501301



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State

Section 4 – Travel and Logistics – Terms & Conditions

Trainer Travel to (Hyderabad)	FACE will take care
Local conveyance from port of entry in Hyderabad to place of stay	FACE will Arrange cab
Trainer Accommodation	FACE will take care
Local Conveyance from place of stay to College and back	College will take care
Food Arrangements (Breakfast, Lunch, Dinner)	College will provide Lunch
Materials Printing (If any)	FACE will take care
Materials Dispatch (If Any)	FACE will take care

DECLARATION: I have read and understood **Section 4 - Travel & Logistics - Terms and Conditions** and I agree to the same.

For Vignan Institute Of Management and Technology for women's For FACE

[Handwritten Signature]
principal

[Handwritten Signature]
Regional Manager



[Handwritten Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



ELEGANT
EMBEDDED SOLUTIONS

✉ info@elegantembedded.com
www.elegantembedded.com
☎ +91-40-23711541, 9396671541

Memorandum of Understanding

Between

Vignan's Institute of Management and Technology for Women,
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D), Telangana, India-
501301.

And

ELEGANT EMBEDDED SOLUTIONS Pvt Ltd,

With its
Registered office IDA Phase-2,
Cherlapally, Hyderabad, Telangana.

- Hereinafter referred to as "Elegant" -

Institution and Elegant hereinafter referred to individually as "Party" or collectively as "Parties"




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Elegant Embedded Solutions Pvt. Ltd.

202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengalrao Nagar Main Road, Hyderabad-38.



Memorandum of Understanding

This MOU being signed between **ELEGANT EMBEDDED SOLUTIONS Pvt Ltd**, having its registered office at, #Plot no 7,3rd floor, Surana circle, IDA phase 2, Cherlapally, Hyderabad, Telangana 500051, OF THE ONE PART and, **Vignan's Institute of Management and Technology for Women**, an educational institution situated at its registered office at **Vignan's Institute of Management and Technology for Women, Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D), Telangana, India-501301** OF THE OTHER PART, with a mutual desire to cooperate on bringing Industry-Institute interface by providing activities which are in line with the strengths and aspirations of both the organizations. The expressions "Elegant" and "Institution" shall, wherever the context admits, mean and include their respective successors in interest and permitted assigns. This MOU is Initiated at Institution on **17-07-2017**.

WHEREAS

- Elegant Embedded Solutions Pvt. Ltd is a next-generation technology company that helps enterprises; start-ups reimagine their businesses for the digitally connected age with best-in-class products, End to End Solutions, and services in design of embedded systems and IoT.
- Institution is a new generation engineering college, providing world-class infrastructure, top-flight faculty, well stocked library, high pass percentage, excellent placement record, unique student projects.
- Institution and Elegant Embedded Solutions Pvt Ltd are willing to participate in an arrangement with Institution for providing industry Interface to all the students of the Institution as preferred partner.
- By this MOU Elegant Embedded Solutions Pvt Ltd and Institution come together mutually for beneficial cooperation on industry Interface as mentioned below.



Handwritten signature in green ink
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D)-501301
Telangana State

Elegant Embedded Solutions Pvt. Ltd.

#202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengalrao Nagar Main Road, Hyderabad-38.



NOW THEREFORE THIS MOU WITNESSETH AS FOLLOWS:

1. Objectives:

- The objective of this MOU is to combine and synergize the expertise of **Elegant Embedded Solutions Pvt Ltd** and **Institution**.
- Both the parties shall commit the necessary resources in pursuance of the objectives and formulate necessary action plan to fulfil the objectives.
- Both the parties undertake to work with each other in a seamless and transparent manner in the spirit of mutuality and partnership.

2. Areas of Cooperation:

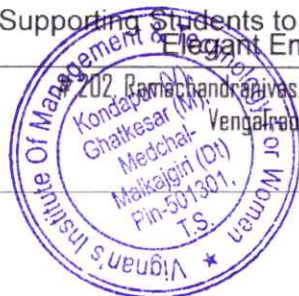
This MOU addresses mutual cooperation in the following areas:

2.1 Scope of work for Institute:

- Allowing Students & faculties for trainings, Workshops, Technical Seminars & Industrial Visits.
- Development of products with the support of the company
- Human Resources for Technical and Non-Technical Activities
- Providing infrastructure facilities for the development of product assigned by the company.
- Providing Consultancy through Subject Experts for Required Project Needs from Company
- Deputing one ECE department faculty as a coordinator for supporting Industry.

2.2 Scope of work for Elegant Embedded Solutions Pvt Ltd.

- Collaboratively Participating State/Central and Global Funding Agencies.
- Conducting Regular Training/Internship/Academic Projects to the Students and Faculties.
- Industry Experts involvement towards Curriculum Development and Deputing Industrial Experts to Board of Studies Activities.
- Providing Consultancy Opportunities to the Domain and Subject Experts at Institutes.
- Enabling Students Involvement towards R and D Activities
- Supporting Students to begin their Entrepreneurship Journey



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

3 Non-Exclusivity:

The cooperation/understanding contemplated herein is not exclusive and Elegant Embedded Solutions Pvt Ltd /Institution shall be free to enter similar arrangements with any other party also.

4. Exercising Authority:

Both Elegant Embedded Solutions Pvt Ltd. and Institution will nominate and inform to each other names of two specific representatives to act as the exercising authorities, for operating the various provisions of this MOU on behalf of their respective organizations. All formal communications will be exchanged Only through these nominated representatives. (If necessary, only)

5. Validity of this MOU

This MOU shall be valid for a period of **1 year** (One Year) initially from the date of signing, after which it can be renewed by mutual agreement between the parties. **Either party during its currency can also terminate this MOU by giving a notice of one month on the other.** On termination, each party shall return to the other party all such documents and reference material as may have been borrowed for the purpose of fulfilling the work under this MOU. This MOU shall also stand terminated if a court of competent jurisdiction declares either of the parties as insolvent. Any termination as per this clause shall not affect the antecedent liabilities of the parties prior to the termination including completion of all assignments that have been agreed prior to such termination.

6. Notices:

All notices and communications concerning this MOU shall be sent to the respective addresses of the parties as below

In the case of **Elegant Embedded Solutions Pvt Ltd**, Plot no 7,3rd floor, surana circle, IDA phase 2, Cherlapalli, Hyderabad, Telangana 500051

In the case of **Vignan's Institute of Management and Technology for Women, Kondapur (v), Ghatkesar(M),Medchal-Malkajgiri(Dist).**

Elegant Embedded Solutions Pvt. Ltd.



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



7. Amendments:

Any amendments to this MOU shall be in writing and signed by both the parties.

8. Ownerships:

Intellectual property rights, titles or ownership of any products, proprietary information or technology will not be transferred from one company to another on account of use of the same as part of any work under this MOU and shall always remain with the original owner of the same.

9. Costs:

Institution shall bear their respective costs arising out of the imparted Industry Interface programs under this MOU.

10. Detailed agreement:

The parties will enter into a detailed agreement for each module materialised under this MOU. The detailed agreement shall outline roles and responsibilities, liabilities to customers and define primary and secondary responsibilities for each assignment to be executed. The detailed agreement shall not override the MOU but define a commercial and contractual framework for work execution.

11. Resolution of Disputes:

11.1 If any dispute arises in connection with this agreement, the responsible representatives of the Parties shall attempt, in fair dealing and in good faith, to settle such dispute. Each Party can request from the other Parties that on all sides a senior representative becomes involved in the negotiations. If the Parties are not able to reach an amicable settlement, each Party may initiate an arbitration proceeding.

11.2 Any dispute or difference or claim arising out of or in relation to this transaction including construction, validity performance or breach thereof shall, shall be referred to and finally resolved by arbitrator under Arbitration and Conciliation Act of 1996 and any subsequent amendments thereof for time being in force. The number of Arbitrator shall be one. If the Parties cannot mutually agree on



Elegant Embedded Solutions Pvt. Ltd.

Chaitanya Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India.

[Handwritten Signature]
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



arbitrator within 4 weeks, then Institution and Elegant Embedded Solutions Pvt Ltd shall appoint a sole arbitrator. The seat of arbitration shall be Coimbatore. The language to be used in the arbitration proceedings shall be English.

12. Commitments:

Institution / Elegant Embedded Solutions Pvt Ltd shall make commitments or bind Institution / Elegant Embedded Solutions Pvt Ltd in any manner with any customer only with prior written consent from Institution / Elegant Embedded Solutions Pvt Ltd. This MOU does not create a joint venture, agency, partnership or other business arrangement, and any agreement between the parties as to business activities will be set forth in subsequent written agreements. Therefore this MOU cannot be used as a right to represent either party on behalf of the other, in any business promotion or canvassing activities.

13. Force Majeure:

Neither Elegant Embedded Solutions Pvt Ltd nor Institution shall be liable for non-performance of any or all their obligations under this MOU due to reasons of "Force Majeure "and / or reasons beyond their reasonable control. If the performance as specified in this proposal is prevented, restricted, delayed or interfered by reason of:

- Fire, explosion, cyclone, floods.
- War, revolution acts or public enemies, locate or embargo.
- Any law, order, proclamation, ordinance, demand or requirements of
- Any Government or authority or representative of any such Government including restrictive trade practices or regulations.
- Strikes, shutdowns or labour disputes which are not instigated for the purpose of avoiding obligations herein or any other circumstances beyond control.
- The same shall not constitute a breach of the agreement and the time for performance for such provision, if any, shall be deemed to be extended for a period equal to the duration of condition preventing performance. In

Case No. the Force - Majeure conditions prevails and / or is likely to prevail for



Elegant Embedded Solutions Pvt. Ltd.

402, Ramchandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,

6
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



a period beyond one month both the parties will decide the project progress & future actions mutually.

14. Governing Law:

This MOU shall be governed by the laws of Republic of India

15. Integration:

This MOU contains the entire understanding between the parties and supersedes any prior written or oral agreements between them.

16. Waiver

No failure or delay on the part of either party in the exercise of any right or privilege hereunder shall operate as a waiver thereof or of the exercise of any other right or privilege hereunder, nor shall any single or partial exercise of any such right or privilege preclude other or further exercise thereof of any other right of privilege.

17. Severability

If any provision of the MOU is held to be ineffective, unenforceable or illegal for any reason, such decision shall not affect the validity or enforceability of any or all the remaining portions thereof.

18. Non-solicitation

During the terms of this MOU and for one year after its expiry or termination, neither party shall, without the prior written consent of the other party, canvass or solicit for direct or indirect employment of any employee (involved with work of this MOU) of each other or proceed with any application by or on behalf of that employee for direct or indirect employment. Neither party shall procure any third party to do any of the aforesaid acts.



[Handwritten Signature]
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Elegant Embedded Solutions Pvt. Ltd.

202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,



ELEGANT
EMBEDDED SOLUTIONS

✉ info@elegantembedded.com
🌐 www.elegantembedded.com
☎ +91-40-23711541, 9396671541

IN WITNESS WHEREOF THE PARTIES HEREIN HAVE HEREUNTO SET THEIR RESPECTIVE HANDS AND SEAL, THE DAY, MONTH AND YEAR FIRST HEREINABOVE MENTIONED.

For Elegant Embedded Solutions Pvt. Ltd.

Signed for and on behalf of
Elegant Embedded Solutions
Cherlapally, Hyderabad,
Telangana 500051.

Signed for and on behalf of Vignan's
Institute of Management and
Technology for Women
Ghatkesar

PRINCIPAL

*Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
Telangana State*



PRINCIPAL
*Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-501301
Telangana State*

Elegant Embedded Solutions Pvt. Ltd.

202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,



ELEGANT
EMBEDDED SOLUTIONS

✉ info@elegantembedded.com
🌐 www.elegantembedded.com
☎ +91-40-23711541, 9396671541

Memorandum of Understanding

Between

Vignan's Institute of Management and Technology for Women,
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D), Telangana, India-
501301.

And

ELEGANT EMBEDDED SOLUTIONS Pvt Ltd,

With its
Registered office IDA Phase-2,
Cherlapally, Hyderabad, Telangana.

- Hereinafter referred to as "Elegant" -

Institution and Elegant hereinafter referred to individually as "Party" or collectively as "Parties".



Adn.
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D)-501301
Telangana State

Elegant Embedded Solutions Pvt. Ltd.

Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,



Memorandum of Understanding

This MOU being signed between **ELEGANT EMBEDDED SOLUTIONS Pvt Ltd**, having its registered office at, #Plot no 7,3rd floor, Surana circle, IDA phase 2, Cherlapally, Hyderabad, Telangana 500051, OF THE ONE PART and, **Vignan's Institute of Management and Technology for Women**, an educational institution situated at its registered office at **Vignan's Institute of Management and Technology for Women, Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D), Telangana, India-501301** OF THE OTHER PART, with a mutual desire to cooperate on bringing Industry-Institute interface by providing activities which are in line with the strengths and aspirations of both the organizations. The expressions "Elegant" and "Institution" shall, wherever the context admits, mean and include their respective successors in interest and permitted assigns. This MOU is executed at Institution on **(06-08-2018)**.

WHEREAS

- Elegant Embedded Solutions Pvt. Ltd is a next-generation technology company that helps enterprises; start-ups reimagine their businesses for the digitally connected age with best-in-class products, End to End Solutions, and services in design of embedded systems and IoT.
- Institution is a new generation engineering college , providing world-class infrastructure, top-flight faculty, well stocked library, high pass percentage, excellent placement record, unique student projects.
- Institution and Elegant Embedded Solutions Pvt Ltd are willing to participate in an arrangement with Institution for providing industry Interface to all the students of the Institution as preferred partner.
- By this MOU Elegant Embedded Solutions Pvt Ltd and Institution come together mutually for beneficial cooperation on industry Interface as mentioned below.



Handwritten signature
PRINCIPAL
Vignan's Institute of Management & Technology For Women
#202, Ramachandrabas, Near S.R. Nagar Metrostation, Opp. Bank Of India
Telangana State



NOW THEREFORE THIS MOU WITNESSETH AS FOLLOWS:

1. Objectives:

- The objective of this MOU is to combine and synergize the expertise of **Elegant Embedded Solutions Pvt Ltd** and **Institution**.
- Both the parties shall commit the necessary resources in pursuance of the objectives and formulate necessary action plan to fulfil the objectives.
- Both the parties undertake to work with each other in a seamless and transparent manner in the spirit of mutuality and partnership.

Areas of Cooperation:

This MOU addresses mutual cooperation in the following areas:

2.1 Scope of work for Institute:

- Allowing Students & faculties for trainings, Workshops, Technical Seminars & Industrial Visits.
- Development of products with the support of the company
- Human Resources for Technical and Non-Technical Activities
- Providing infrastructure facilities for the development of product assigned by the company.
- Providing Consultancy through Subject Experts for Required Project Needs from Company
- Deputing one ECE department faculty as a coordinator for supporting Industry.

2.2 Scope of work for Elegant Embedded Solutions Pvt Ltd.

- Conducting Regular Training/Internship/Academic Projects to the Students and Faculties
- Industry Experts involvement towards Curriculum Development and Deputing Industrial Experts to Board of Studies Activities.
- Providing Consultancy Opportunities to the Domain and Subject Experts at Institutes.



Elegant Embedded Solutions Pvt. Ltd.

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PRINCIPAL
Vignana's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D)
Telangana State 301301



- Enabling Students Involvement towards R and D Activities
- Supporting Students to begin their Entrepreneurship Journey

3 Non-Exclusivity:

The cooperation/understanding contemplated herein is not exclusive and Elegant Embedded Solutions Pvt Ltd /Institution shall be free to enter similar arrangements with any other party also.

4. Exercising Authority:

Both Elegant Embedded Solutions Pvt Ltd and Institution will nominate and inform to each other names of two specific representatives to act as the exercising authorities, for operating the various provisions of this MOU on behalf of their respective organizations. All formal communications will be exchanged Only through these nominated representatives. (If necessary, only)

5. Validity of this MOU:

This MOU shall be valid for a period of **1 year** (One Year) initially from the date of signing, after which it can be renewed by mutual agreement between the parties. **Either party during its currency can also terminate this MOU by giving a notice of one month on the other.** On termination, each party shall return to the other party all such documents and reference material as may have been borrowed for the purpose of fulfilling the work under this MOU. This MOU shall also stand terminated if a court of competent jurisdiction declares either of the parties as insolvent. Any termination as per this clause shall not affect the antecedent liabilities of the parties prior to the termination including completion of all assignments that have been agreed prior to such termination.

6. Notices:

All notices and communications concerning this MOU shall be sent to the respective addresses of the parties as below



Elegant Embedded Solutions Pvt. Ltd.

#202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,

[Signature]
PRINCIPAL
Vignani's Institute of Management & Technology For Women
Kondapur(V), Chatkesar(M), Medchal- Malkajgiri(Dt)-501301
Telangana State



In the case of **Elegant Embedded Solutions Pvt Ltd**, Plot no 7,3rd floor, surana circle, IDA phase 2, Cherlapalli, Hyderabad, Telangana 500051

In the case of **Vignan's Institute of Management and Technology for Women, Kondapur (v), Ghatkesar(M), Medchal-Malkajiri (Dist).**

7. Amendments:

Any amendments to this MOU shall be in writing and signed by both the parties.

8. Ownerships:

Intellectual property rights, titles or ownership of any products, proprietary information or technology will not be transferred from one company to another on account of use of the same as part of any work under this MOU and shall always remain with the original owner of the same.

9. Costs:

Institution shall bear their respective costs arising out of the imparted Industry Interface programs under this MOU.

10. Detailed agreement:

The parties will enter into a detailed agreement for each module materialised under this MOU. The detailed agreement shall outline roles and responsibilities, liabilities to customers and define primary and secondary responsibilities for each assignment to be executed. The detailed agreement shall not override the MOU but define a commercial and contractual framework for work execution.



Elegant Embedded Solutions Pvt. Ltd.

Handwritten signature in green ink.

PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajiri(Dt)-501301
Telangana State



11. Resolution of Disputes:

11.1 If any dispute arises in connection with this agreement, the responsible representatives of the Parties shall attempt, in fair dealing and in good faith, to settle such dispute. Each Party can request from the other Parties that on all sides a senior representative becomes involved in the negotiations. If the Parties are not able to reach an amicable settlement, each Party may initiate an arbitration proceeding.

11.2 Any dispute or difference or claim arising out of or in relation to this transaction including construction, validity performance or breach thereof shall, shall be referred to and finally resolved by arbitrator under Arbitration and Conciliation Act of 1996 and any subsequent amendments thereof for time being in force. The number of Arbitrator shall be one. If the Parties cannot mutually agree on arbitrator within 4 weeks, then Institution and Elegant Embedded Solutions Pvt Ltd shall appoint a sole arbitrator. The seat of arbitration shall be Coimbatore. The language to be used in the arbitration proceedings shall be English.

12. Commitments:

Institution / Elegant Embedded Solutions Pvt Ltd shall make commitments or bind Institution / Elegant Embedded Solutions Pvt Ltd in any manner with any customer only with prior written consent from Institution / Elegant Embedded Solutions Pvt Ltd. This MOU does not create a joint venture, agency, partnership or other business arrangement, and any agreement between the parties as to business activities will be set forth in subsequent written agreements.

Therefore this MOU cannot be used as a right to represent either party on behalf of the other, in any business promotion or canvassing activities, unless so authorized in writing



[Handwritten signature]

PRINCIPAL

Wignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

Elegant Embedded Solutions Pvt Ltd
#202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India



13. Force Majeure:

Neither Elegant Embedded Solutions Pvt Ltd nor Institution shall be liable for non-performance of any or all their obligations under this MOU due to reasons of "Force Majeure "and / or reasons beyond their reasonable control. If the performance as specified in this proposal is prevented, restricted, delayed or interfered by reason of:

- Fire, explosion, cyclone, floods.
- War, revolution acts or public enemies, locate or embargo.
- Any law, order, proclamation, ordinance, demand or requirements of
- Any Government or authority or representative of any such Government including restrictive trade practices or regulations.
- Strikes, shutdowns or labour disputes which are not instigated for the purpose of avoiding obligations herein or any other circumstances beyond control.

The same shall not constitute a breach of the agreement and the time for performance for such provision, if any, shall be deemed to be extended for a period equal to the duration of condition preventing performance. In Case the Force - Majeure conditions prevails and / or is likely to prevail for a period beyond one month both the parties will decide the project progress & future actions mutually.

14. Governing Law:

This MOU shall be governed by the laws of Republic of India

15. Integration:

This MOU contains the entire understanding between the parties and supersedes any prior written or oral agreements between them.



Elegant Embedded Solutions Pvt. Ltd.

[Handwritten Signature]
PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D)-501301
Telangana State



16. Waiver

No failure or delay on the part of either party in the exercise of any right or privilege hereunder shall operate as a waiver thereof or of the exercise of any other right or privilege hereunder, nor shall any single or partial exercise of any such right or privilege preclude other or further exercise thereof of any other right of privilege.

17. Severability

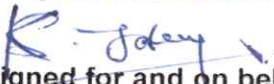
If any provision of the MOU is held to be ineffective, unenforceable or illegal for any reason, such decision shall not affect the validity or enforceability of any or all the remaining portions thereof.

18. Non-solicitation

During the terms of this MOU and for one year after its expiry or termination, neither party shall, without the prior written consent of the other party, canvass or solicit for direct or indirect employment of any employee (involved with work of this MOU) of each other or proceed with any application by or on behalf of that employee for direct or indirect employment. Neither party shall procure any third party to do any of the aforesaid acts.

IN WITNESS WHEREOF THE PARTIES HEREIN HAVE HEREUNTO SET THEIR RESPECTIVE HANDS AND SEAL, THE DAY, MONTH AND YEAR FIRST HEREIN ABOVE MENTIONED.

For Elegant Embedded Solutions Pvt. Ltd.


Signed for and on behalf of
Elegant Embedded Solutions ^{Director}
Cherlapally, Hyderabad,
Telangana 500051.


Signed for and on behalf of Vignan's
Institute of Management and
Technology for Women
Ghatkesar

PRINCIPAL
Vignan's Institute of Management & Technology For Women
Ghatkesar(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-50130
Telangana State



Elegant Embedded Solutions Pvt. Ltd.

#202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India


PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DT)-50130
Telangana State



ELEGANT
EMBEDDED SOLUTIONS

✉ info@elegantembedded.com
🌐 www.elegantembedded.com
☎ +91-40-23711541, 9396671541

Memorandum of Understanding

Between

Vignan's Institute of Management and Technology for Women,
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D), Telangana, India-
501301.

And

ELEGANT EMBEDDED SOLUTIONS Pvt Ltd,

With its
Registered office IDA Phase-2,
Cherlapally, Hyderabad, Telangana.

- Hereinafter referred to as "Elegant" -

Institution and Elegant hereinafter referred to individually as "Party" or collectively as "Parties"



[Handwritten Signature]
PRINCIPAL

* Elegant Embedded Solutions Pvt. Ltd.
202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D)-501301
Telangana State



Memorandum of Understanding

This MOU being signed between **ELEGANT EMBEDDED SOLUTIONS Pvt Ltd**, having its registered office at, #Plot no 7,3rd floor, Surana circle, IDA phase 2, Cherlapally, Hyderabad, Telangana 500051, OF THE ONE PART and, **Vignan's Institute of Management and Technology for Women**, an educational institution situated at its registered office at **Vignan's Institute of Management and Technology for Women, Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D), Telangana, India-501301** OF THE OTHER PART, with a mutual desire to cooperate on bringing Industry-Institute interface by providing activities which are in line with the strengths and aspirations of both the organizations. The expressions "Elegant" and "Institution" shall, wherever the context admits, mean and include their respective successors in interest and permitted assigns. This MOU is executed at Institution on **(23-08-2019)**.

WHEREAS

- Elegant Embedded Solutions Pvt. Ltd is a next-generation technology company that helps enterprises; start-ups reimagine their businesses for the digitally connected age with best-in-class products, End to End Solutions, and services in design of embedded systems and IoT.
- Institution is a new generation engineering college , providing world-class infrastructure, top-flight faculty, well stocked library, high pass percentage, excellent placement record, unique student projects.
- Institution and Elegant Embedded Solutions Pvt Ltd are willing to participate in an arrangement with Institution for providing industry Interface to all the students of the Institution as preferred partner.
- By this MOU Elegant Embedded Solutions Pvt Ltd and Institution come together mutually for beneficial cooperation on industry Interface as mentioned below.



[Signature]
PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301

Elegant Embedded Solutions Pvt. Ltd. **Telangana State**

#202 Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,



NOW THEREFORE THIS MOU WITNESSETH AS FOLLOWS:

1. Objectives:

- The objective of this MOU is to combine and synergize the expertise of **Elegant Embedded Solutions Pvt Ltd and Institution.**
- Both the parties shall commit the necessary resources in pursuance of the objectives and formulate necessary action plan to fulfil the objectives.
- Both the parties undertake to work with each other in a seamless and transparent manner in the spirit of mutuality and partnership.

2. Areas of Cooperation:

This MOU addresses mutual cooperation in the following areas:

2.1 Scope of work for Institute:

- Allowing Students & faculties for trainings, Workshops and Technical Seminars.
- Development of products with the support of the company
- Human Resources for Technical and Non-Technical Activities
- Providing infrastructure facilities for the development of product assigned by the company.
- Providing Consultancy through Subject Experts for Required Project Needs from Company
- Deputing one ECE department faculty as a coordinator for supporting Industry.
- Allowing industry and institute interaction in terms if internships and industrial visits.

2.2 Scope of work for Elegant Embedded Solutions Pvt Ltd.

- Conducting Regular Training/Internship/Academic Projects to the Students and Faculties
- Industry Experts involvement towards Curriculum Development and Deputing Industrial Experts to Board of Studies Activities.
- Providing Consultancy Opportunities to the Domain and Subject Experts at



Elegant Embedded Solutions Pvt. Ltd.

#207, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengalrao Nagar Main Road, Hyderabad-38.

PRINCIPAL

Vignana's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



- Enabling Students Involvement towards R and D Activities
- Supporting Students to begin their Entrepreneurship Journey

3. **Non-Exclusivity:**

The cooperation/understanding contemplated herein is not exclusive and Elegant Embedded Solutions Pvt Ltd /Institution shall be free to enter similar arrangements with any other party also.

4. **Exercising Authority:**

Both Elegant Embedded Solutions Pvt Ltd and Institution will nominate and inform to each other names of two specific representatives to act as the exercising authorities, for operating the various provisions of this MOU on behalf of their respective organizations. All formal communications will be exchanged Only through these nominated representatives. (If necessary, only)

5. **Validity of this MOU**

This MOU shall be valid for a period of **1 year** (One Year) initially from the date of signing, after which it can be renewed by mutual agreement between the parties. **Either party during its currency can also terminate this MOU by giving a notice of one month on the other.** On termination, each party shall return to the other party all such documents and reference material as may have been borrowed for the purpose of fulfilling the work under this MOU. This MOU shall also stand terminated if a court of competent jurisdiction declares either of the parties as insolvent. Any termination as per this clause shall not affect the antecedent liabilities of the parties prior to the termination including completion of all assignments that have been agreed prior to such termination.

6. **Notices:**

All notices and communications concerning this MOU shall be sent to the respective addresses of the parties as below



Elegant Embedded Solutions Pvt. Ltd.

202, Manoharandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Malkajgiri, Hyderabad Nagar Main Road, Hyderabad-38.


PRINCIPAL 4

Vignans Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



In the case of **Elegant Embedded Solutions Pvt Ltd**, Plot no 7,3rd floor, surana circle, IDA phase 2, Cherlapalli, Hyderabad, Telangana 500051

In the case of **Vignan's Institute of Management and Technology for Women, Kondapur (v), Ghatkesar(M),Medchal-Malkajgiri(Dist).**

7. Amendments:

Any amendments to this MOU shall be in writing and signed by both the parties.

8. Ownerships:

Intellectual property rights, titles or ownership of any products, proprietary information or technology will not be transferred from one company to another on account of use of the same as part of any work under this MOU and shall always remain with the original owner of the same.

9. Costs:

Institution shall bear their respective costs arising out of the imparted Industry Interface programs under this MOU.

10. Detailed agreement:

The parties will enter into a detailed agreement for each module materialised under this MOU. The detailed agreement shall outline roles and responsibilities, liabilities to customers and define primary and secondary responsibilities for each assignment to be executed. The detailed agreement shall not override the MOU but define a commercial and contractual framework for work execution.

11. Resolution of Disputes:

11.1 If any dispute arises in connection with this agreement, the responsible representatives of the Parties shall attempt, in fair dealing and in good faith, to settle such dispute. Each Party can request from the other Parties that on all sides a senior representative becomes involved in the negotiations. If the Parties are not able to reach an amicable settlement, each Party may initiate an arbitration proceeding.



Elegant Embedded Solutions Pvt. Ltd.

202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengalrao Nagar Main Road, Hyderabad-38.

[Handwritten Signature]
PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



11.2 Any dispute or difference or claim arising out of or in relation to this transaction including construction, validity performance or breach thereof shall, shall be referred to and finally resolved by arbitrator under Arbitration and Conciliation Act of 1996 and any subsequent amendments thereof for time being in force. The number of Arbitrator shall be one. If the Parties cannot mutually agree on arbitrator within 4 weeks, then Institution and Elegant Embedded Solutions Pvt Ltd shall appoint a sole arbitrator. The seat of arbitration shall be Coimbatore. The language to be used in the arbitration proceedings shall be English.

12. Commitments:

Institution / Elegant Embedded Solutions Pvt Ltd shall make commitments or bind Institution / Elegant Embedded Solutions Pvt Ltd in any manner with any customer only with prior written consent from Institution / Elegant Embedded Solutions Pvt Ltd. This MOU does not create a joint venture, agency, partnership or other business arrangement, and any agreement between the parties as to business activities will be set forth in subsequent written agreements.

Therefore this MOU cannot be used as a right to represent either party on behalf of the other, in any business promotion or canvassing activities, unless so authorized in writing.

13. Force Majeure:

Neither Elegant Embedded Solutions Pvt Ltd nor Institution shall be liable for non-performance of any or all their obligations under this MOU due to reasons of "Force Majeure "and / or reasons beyond their reasonable control. If the performance as specified in this proposal is prevented, restricted, delayed or interfered by reason of:

- Fire, explosion, cyclone, floods
- War, revolution acts or public enemies, locate or embargo.



Elegant Embedded Solutions Pvt. Ltd.

Kondapur(V), Ghatkesar(M), Ramchandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India, Medchal-Malkajgiri (Dt) - 501301, T.S.

[Signature]
PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



- Any law, order, proclamation, ordinance, demand or requirements of
- Any Government or authority or representative of any such Government including restrictive trade practices or regulations;
- Strikes, shutdowns or labour disputes which are not instigated for the purpose of avoiding obligations herein or any other circumstances beyond control.

The same shall not constitute a breach of the agreement and the time for performance for such provision, if any, shall be deemed to be extended for a period equal to the duration of condition preventing performance. In Case the Force - Majeure conditions prevails and / or is likely to prevail for a period beyond one month both the parties will decide the project progress & future actions mutually.

14. Governing Law :

This MOU shall be governed by the laws of Republic of India

15. Integration:

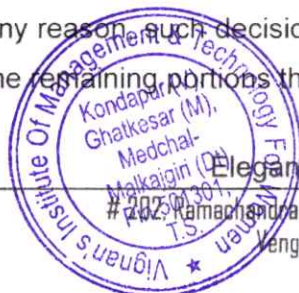
This MOU contains the entire understanding between the parties and supersedes any prior written or oral agreements between them.

16. Waiver

No failure or delay on the part of either party in the exercise of any right or privilege hereunder shall operate as a waiver thereof or of the exercise of any other right or privilege hereunder, nor shall any single or partial exercise of any such right or privilege preclude other or further exercise thereof of any other right of privilege.

17. Severability

If any provision of the MOU is held to be ineffective, unenforceable or illegal for any reason, such decision shall not affect the validity or enforceability of any or all the remaining portions thereof.



Elegant Embedded Solutions Pvt. Ltd.

202/01301,
Rameshwarivanivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengalrao Nagar Main Road, Hyderabad-38.

PRINCIPAL
Vignana's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



18. Non-solicitation

During the terms of this MOU and for one year after its expiry or termination, neither party shall, without the prior written consent of the other party, canvass or solicit for direct or indirect employment of any employee (involved with work of this MOU) of each other or proceed with any application by or on behalf of that employee for direct or indirect employment. Neither party shall procure any third party to do any of the aforesaid acts.

IN WITNESS WHEREOF THE PARTIES HEREIN HAVE HEREUNTO SET THEIR RESPECTIVE HANDS AND SEAL, THE DAY, MONTH AND YEAR FIRST HEREIN ABOVE MENTIONED.

For Elegant Embedded Solutions Pvt. Ltd.

**Signed for and on behalf of
Elegant Embedded Solutions
Cherlapally, Hyderabad,
Telangana 500051.**

**Signed for and on behalf of Vignan's
Institute of Management and
Technology for Women
Ghatkesar**

PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



Elegant Embedded Solutions Pvt. Ltd.

Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Wengalrao Nagar Main Road, Hyderabad-38.

PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



Memorandum of Understanding

Between

Vignan's Institute of Management and Technology for Women,
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D), Telangana, India-
501301.

And

ELEGANT EMBEDDED SOLUTIONS Pvt Ltd,

With its
Registered office IDA Phase-2,
Cherlapally, Hyderabad, Telangana.

- Hereinafter referred to as "Elegant" -

Institution and Elegant hereinafter referred to individually as "Party" or collectively as "Parties"



Elegant Embedded Solutions Pvt. Ltd.

#202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengal Rao Nagar Main Road, Hyderabad-38.

[Handwritten Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D)-501301
Telangana State

Memorandum of Understanding

This MOU being signed between **ELEGANT EMBEDDED SOLUTIONS Pvt Ltd**, having its registered office at, #Plot no 7,3rd floor, Surana circle, IDA phase 2, Cherlapally, Hyderabad, Telangana 500051, OF THE ONE PART and, **Vignan's Institute of Management and Technology for Women**, an educational institution situated at its registered office at **Vignan's Institute of Management and Technology for Women, Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D), Telangana, India-501301** OF THE OTHER PART, with a mutual desire to cooperate on bringing Industry-Institute interface by providing activities which are in line with the strengths and aspirations of both the organizations. The expressions "Elegant" and "Institution" shall, wherever the context admits, mean and include their respective successors in interest and permitted assigns. This MOU is executed at Institution on **(19-07-2021)**.

WHEREAS

- Elegant Embedded Solutions Pvt. Ltd is a next-generation technology company that helps enterprises; start-ups reimagine their businesses for the digitally connected age with best-in-class products, End to End Solutions, and services in design of embedded systems and IoT.
- Institution is a new generation engineering college , providing world-class infrastructure, top-flight faculty, well stocked library, high pass percentage, excellent placement record, unique student projects.
- Institution and Elegant Embedded Solutions Pvt Ltd are willing to participate in an arrangement with Institution for providing industry Interface to all the students of the Institution as preferred partner.
- By this MOU Elegant Embedded Solutions Pvt Ltd and Institution come together mutually for beneficial cooperation on industry Interface as mentioned below.



Elegant Embedded Solutions Pvt. Ltd.

208, Ramachandranagar, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Chalkeer (M), Medchal (D), Malkajgiri (D), Hyderabad Nagar Main Road, Hyderabad-38.


PRINCIPAL 2
Vignan's Institute of Management & Technology For Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(D)-501301
Telangana State



NOW THEREFORE THIS MOU WITNESSETH AS FOLLOWS:

1. Objectives:

- The objective of this MOU is to combine and synergize the expertise of **Elegant Embedded Solutions Pvt Ltd** and **Institution**.
- Both the parties shall commit the necessary resources in pursuance of the objectives and formulate necessary action plan to fulfil the objectives.
- Both the parties undertake to work with each other in a seamless and transparent manner in the spirit of mutuality and partnership.

2. Areas of Cooperation:

This MOU addresses mutual cooperation in the following areas:

2.1 Scope of work for Institute:

- **Allowing Students & faculties for trainings, Workshops, Technical Seminars & Industrial Visits.**
- Development of products with the support of the company
- **Human Resources for Technical and Non-Technical Activities**
- Providing infrastructure facilities for the development of product assigned by the company.
- Providing Consultancy through Subject Experts for Required Project Needs from Company
- Deputing one ECE department faculty as a coordinator for supporting Industry.

2.2 Scope of work for Elegant Embedded Solutions Pvt Ltd

- Collaboratively Participating State/Central and Global Funding Agencies.
- Conducting Regular Training/Internship/Academic Projects to the Students and Faculties.
- Industry Experts involvement towards Curriculum Development and Deputing Industrial Experts to Board of Studies Activities.



Elegant Embedded Solutions Pvt. Ltd.

Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengal Rao Nagar Main Road, Hyderabad-38.


PRINCIPAL 3
Vignan's Institute of Management & Technology For Women
Kondapur(V), Chaitanyam(M), Medchal-Malkajgiri(DT)-501301
Telangana State



- Providing Consultancy Opportunities to the Domain and Subject Experts at Institutes.
- Enabling Students Involvement towards R and D Activities
- Supporting Students to begin their Entrepreneurship Journey

3. **Non-Exclusivity:**

The cooperation/understanding contemplated herein is not exclusive and Elegant Embedded Solutions Pvt Ltd /Institution shall be free to enter similar arrangements with any other party also.

4. **Exercising Authority:**

Both Elegant Embedded Solutions Pvt Ltd and Institution will nominate and inform to each other names of two specific representatives to act as the exercising authorities, for operating the various provisions of this MOU on behalf of their respective organizations. All formal communications will be exchanged Only through these nominated representatives. (If necessary, only)

5. **Validity of this MOU**

This MOU shall be valid for a period of **1 year** (One Year) initially from the date of signing, after which it can be renewed by mutual agreement between the parties. **Either party during its currency can also terminate this MOU by giving a notice of one month on the other.** On termination, each party shall return to the other party all such documents and reference material as may have been borrowed for the purpose of fulfilling the work under this MOU. This MOU shall also stand terminated if a court of competent jurisdiction declares either of the parties as insolvent. Any termination as per this clause shall not affect the antecedent liabilities of the parties prior to the termination including completion of all assignments that have been agreed prior to such termination.

Elegant Embedded Solutions Pvt. Ltd.

202, Kamachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Tengal Rao Nagar Main Road, Hyderabad-38.



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PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Chatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



6. Notices:

All notices and communications concerning this MOU shall be sent to the respective addresses of the parties as below

In the case of **Elegant Embedded Solutions Pvt Ltd**, Plot no 7,3rd floor, surana circle, IDA phase 2, Cherlapalli, Hyderabad, Telangana 500051

In the case of **Vignan's Institute of Management and Technology for Women, Kondapur (v), Ghatkesar(M),Medchal-Malkajgiri(Dist).**

7. Amendments:

Any amendments to this MOU shall be in writing and signed by both the parties.

8. Ownerships:

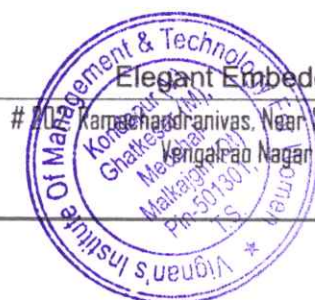
Intellectual property rights, titles or ownership of any products, proprietary information or technology will not be transferred from one company to another on account of use of the same as part of any work under this MOU and shall always remain with the original owner of the same.

9. Costs:

Institution shall bear their respective costs arising out of the imparted Industry Interface programs under this MOU.

10. Detailed agreement:

The parties will enter into a detailed agreement for each module materialised under this MOU. The detailed agreement shall outline roles and responsibilities, liabilities to customers and define primary and secondary responsibilities for each assignment to be executed. The detailed agreement shall not override the MOU but define a commercial and contractual framework for work execution.



Elegant Embedded Solutions Pvt. Ltd.

702, Kamachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Kondapur Main Road, Hyderabad-38.

 5
PRINCIPAL

Vignan's Institute of Management & Technology for Women
Kondapur(V),Ghatkesar(M),Medchal-Malkajgiri(Dt)-501301
Telangana State



11. Resolution of Disputes:

11.1 If any dispute arises in connection with this agreement, the responsible representatives of the Parties shall attempt, in fair dealing and in good faith, to settle such dispute. Each Party can request from the other Parties that on all sides a senior representative becomes involved in the negotiations. If the Parties are not able to reach an amicable settlement, each Party may initiate an arbitration proceeding.

11.2 Any dispute or difference or claim arising out of or in relation to this transaction including construction, validity performance or breach thereof shall, shall be referred to and finally resolved by arbitrator under Arbitration and Conciliation Act of 1996 and any subsequent amendments thereof for time being in force. The number of Arbitrator shall be one. If the Parties cannot mutually agree on arbitrator within 4 weeks, then Institution and Elegant Embedded Solutions Pvt Ltd shall appoint a sole arbitrator. The seat of arbitration shall be Coimbatore. The language to be used in the arbitration proceedings shall be English.

12. Commitments:

Institution / Elegant Embedded Solutions Pvt Ltd shall make commitments or bind Institution / Elegant Embedded Solutions Pvt Ltd in any manner with any customer only with prior written consent from Institution / Elegant Embedded Solutions Pvt Ltd. This MOU does not create a joint venture, agency, partnership or other business arrangement, and any agreement between the parties as to business activities will be set forth in subsequent written agreements.

Therefore this MOU cannot be used as a right to represent either party on behalf of the other, in any business promotion or canvassing activities, unless so authorized in writing



Elegant Embedded Solutions Pvt. Ltd.

Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengal Rao Nagar Main Road, Hyderabad-38.

ASU 6
PRINCIPAL

Vignani's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Maikajiri(Dt)-501301
Telangana State



13. Force Majeure:

Neither Elegant Embedded Solutions Pvt Ltd nor Institution shall be liable for non-performance of any or all their obligations under this MOU due to reasons of "Force Majeure "and / or reasons beyond their reasonable control. If the performance as specified in this proposal is prevented, restricted, delayed or interfered by reason of:

- Fire, explosion, cyclone, floods;
- War, revolution acts or public enemies, locate or embargo;
- Any law, order, proclamation, ordinance, demand or requirements of
- Any Government or authority or representative of any such Government including restrictive trade practices or regulations;
- Strikes, shutdowns or labour disputes which are not instigated for the purpose of avoiding obligations herein or any other circumstances beyond control.

The same shall not constitute a breach of the agreement and the time for performance for such provision, if any, shall be deemed to be extended for a period equal to the duration of condition preventing performance. In Case the Force - Majeure conditions prevails and / or is likely to prevail for a period beyond one month both the parties will decide the project progress & future actions mutually.

14. Governing Law:

This MOU shall be governed by the laws of Republic of India

15. Integration:

This MOU contains the entire understanding between the parties and supersedes any prior written or oral agreements between them.

Elegant Embedded Solutions Pvt. Ltd.

702, Varnachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengal Rao Nagar Main Road, Hyderabad-38.



[Handwritten Signature]
7

PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



16. Waiver

No failure or delay on the part of either party in the exercise of any right or privilege hereunder shall operate as a waiver thereof or of the exercise of any other right or privilege hereunder, nor shall any single or partial exercise of any such right or privilege preclude other or further exercise thereof of any other right of privilege.

17. Severability

If any provision of the MOU is held to be ineffective, unenforceable or illegal for any reason, such decision shall not affect the validity or enforceability of any or all the remaining portions thereof.

18. Non-solicitation

During the terms of this and for one year after its expiry or termination, neither party shall, without the prior written consent of the other party, canvass or solicit for direct or indirect employment of any employee (involved with work of this MOU) of each other or proceed with any application by or on behalf of that employee for direct or indirect employment. Neither party shall procure any third party to do any of the aforesaid acts.

IN WITNESS WHEREOF THE PARTIES HEREIN HAVE HEREUNTO SET THEIR RESPECTIVE HANDS AND SEAL, THE DAY, MONTH AND YEAR FIRST HEREIN ABOVE MENTIONED.

For Elegant Embedded Solutions Pvt. Ltd.

K. Jaleel

Signed for and on behalf of
Elegant Embedded Solutions
Cherlapally, Hyderabad,
Telangana 500051.

[Handwritten Signature]

Signed for and on behalf of Vignan's
Institute of Management and
Technology for Women
Ghatkesar

PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Maikajgiri(DT)-501301
Telangana State



Elegant Embedded Solutions Pvt. Ltd.

202, Ramachandranivas, Near S.R. Nagar Metrostation, Opp. Bank Of India,
Vengal Rao Nagar Main Road, Hyderabad-38.

[Handwritten Signature]

PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Maikajgiri(DT)-501301
Telangana State



CodeMax IT Solutions Pvt. Ltd.
Address: Office No A - 201, 202, 2nd Floor,
Asian Pinnacle, Behind Bank of India,
Fatorda, Goa - 403602
Email: Office@CdMx.in
Phone: +91 (832) 297-6020

**MEMORANDUM OF UNDERSTANDING
BETWEEN
CODEMAX IT SOLUTIONS PRIVATE LIMITED
AND
VIGNAN'S INSTITUTE OF MANAGEMENT
AND TECHNOLOGY FOR WOMEN**




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (hereinafter referred to as "MOU") is executed on the 10th July, 2017. By & between CODEMAX IT SOLUTIONS PRIVATE LIMITED, is a Company registered under The Companies Act 2013, having its registered office at Office No. A-201, 202, 2nd Floor, Street No. Asian Pinnacle, Behind Bank of India, Fatorda South Goa, GOA- 403602 INDIA through its Director Mr. Mayureshwar Rajendra Virkar, hereinafter referred to as the "First Party" which expression shall, unless inconsistent with the context or meaning thereof, be deemed to include its subsidiaries, representatives, nominees, administrators, successors or successors in office and permitted assigns of the FIRST PART;

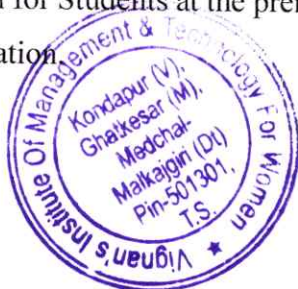
And

Vignan's Institute Of Management And Technology For Women, represented herein by its Principal Dr. P.Sudhakar Rao, hereinafter referred as the 'Second Party', which expression shall, unless inconsistent with the context or meaning thereof, be deemed to include its representatives, successors or successors — in-office, administrators and assigns of the SECOND PART.

Codemax IT Solutions Private Limited and Vignan's Institute Of Management And Technology For Women, shall collectively be referred to as Parties and individually as a Party where the context so requires.

WHEREAS

- A. CODEMAX IT SOLUTIONS PRIVATE LIMITED was founded in 2015 with the aim of employment in Goa and the desire to promote Goa as the IT destination on the world
- B. Vignan's Institute of Management and Technology for Women, is one of the premier institutes in the state of Telangana focused on nurturing quality Engineering talent. Vignan's Institute of Management and Technology for Women has been established with the primary objective of rendering selfless and dedicated service to higher education in the Industrial & Engineering fields.
- C. The Second Party has approached the First Party to collaborate and initiate a support system for Students at the premises of the Second Party situated through collaboration and association.




PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

NOW THIS MOU WITNESSETH AND IT IS HEREBY AGREED, CONFIRMED AND DECLARED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

1. Purpose

a. The purpose of this MOU is to outline how the First Party and the Second Party will work together to maximize the benefits from its mutual interests in supporting students, student projects, organizing events, recruitment and offering cross platform opportunities to Students; bringing in value to the students through the rich network of technology employed by CODEMAX IT SOLUTIONS PRIVATE LIMITED.

2. Scope

The scope of this MOU covers the operational conduct of mutual interest of the Parties and the associated strategies and business needs.

3. Rights and Obligations of the Second Party

The Second Party,

- a. Will organize programs through and with institutions that are relevant to engineering;
- b. Will organize skill development in conjunction with the First Party that is pertinent from time to time;
- c. Shall select and approve faculty of the Second Party along with student groups for engineering skill development;
- d. Will direct the selected and approved students to apply for job openings with the First Party as suitable. The Second party will also restrict the same selected and approved students from applying with other companies for any positions, keeping in the spirit of this MOU;
- e. The Second Party will hand over to the First Party, the higher secondary educational certificates of the selected and approved students before commencement of the program. In addition, the Second Party will also hand over the final degree certificate of the selected and approved students upon successful completion of their graduation. This will be held for the tenure of their contract period;
- f. Shall Create a Center of Excellence among the selected and approved engineering student's groups, consisting of faculty and students.


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Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (DI)-501301
Telangana State

- g. Shall display the name and logo of the first party as a partner for any technology events organized at Vignani's Institute Of Management And Technology For Women in association with the First Party.

4. Rights and Obligations of the First Party

The First Party,

- a. Shall collaboratively work with the Second Party in organizing technology events;
- b. Shall train selected and approved faculties and students on new technologies required in IT industries;
- c. Shall provide training & guidance to the selected and approved students on projects that will be provided by the First Party resulting in an objective oriented project;
- d. Will help provide speakers and resource persons for technical events organized by the Second Party;
- e. Shall offer Internships to the selected and approved students of the Second Party;
- f. Will strive to maintain the Second Party as its primary source in Telangana for recruitment of its engineering graduates from the pool of selected and approved students as well as students not under this program.

5. Confidentiality

- a. Both the Parties recognize, accept and agree that all information obtained or disclosed by and between the parties, including but not limited to all data, documents, applications, papers, statements, slips, programs, plans and /or any business/ customer information, marketing strategies/plans and any and all other trade secrets, confidential knowledge or information of either Party relating to its activities, practice and procedures (hereinafter collectively referred to as "information") which may be provided or communicated by one Party to the other Party in connection with this MOU and/or in the course of performance of this MOU, shall remain the sole property of the Party providing such information and shall be of strictly private and confidential nature and shall be treated as confidential by the other Party.
- b. During the term of this MOU and thereafter, neither Party shall make use of any information for any purpose whatsoever which is not necessary for the discharge of its




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Telangana State

obligation under this MOU or to the disadvantage of the Party providing such information, nor shall the Party receiving such information divulge it to anyone other than the Party providing the information or persons designated by such Party.

c. All information shall be returned forthwith by the Party receiving such information to the Party providing the information on the expiry or termination of this MOU; Provided that the Party receiving such information shall, upon demand by the Party providing it at any time during the term of this MOU, return to the Party providing it, any and all information.

6. Commencement, Duration and Termination

a. The effective commencement date of this working relationship will be the date of the signing of this MOU and the working relationship shall remain in force for a period of 2 years from the commencement date.

b. This MOU can be terminated at any time by either Party by giving 30 (thirty) calendar days written notice of termination to the other Party. If either Party terminates the Memorandum of Understanding, steps shall be taken to ensure that the termination does not affect any prior obligation, project or activity already in progress unless mutually decided otherwise by the Parties.

c. Upon mutual consent of the Parties, the term of this MOU may be extended by a written instrument. Such extension may be made subject to the terms and conditions hereunder and to any other terms and conditions as the Parties may determine to be necessary.

7. Intellectual Property Rights

a. The Second Party agrees that the rights, title and interest to Intellectual Property that results as an outcome from a project done in pursuance of this MOU would vest exclusively with the First Party.

b. Any intellectual property that was owned by either party before signing this MOU would remain the sole and exclusive property of the party.




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Telangana State

8. Governing Law and Dispute Resolution

- a. This MOU shall be fully enforceable in India and shall be governed by and construed in accordance with the laws of India.
- b. Any disputes arising out of this MOU shall be settled amicably between the Parties.
- c. Parties agree to submit all their disputes arising out of or in connection with this MOU to the exclusive jurisdiction of courts in the State of Telangana.

9. Amendment

This Memorandum of Understanding may be amended or modified by mutual consent of the Parties only by a written instrument executed between the Parties by their duly authorized representatives.

10. Notices

All notices, letters, demands, requests and all other communication under this MOU shall be in writing and shall be deemed to have been duly given (i) if delivered by hand and received by the receiving party or (ii) mailed by registered post to the address of the parties mentioned herein above and shall be deemed to be delivered as per the delivery postal receipt.

11. Severability

Wherever possible, each provision of this MOU shall be interpreted in such a manner as to be effective and valid under the applicable law, but if any provision of this MOU shall be prohibited by or invalid under the applicable laws, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remaining provisions of this MOU.




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Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State



CodeMax IT Solutions Pvt. Ltd.
Address: Office No A - 201, 202, 2nd Floor,
Asian Pinnacle, Behind Bank of India,
Fatorda, Goa - 403602
Email: Office@CdMx.in
Phone: +91 (832) 297-6020

12. Indemnity

Either Party agrees to indemnify and hold harmless the other Party from and against all losses, liabilities, deficiencies, costs, damages and expenses incurred by the Party as a result of any inaccuracy in or breach of the representations, warranties or covenants made by the other Party herein.

13. Waiver

No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this MOU, or the waiver by any party of any breach of this MOU, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

IN WITNESS WHEREOF, the Parties have executed this Memorandum of Understanding to become effective as on the date first written above.

Signed by



Ms. Nestinka Cleto Rebello
Director

Dr. P. Sudhakar Rao,
PRINCIPAL

Vignani's Institute of Management & Technology For Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State



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Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (Dt)-501301
Telangana State

TASK - Acknowledgement!

2 messages

TASK <registrations@tstask.com>
To: tpo.vmtw@gmail.com

28 June 2017 at 12:08

Dear College Management ,

Thank You for making the payment towards TASK registration for the academic year 2017-18.

We are pleased to provide you with the following details:

Username: tpo.vmtw@gmail.com

Password: 234673

Name of the College: VIGNANS INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

Amount in INR: 11632.25.00/-

Payment Date: 2017-06-28 12:57:03

Transaction Identification Number: 343483864 (Please quote this number for any queries relating to this request)

Payment Status: Success

Please **CLICK HERE** or open the link below in your browser to login to your TASK account.

<https://www.task.telangana.gov.in/Login>

Thank you,
TASK



Handwritten signature in green ink
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

12/22/2018

Gmail - TASK - Acknowledgement!



Vinutha Kandukuri <tpo.vmtw@gmail.com>

TASK - Acknowledgement!

2 messages

TASK <registrations@tstask.com>
To: tpo.vmtw@gmail.com

29 May 2018 at 13:58

Dear College Management

Thank You for making the payment towards TASK RENEWAL for the academic year 2018-19.

We are pleased to provide you with the following details:

Name of the College: VIGNANS INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

Amount in INR: 11939.24.00/-

Payment Date: 2018-05-29 13:39:55

Transaction Identification Number: 531401796 (Please quote this number for any queries relating to this request)

Payment Status: Success

Thank you,
TASK



Vignans
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Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Maikajiri(Dt)-501301
Telangana State



Sudhakara Rao Parvataneni <hyd.vmtw.principal@gmail.com>

TASK - Acknowledgement!

TASK <registrations_task@telangana.gov.in>
To: hyd.vmtw.principal@gmail.com

27 May 2019 at 12:36

Dear Principal

Thank You for making the payment towards TASK RENEWAL for the academic year 2019-20.

We are pleased to provide you with the following details:

Name of the College: VIGNANS INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

Amount in INR: 11939.24.00/-

Payment Date: 2019-05-27 12:02:36

Transaction Identification Number: 810113079 (Please quote this number for any queries relating to this request)

Payment Status: Success

Thank you,
TASK



ASU
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajiri(Dt)-501301
Telangana State

To

The Vignan Institute of Management and Technology for Women,
Ghatkesar, Kondapur
Telangana – 501301

Dear Mam,

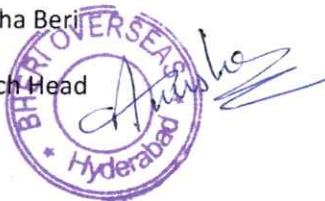
We at **Bheri overseas** (Franchise of Valmiki Foreign Education Services), Tarnaka Branch has trained below mentioned no of students for the year **2018-2019**.

SNO	ACADEMIC YEAR	DURATION FOR GRE COACHING	NO OF STUDENTS	TIME	PARTICIPANTS
1	2018-2019	7-Sep-18 to 2-Nov-18	35	3:30 pm to 5:00 pm	III Years

Thank you for giving us an opportunity to work with Vignan Institute of Management and Technology for Women, Ghatkesar, Kondapur, Telangana - 501301.

Thanks & Regards,

Anusha Beri
Branch Head




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Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State



Armtronics

Dedicated to Electronics

MEMORANDUM OF UNDERSTANDING

This Deed of MOU is made and executed on 15th of June 2017 at by and between:

ARMTRONICS & Vignan's Institute of Management and Technology for Women.

ARMTRONICS, office at, 2nd Floor, Eureka Court, Near Image Hospital, Ameerpet, Hyderabad, Telangana-500073; represented by Mr. Arjun Modi in the capacity as Senior Technical Associate, having the power to act on behalf of the company, herein after referred to as the **FIRST PARTY**.

Vignan's Institute of Management and Technology for Women, Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D), Telangana 501301 as the **SECOND PARTY**.

WHEREAS both the above parties have come to an understanding, and agreed the Terms and conditions orally, now they feel it desirable to reduce the same into writing to avoid any probable complications in future.

NOW THIS MOU WITNESSES AS FOLLOWS

- 1) Exchanging of expertise by means of Training programmes ,Guest Lectures, Workshops and other events for the benefit of faculty and students.
- 2) Permitting practical training to students.

Note:

1. All the above modes will be decided up on mutual consent based on Availability, work Schedule, and Manpower of the company.
2. There is no financial obligation in this agreement .



www.armtroniclabs.com

Second Party

(Vignan's Institute of Management and Technology for Women)

PRINCIPAL

Vignan's Institute of Management & Technology For w.
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(D)-501301

Telangana State

Copyright: ©ARMTRONICS. All Rights Reserved



Armtronics

Dedicated to Electronics

MEMORANDUM OF UNDERSTANDING

This Deed of MOU is made and executed on 25th of June 2018 at by and between:

ARMTRONICS & Vignan's Institute of Management and Technology for Women.

ARMTRONICS, office at, 2nd Floor, Eureka Court, Near Image Hospital, Ameerpet, Hyderabad, Telangana-500073; represented by Mr. Arjun Modi in the capacity as Senior Technical Associate, having the power to act on behalf of the company, herein after referred to as the **FIRST PARTY**.

Vignan's Institute of Management and Technology for Women, Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D), Telangana 501301 as the **SECOND PARTY**.

WHEREAS both the above parties have come to an understanding, and agreed the Terms and conditions orally, now they feel it desirable to reduce the same into writing to avoid any probable complications in future.

NOW THIS MOU WITNESSES AS FOLLOWS

- 1) Exchanging of expertise by means of Training programmes, Guest Lectures, Workshops and other events for the benefit of faculty and students.
- 2) Permitting practical training to students.

Note:

1. All the above modes will be decided up on mutual consent based on Availability, work Schedule, and Manpower of the company.
2. There is no financial obligation in this agreement.



www.armtroniclabs.com

Second Party

(Vignan's Institute of Management and Technology for Women)

PRINCIPAL

Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(DI)-501301
Telangana State

Copyright: © ARMTRONICS. All Rights Reserved

This agreement is made and executed on this 06th day of April, 2017 at Hyderabad by and between M/s **VALMIKI CONSULTANTS PVT. LTD.**, a company, incorporated under the Companies Act, 1956 and having its Registered Office at #207, Jade Arcade, Opposite Hotel Paradise, Secunderabad – 500 003, represented by its Director, Ln. Surya Ganesh Valmiki, (**Herein after called as First Part**, which expression shall, unless repugnant to or inconsistent with the context, mean and include, its successors-in-interest and assignees, etc).

AND

M/s **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN**, having its registered office at Babukhan Estates, Basheerbagh, represented by Principal Dr. Sudhakara Rao Parvataneni, (**hereinafter after called as Second Part**, which expression shall, unless repugnant to or inconsistent with the context, mean and include his/her heirs, executors, administrators, legal representatives and assignees, etc)

WHEREAS First Part is engaged in the business of Overseas Education Consultancy that is operated in accordance with a distinctive system and plans. First Part is an authorized agent of various universities abroad.

WHEREAS First Part is an established overseas education consultancy and has developed by utilizing and compromising the technical knowledge, trade secrets, confidential information, techniques, identifying schemes and materials, standard operational procedures, and proprietary information related to the operation of Overseas Education consultancy.

Whereas the Second Part is an Academic Institution offering UG/PG programs, but the Second Part does not have arrangements with the Universities in the abroad, hence First Part has come forward to offer services and guidance to students on campus. Whereas the Second Part will provide infrastructure facility to carry out the operations of **Valmiki Career Counseling Center (VCCC)**



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

NOW THIS AGREEMENT IS WITNESSETH AS FOLLOWS:

PART I: General Specifications

1. This agreement between the parties is valid for a period of 1 year commencing from April, 2017 to April, 2018.
2. This is a non exclusive agreement with second party. The first party can engage in similar agreements with other similar institutions.
3. Both the parties shall not make use of the Trademarks, Trade name, Trade dress, patents, copyrights, other logos, designs, monograms and all other intellectual property rights own and used without written consent from either parties.
4. The second part shall not offer any guarantee or admission or guarantee of visa to any student. If any student claims that the guarantee is given, then the party to the first is not liable and the second part alone is liable to fight with such students.
5. The second part shall not charge any fees from the student exorbitantly. If there is any dispute in respect of the same there is no liability of first part and the second part alone is responsible to deal with the student.
6. The second part shall preserve the goodwill and reputation of the first part and operate in strict compliance of laws which are required under law. The second part shall not allow any illegal activities such as fake documents etc.
7. This Agreement together with all schedules, annexure, appendices and amendments incorporated/communicated from time to time constitutes the entire agreement between the Parties relating to the subject matter. There are no oral or implied agreements and no oral or implied warranties or understanding between the Parties.
8. The second part is authorized to be represented as **Valmiki Career Counseling Center (VCCC)**.

This agreement witnesses on the day, month and year mentioned above in the presence of the following witnesses.



[Signature]
PRINCIPAL
Vignani's Institute of Management & Technology For Women
Kondapur(V), Ghatakasari(M), Medchal-Malkajgiri(DI),
Telangana State

This agreement witnesses on the day, month and year mentioned above in the presence of the following witnesses.

WITNESSES

1) FIRST PARTY

For VALMIKI GROUP



Signature: _____

Name: Mr. Chaithanya Sharma

Title : Sale & Marketing Head

Date: 06th April, 2017

2) SECOND PART

For VIGNAN'S INSTITUTE OF MANAGEMENT & TECHNOLOGY FOR WOMEN

Signature: _____

Name: Dr. P. Sudhakara Rao

Title : Principal

Date: 06th April, 2017



P. Sudhakara Rao
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

AGREEMENT

This agreement is made and executed on this 02nd day of August, 2018 at Hyderabad by and between M/s **VALMIKI CONSULTANTS PVT. LTD.**, a company, incorporated under the Companies Act, 1956 and having its Registered Office at #207, Jade Arcade, Opposite Hotel Paradise, Secunderabad – 500 003, represented by its Director, Ln. Surya Ganesh Valmiki, (**Herein after called as First Part**, which expression shall, unless repugnant to or inconsistent with the context, mean and include, its successors-in-interest and assignees, etc).

AND

M/s **VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN**, having its registered office at Babukhan Estates, Basheerbagh, represented by Principal Dr. Sudhakara Rao Parvataneni, (**hereinafter after called as Second Part**, which expression shall, unless repugnant to or inconsistent with the context, mean and include his/her heirs, executors, administrators, legal representatives and assignees, etc)

WHEREAS First Part is engaged in the business of Overseas Education Consultancy that is operated in accordance with a distinctive system and plans. First Part is an authorized agent of various universities abroad.

WHEREAS First Part is an established overseas education consultancy and has developed by utilizing and compromising the technical knowledge, trade secrets, confidential information, techniques, identifying schemes and materials, standard operational procedures, and proprietary information related to the operation of Overseas Education consultancy.

Whereas the Second Part is an Academic Institution offering UG/PG programs, but the Second Part does not have arrangements with the Universities in the abroad, hence First Part has come forward to offer services and guidance to students on campus. Whereas the Second Part will provide infrastructure facility to carry out the operations of **Valmiki Career Counseling Center (VCCC)**



[Signature]
PRINCIPAL
Vignan's Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dy)-501301
Telangana State

NOW THIS AGREEMENT IS WITNESSETH AS FOLLOWS:

PART I : General Specifications

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2. This is a non exclusive agreement with second party. The first party can engage in similar agreements with other similar institutions.
3. Both the parties shall not make use of the Trademarks, Trade name, Trade dress, patents, copyrights, other logos, designs, monograms and all other intellectual property rights own and used without written consent from either parties.
4. The second part shall not offer any guarantee or admission or guarantee of visa to any student. If any student claims that the guarantee is given, then the party to the first is not liable and the second part alone is liable to fight with such students.
5. The second part shall not charge any fees from the student exorbitantly. If there is any dispute in respect of the same there is no liability of first part and the second part alone is responsible to deal with the student.
6. The second part shall preserve the goodwill and reputation of the first part and operate in strict compliance of laws which are required under law. The second part shall not allow any illegal activities such as fake documents etc.
7. This Agreement together with all schedules, annexure, appendices and amendments incorporated/communicated from time to time constitutes the entire agreement between the Parties relating to the subject matter. There are no oral or implied agreements and no oral or implied warranties or understanding between the Parties.
8. The second part is authorized to be represented as **Valmiki Career Counseling Center (VCCC)**.



PRINCIPAL
Vignans Institute of Management & Technology for Women
Kondapur (M), Chaitanya (M), Malkajgiri (Dt)-501301, Medchal
Vignans Institute of Management & Technology for Women
Kondapur (M), Chaitanya (M), Malkajgiri (Dt)-501301, Medchal
Vignans Institute of Management & Technology for Women
Kondapur (M), Chaitanya (M), Malkajgiri (Dt)-501301, Medchal

This agreement witnesses on the day, month and year mentioned above in the presence of the following witnesses.

WITNESSES

1) FIRST PARTY

For VALMIKI GROUP



Signature: _____

Name: Mr. Chaithanya Sharma

Title : Sale & Marketing Head

Date: 06th April, 2017

2) SECOND PART

For VIGNAN'S INSTITUTE OF MANAGEMENT & TECHNOLOGY FOR WOMEN

Signature: _____

Name: Dr. P. Sudhakara Rao

Title : Principal

Date: 06th April, 2017



P. Sudhakara Rao
PRINCIPAL
Vignans Institute of Management & Technology For Women
Kondapur(V), Ghatkesar(M), Medchal-Malkajgiri(Dt)-501301
Telangana State

A secure new HRF mechanism for mitigate EDoS attacks

Suneetha Bulla*

Koneru Lakshmaiah Educational Foundation,
Vaddeswaram, Guntur, Andhrapradesh, India
Email: suneethabulla@gmail.com

*Corresponding author

B. Basaveswararao, K. Gangadhara Rao and
K. Chandan

Acharya Nagerjuna University,
Nagarjuna Nagar, Guntur, Andhrapradesh, India
Email: bobbabrao@yahoo.co.in
Email: kancherla123@gmail.com
Email: kotagirichandan@gmail.com

Sirisati Ranga Swamy

Vignan's Institute of Management and Technology for Women,
Hyderabad, Telangana, India
Email: sirisatiranga@gmail.com

Abstract: This paper proposes HTTP request filtering (HRF) mechanism to detect and mitigate EDoS attacks and compare the performance with existing mechanism through game theoretical approach. The HRF mechanism was implemented with three stages and hosted on web application firewalls (WAF). The performance of these mechanisms with cost analysis is done using finite queuing model. The efficiencies are compared with the formation of two player non-cooperative zero-sum game and gains are calculated based on loss probability as a QoS metric. To obtain the analytical solution and computation of game value, different probabilities of defending strategies and attacking strategies through numerical illustrations are carried out. The results are discussed and finally conclusions are drawn.

Keywords: HTTP request filtering; HRF; cloud security; web application firewalls; WAF; honeypot; game theory.

Reference to this paper should be made as follows: Bulla, S., Basaveswararao, B., Rao, K.G., Chandan, K. and Swamy, S.R. (2022) 'A secure new HRF mechanism for mitigate EDoS attacks', *Int. J. Ad Hoc and Ubiquitous Computing*, Vol. 40, Nos. 1/2/3, pp.20–29.

Biographical notes: Suneetha Bulla is working as an Assistant Professor at Vignan's Foundation for Science, Technology and Research (Deemed to be University). She was awarded her PhD from Acharya Nagarjuna University. Her research areas of interests are cloud computing, machine learning, and artificial intelligence.

B. Basaveswararao received his PhD in Computer Science and Engineering from Acharya Nagarjuna University, India. Currently, he is an Associate Professor at the Department of Computer Science and Engineering, Acharya Nagarjuna University, India. His research areas of interest are cloud computing, data mining and MANETS. He has 20 years of experience. He has eight research scholars.

K. Gangadhara Rao received his PhD in Computer Science and Engineering from Acharya Nagarjuna University, India. Currently, he is currently a Professor at the Department of Computer Science and Engineering, Acharya Nagarjuna University, India. His research areas of interest are cloud computing, datamining and MANETS. He has 20 years of experience. He has eight research scholars.

K. Chandan was awarded his PhD from Indian Institute of Technology, Kharagpur. His areas of research are operations research, queuing theory, game theory, investment analysis, stochastic process, sampling theory, management information system, DBMS. He is a Professor of Statistics Department at Acharya Nagarjuna University since 2004. He is a member of Academic Senate, ANU and he is also the coordinator of Joint CSIR-UGC NET for JRF ICS.



Vignan's Institute of Management & Technology for Women
Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (DU-501301)
Telangana State

A Sophisticated and Light weight Cryptographic Protocols for Data Security in Wireless Sensor Networks

¹Dr. C. Srinivasa Kumar, ²Dr. A.C. Priya Ranjani, ³Dr. Pradeep Venuthurumilli, ⁴Dr. A. Gautami Latha, ⁵Dr. Ranga Swamy Sirisati

¹Professor, Department of CSE, Vignan's Institute of Management and Technology for Women, Kondapur, Ghatkesar, Hyderabad, Telangana, EMail: drcskumar41@gmail.com

²Associate Professor, Dept. of CSE, Vijaya Institute of Technology for Women, Vijayawada, Andhra Pradesh, Mail: acpranjani@gmail.com

³Associate Professor, Department of CSE, ST.Mary's Women's Engineering College, Guntur, Andhra Pradesh, India-522017, Email: pradeepvenuthuru@gmail.com

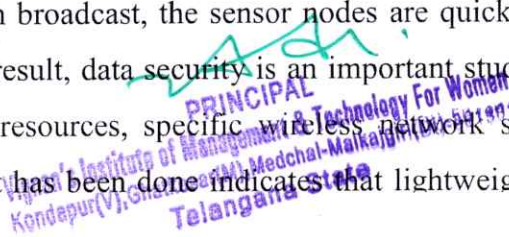
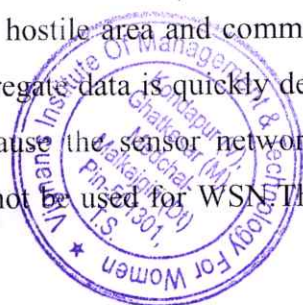
⁴Professor, Department of CSE, Sridevi Women's Engineering College, Vattinagulapally, Hyderabad-500075, Telangana, India, E-Mail: gauthamilatha2021@gmail.com

⁵Associate Professor, Department of CSE, Vignan's Institute of Management and Technology for Women, Kondapur, Ghatkesar, Hyderabad, Telangana E-Mail: sirisatiranga@gmail.com

Received: 2022 March 15; **Revised:** 2022 April 20; **Accepted:** 2022 May 10

Abstract

Wireless Sensor Networks have been used practically every application because they give a cost-effective solution to real-world challenges. However, the sensor nodes have limited processing capacity, battery power, and memory. These nodes immediately transmit the measured environmental or physical data to the Base Station (BS). This direct transfer of data raises the cost of data connectivity. Furthermore, increased data exchange consumes more energy, reducing the lifespan of sensor networks. As a result, the data aggregation methodology is used in WSN to minimize transmission costs and extend the lifespan of sensor networks. Because the nodes are put in a hostile area and communicate through broadcast, the sensor nodes are quickly taken, and the aggregate data is quickly destroyed. As a result, data security is an important study topic in WSN. Because the sensor network has limited resources, specific wireless network security solutions cannot be used for WSN. The research that has been done indicates that lightweight block cyphers





A New Type of Solar Energy Measurement System using PIC Controller

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Abstract: As we know solar energy is an very important aspect in respect to the present environmental situation. It is necessary to change our energy resources from non renewable to renewable sources. This project is designed to measure energy of solar panels. The current and voltage are measured so that we can monitor these parameters and get to know where to use them and what updations should be made to increase there productivity, efficiency with low maintenance. Here, the measurements are done by the help of different sensors and PIC microcontroller.

Keywords: Solar Energy, Renewable sources, PIC microcontroller

I. INTRODUCTION

In this project we will discuss about the solar energy measurement using pic microcontroller. As we know the solar energy market place is one of the most quickly growing renewable energy advertise in the whole world as now a days it is very important to use renewable energy to preserve the world from destruction. It is a major goal of todays economies to switch to sustainable resources so that the technology can grow in its pace without harming the planet. Due to which it is necessary to choose the correct place where the solar plants can be installed so that we can harvest the maximum of the energy and put it to good use. The more we will use solar energy the less our environment will be harmed. Whether we need sites pattern of solar power generation or monitoring act of accessible solar installations or superior solar monitoring .The precise measurement of voltage and current are very crucial as they can help the designing and making more developed product which will require less maintenance and will be much more efficient. In this project we are using Pic microcontroller specifically pic16f877a. Which is a very high performance microcontroller. And current and voltage sensors to take the measurements.[1]

II. OBJECTIVE

The main purpose of this solar energy measurement system project is to design a solar energy measurement system for determining the solar cell parameters like current, voltage, temperature and also light intensity through multiple sensors
The solar energy marketplace is one of the most quickly growing renewable energy advertise in the United States. Currently, we have seen an important enhancement in requirements for remote monitoring and equipment control for different applications of solar energy. Whether you are assessed a sites potential for solar power generation, monitoring act of accessible solar installations, or superior solar monitoring, consistent and precise measurements are crucial. They help in decision making, development of the product, maintenance of the system and in many other ways. General meteorological measurements with wind direction, wind speed, relative humidity, barometric pressure and rainfall, all have theyre applied in solar applications. Of course, the solar energy measurements are particularly significant and sensors are accessible for measuring all features of solar radiation[2][3].

III. METHODOLOGY

In the block diagram we can see voltage sensor and current sensor are used. These devices mainly measure the voltage and current flowing to load from solar panels as the solar panels are power sources. Liquid crystal is also used for displaying the value of current and voltage and the power of solar panels. Here 5 volt DC power is used. It provides operating voltages to microcontroller and liquid crystal display. In circuit diagram we can see that a voltage driver is used. It drives voltage lower than 5 volt as microcontroller cannot read voltage more than 5 volt. So voltage driver is used to lower voltage more than 5 volt. Then a polar and non polar capacitors are used. These remove harmonics and provide constant voltage to ADC pin of microcontroller. Here polar capacitor is used to avoid voltage fluctuations and non polar capacitor is used here to remove harmonics. LM35 temperature sensor can be used too. It is calibrated in Celsius over Kelvin as in Kelvin calibrated sensor there is a requirement. It subtracts a constant voltage from its output. With the single power supply LM35 temperature sensor can also be used. -55 to +150 is the temperature range in between which the device can be used.[4][5]



A SELF-ACTIVATING PLAYFUL STEM ROBOT USING RASPBERRY PI

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Abstract: It is important to give proper education to all the children. Kids must learn properly and at the same time they must enjoy education. Due to the recent pandemic situation children cannot go outside and they are not able to relish their normal life. We have proposed an automated conversational robot toy that has an audio-visual facility in it. This paper deals with some basic components like Raspberry Pi, IR(Infrared) Sensor, OLED (Organic Light Emitting Diode) Display, Ultrasonic Sensor, Servo Motor, etc. Here, advanced facial and voice recognition is used to recognize and react to the kids. This conversational robot is used to educate children professionally. Thus, the learning experience is enhanced and will bring change to the new generation. This paper is an easier approach for learning and also it is a representation of powerful, secure technology and robotics.

Keywords: STEM, Conversational robot, Raspberry Pi, IR Sensor, Ultrasonic Sensor, OLED, RGB Light, Servo motor.

1. INTRODUCTION

This project is about a robot toy that is playful and at the same time the user can learn from it. This is a conversational robot that is based on a STEM (Science, Technology, Engineering, Mathematics) methodology, so we can refer to this as a playful, learning STEM Robot toy [1]. It has a major feature of voice activation, which makes it more likely and friendly to use. Also, the Robot is automated thus it can respond and give output automatically.[2] The robot is best suited for the age group of 13-20 years as it includes the best learning and gaming features in it. The automated STEM robot is fully programmed using different basic materials like batteries, sensors, motors, transistors. It also includes Raspberry Pi and Arduino as major equipment in it. All these materials will be used to make these multiple featured robots. This robot will be a great example of advanced and secure technology in this modern world.

2. OBJECTIVE

The main purpose of making this conversational robot is to enhance the learning experience and as well as be playable to the users. This will work as a professional educator for the kids.[3] Proper education to the kids from the beginning is needed and the reason this robot is best for education purposes to the children. Our proposed conversational robot will allow all to learn and explore different languages. Also, as per the new education policies which say that the compulsory learning of local languages, our conversational robot is designed accordingly so that users can access any language needed. This will reflect the Indian culture which will emphasize Indian tradition to the kids [4]. Along with studies children can learn proper communication skills with others which is important. The simple features of this robot make it easily accessible to the kids. Keeping in mind the recent covid situation this conversational robot is made to reduce the loneliness of the kids and give them a playful, learning, autonomous, conversational robot.

3. LITRATURE SURVEY

In [1] the authors approached a humanoid robot called ROBITA, which will help in THE conversation between a group of people. In [2] authors have reviewed the possible verbal and non-verbal interaction between a human and a robot. Authors in [3] said about a software application-based chatbot that is made up of artificial intelligence and machine learning. In [4] authors have described a broad analysis to evaluate the human-robot system and all the general application methods. [5] is a review article that explains usability and designs of unmanned vehicles. In the paper [6] authors have proposed a system which will focus on STEM education through robotics technology. Their purpose is to develop student learning by the Constructivism and Constructionism theories. The paper [7] attempted to utilize the application of robotics in the primary education system. They have used different programming fundamentals to highlight the educational benefits of robotics. In [8] authors have discussed the

Research Article

A Novel Diabetes Healthcare Disease Prediction Framework Using Machine Learning Techniques

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Diabetes is a chronic disease that continues to be a significant and global concern since it affects the entire population's health. It is a metabolic disorder that leads to high blood sugar levels and many other problems such as stroke, kidney failure, and heart and nerve problems. Several researchers have attempted to construct an accurate diabetes prediction model over the years. However, this subject still faces significant open research issues due to a lack of appropriate data sets and prediction approaches, which pushes researchers to use big data analytics and machine learning (ML)-based methods. Applying four different machine learning methods, the research tries to overcome the problems and investigate healthcare predictive analytics. The study's primary goal was to see how big data analytics and machine learning-based techniques may be used in diabetes. The examination of the results shows that the suggested ML-based framework may achieve a score of 86. Health experts and other stakeholders are working to develop categorization models that will aid in the prediction of diabetes and the formulation of preventative initiatives. The authors perform a review of the literature on machine models and suggest an intelligent framework for diabetes prediction based on their findings. Machine learning models are critically examined, and an intelligent machine learning-based architecture for diabetes prediction is proposed and evaluated by the authors. In this study, the authors utilize our framework to develop and assess decision tree (DT)-based random forest (RF) and support vector machine (SVM) learning models for diabetes prediction, which are the most widely used techniques in the literature at the time of writing. It is proposed in this study that a unique intelligent diabetes mellitus prediction framework (IDMPF) is developed using machine learning. According to the framework, it was developed after conducting a rigorous review of existing prediction models in the literature and examining their applicability to diabetes. Using the framework, the authors describe the training procedures, model assessment strategies, and issues associated with diabetes prediction, as well as solutions they provide. The findings of this study may be utilized by health professionals, stakeholders, students, and researchers who are involved in diabetes prediction research and development. The proposed work gives 83% accuracy with the minimum error rate.




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Breast Cancer Detection with Revamped Dataset Using Machine Learning Techniques

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Machine learning is a current topic of interest in research and industry, with the implementation of novel strategies all the time. The main purpose of this research activity is to determine the efficiency of machine learning techniques in the detection research of breast cancer. The incidence and mortality of breast cancer in women are increasing day by day. Worldwide, researchers have worked hard to help clinicians provide the best model for detecting diagnosis and breast cancer. In this work, learning UCI machine Wisconsin breast cancer data from a set of databases, model, and analyze the performance of existing work use, compared to the same data set. The dataset is analyzed, and the revamped dataset is constructed by eliminating redundant features and appending new features essential for prediction. Logistic regression, K nearest neighbors (KNN), support vector machine (SVM), decision trees, random forest, XGBoost, using a machine learning algorithm, such as re-organized data set of artificial neural network AdaBoost, 8 one of prediction build the model application (ANN). Standard to analyze the accuracy rate. In the experiment, these classifications have been shown to work for breast cancer with >97% accuracy. Logistic regression, XGBoost and Adaboost, stand on top with 99.28 percent accuracy. The experiment also, the balanced data set of removal outliers and balance, shows that have a significant impact on the model's prediction performance.

Keywords: Breast Cancer Classification, Machine Learning, Wisconsin Breast Cancer Dataset.

1. INTRODUCTION

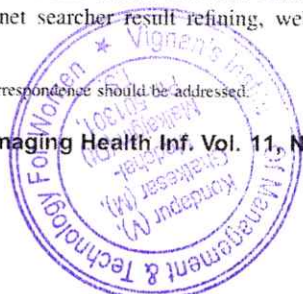
Big data information is an immense volume of information that can perform. It has been a subject of specific worry in recent years due to the astonishing capacity hid in it [1]. Manual understanding of particularly gigantic information becomes monotonous interaction, and subsequently, computerization becomes obligatory to change the crude information into important data. The prescient display is considered the canny center system in business settings [2]. The medical care area is one such space where prescient demonstrating is utilized to anticipate the danger of patients dependent on their clinical records. For forecast, factual strategies, for example, AI and information mining, are utilized to break down the current and recorded information. Information mining is a methodology applied to gigantic information archives to extricate valuable data though AI gains from Training the information, on account of anticipating the obscure information [3, 4].

The capability of AI, an unimaginable advancement, is demonstrated by review sophistications in everyday life. To refer to not many uses of AI like online extortion identification, item suggestions, internet searcher result refining, web-based media

administrations and the rundown develops dramatically [5]. The various uses of AI draw huge consideration from clinical professionals and analysts to control the enormous volume of electronic well-being records. Conclusion and result expectation are two regions that may profit from ML procedures in the clinical field. It includes the probability of perceiving raised danger for patient conditions, such as weakening in well-being or progressing to another infection [6].

The diverse learning standards with AI are Supervision, reinforcing learning and unaided [7]. In regulated learning, the idea of the obscure yield is relied upon to learn by the named informational collection model. Arrangement and relapse issues go under directed learning. Arrangement issues manage to anticipate discrete worthwhile nonstop information is anticipated by relapse issues. In unaided learning, the model isn't given a named dataset. Rather, it examines the basic example and predicts the yield. In support of learning, a specialist, for all its endeavors, is remunerated for progress and punishment for disappointment. In this way, the specialist gains from the climate. The impossible to miss normal for the AI model is that if the expectation turns out badly, the information expert can step in and make adjustments. Another model is called the profound learning model, a subset of the AI model, wherein a calculation will settle on its own whether the expectation is right with its neural organization.

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Improved Priority-based Congestion Control Protocol for Multi-Access Edge Computing (MAEC) Using IoT-based Wearable Devices for Neurological Diseases Diagnosis

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Abstract

Stroke is one of the fatal diseases that affect the brain and causes death within 3 to 10 hours. However, most of the deaths caused by a stroke can be avoided with the identification of the nature of stroke and react to it in a timely manner by intelligent health systems. Internet of Things (IoT) has become an important aspect in medical industry for monitoring of stroke related data/information using various wearable devices. Moreover, Multiple-Access Edge Computing (MAEC) is playing a major role for processing, analysing, and storing of data which leads to several researchers to compete in improving the mechanism of congestion control. In this paper, an improved Priority-based Congestion Control Protocol (iPCCP) is proposed for obtaining increased throughput, decreasing delay, effective resource utilization, and longer network lifetime by optimal energy consumption among IoT based sensor nodes. The proposed method categorizes the data-traffic into emergency and normal data. The packet delivery rate is considered for the normal data-traffic and retains the size of the buffer to improve the throughput and avoids the packet drops due to congestion. The energy consumption and network traffic load is reduced using the data aggregation and filtration technique. For emergency situations, priority-based routing scheme is used to have greater throughput and lesser delay. The performance of the proposed technique outperforms in term of traffic load, lifespan, energy consumption, and network throughput and simulation results are compared with other existing methods to show the improvement of the proposed work.

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Key Words: Internet of Things (IoT), Stroke Data, Edge Computing, Congestion Control, Network Traffic, Multi-Access Edge Computing (MAEC).

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Introduction

Currently, the global population is facing a serious problem of increasing healthcare issues. One of the major issues is the emergence of stroke disease.

Stroke, also commonly referred to as Brain Attack, is caused by the lack of blood supply to some parts of the brain.

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Analysis of Leakage Power Optimization Techniques for VLSI Applications

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Abstract: Power dissipation has become one of the VLSI circuit structure's significant worries with the fast launching of battery worked applications. In high-performance structures, the leakage segments of power consumption are equivalent to the switching segment. This will keep incrementing with innovation scaling, except if effective procedures are introduced for controlling the leakage. This paper gives a thorough report, examination, and correlation of leakage power reduction systems and techniques. Additionally, the advantages and disadvantages of different strategies for decreasing leakage power are introduced. These methods can be stretched out to any complex advanced digital implementation.

Keywords: Leakage/ Spillage Power reduction, CMOS circuits, Leakage/Spillage current, MTCMOS

I. INTRODUCTION

With the ongoing developments in VLSI innovation, transistors' requests in Integrated Circuits are yet developing, which requests costly cooling and bundling advancements. Subsequently, because of this, the supplied voltages are downsized for diminishing the power dissipation. Be that as it may, scaling of supply voltage has brought about an exponential increase in sub-threshold leakage current, causing static (spillage) power dissemination. In the present life, the primary spotlight is on low power gadgets on account of development in mobile devices; and however, even before the introduction of mobile devices, power dispersal was an endless issue. Higher power utilization prompts lower execution and reliable quality of the circuit. There are numerous strategies to lessen the leakage power. Static power constitutes about half of the all-out power utilization in the present high-performance chips. As per the need, a decrease of leakage power is the way into a low force VLSI plan.

$$P_{leak} = I_{leak} * V_{DD}$$

Where,

I_{leak} - When the transistor is OFF, the Spillage current which streams in it.

V_{DD} - Voltage supplied

P_{leak} - Power leaked

The leakage current is directly proportional to the leakage power. Therefore I_{leak} must be reduced to get reduced leakage power P_{leak} . The leakage power commands the dynamic power, especially in crucial VLSI circuits and what's more in the circuits that leftover parts in the inertly mode for an extended time, for example, cell power. In real life, every application draws out the battery life anyway. With a developing pattern towards portable computing and remote communication, power dissemination has turned out to be one of the most basic components. In this way, the primary spotlight is on the decrease of leakage power.

As the technology pattern took another stage, leakage power expanded exponentially with more transistors' reconciliation on the substrate. The leakage power is said to be that static force scattered when there is no useful outcome from the current or when the circuit is out of gear state. When gate voltage (V_g) in the transistor is lower than the V_{th} , i.e., threshold voltage, the transistor can't be totally turned off, which prompts little current flow called **leakage current**. The key sources of leakage/spillage current in CMOS transistors are as follows:

1. Reverse-biased junction leakage current
2. Gate induced drain leakage
3. Gate-direct tunneling leakage
4. Subthreshold (weak inversion) leakage current

The sub-threshold current flow stream is considered the most supernatural among all the spillage current flow sources, which ends up going after exploring in the present and future silicon advancements. This paper gives a comprehensive



IMPLEMENTATION OF SDR BASED PASSIVE BISTATIC FM RADAR

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Abstract

This paper illustrates a prototype of Passive Bistatic Radar (PBR) system that uses FM radio transmitter as the Source of Illuminator. Software Defined Radio (SDR) approach is used to simulate and implement the Radar. SDR Board is used to receive the direct signal and the reflected signal from the target by means of Yagi-Uda Antenna. Signal processing operations are performed offline over the direct and reflected signal in order to detect the presence of the target and estimate the target range and speed. In order to analyse the performance of the proposed SDR based passive bistatic radar, MATLAB simulation is used with predefined target settings

Keywords:

Passive Bistatic Radar, Source of Illuminator, Software Defined Radio

1. INTRODUCTION

Passive radar is a type of bistatic radar that uses a commercial transmitter and a dedicated receiver in order to form a bistatic pair. Passive Radars use the illuminators of opportunity like Commercial TV, FM, and GSM transmissions for the detection and estimation of targets [1]. This type of radar has no dedicated transmitter and hence does not require frequency allocation. The passive radar exploits common RF energy transmitted from commercial transmitter and the RF energy reflected by the target in order to extract the range and Doppler information about the target.

In the proposed work passive bistatic radar is implemented using FM signals [2]. FM signals are preferred as they constitute adequate power needed for detecting the targets from the reflected signals and also there are plenty of FM stations available for experimentation. Software defined radio-based approach is used to implement the proposed passive radar [13]. Software radios represent a major change in the design paradigm for traditional radios in which large portion of functionality is implemented through programmable digital signal processing devices, giving the radio the ability to change its operating parameters to accommodate new features and capabilities [14]. A software radio approach reduces the content of radio frequency (RF) and other analog components of traditional radios and emphasizes digital signal processing to enhance the overall receiver flexibility [15].

Universal Software Radio Peripheral (USRP) is a low-cost hardware platform used to develop software-defined radios [3]. USRP architecture consists of a motherboard which includes subsystems like clock generation and synchronization, FPGA, ADCs DACs, host processor interface and power regulation [16]. FPGA is used to baseband signal processing after converting the signal from Analog to Digital format. Before ADC, analog operations like up/down-conversion, filtering, and other signal conditioning operations are performed using RF front-end, called a daughterboard [17]. Daughterboards are available in various

frequency ranges which permit the USRP [4] to support applications operating between DC and 6 GHz [18]-[20].

In the proposed work, two USRP boards (B200 Series) are used to receive the FM signal reflected from aircraft and to receive a copy of transmitted FM signal simultaneously. Yagi-Uda antenna is used to receive signals owing to its high gain and directivity, in order to receive a strong directional component of reference signal.

2. SYSTEM SETUP

The setup consists of two USRP boards (B200 Series) and two Yagi-Uda antennas. The USRP B200 platform supports frequency coverage from 70 MHz – 6 GHz. It has fully integrated single board architecture. The advantages of B200 include low cost SDR development with 56 MHz of real-time bandwidth, an open and reprogrammable Spartan6 FPGA, and fast and convenient bus-powered Super Speed USB 3.0 connectivity. The Fig.1 represents the USRP B200 series used to receive the FM signal. The Table.1 lists the features of B200 series.

Table.1. Features of USRP B200

Sl. No.	Features
1.	RF coverage from 70 MHz–6 GHz
2.	GNU Radio, C++ and Python APIs
3.	USB 3.0 SuperSpeed interface
4.	Standard-B USB 3.0 connector
5.	Flexible rate 12-bit ADC/DAC
6.	Grounded mounting holes
7.	1 TX & 1 RX, Half or Full Duplex
8.	Xilinx Spartan 6 XC6SLX75 FPGA
9.	Up to 56 MHz of instantaneous bandwidth
10.	USB Bus powered

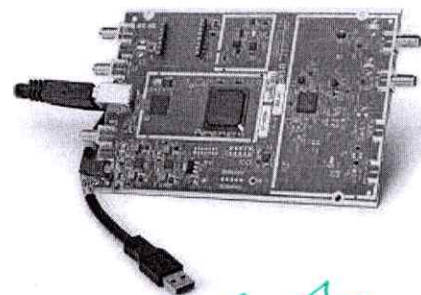


Fig.1. USRP B200 Series

The block diagram of passive bistatic FM radar system is shown in Fig.2. One of the antennas connected to the USRP board

A Review on 5G Communication

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Abstract—5G (Fifth generation) stands for the next major phase of mobile telecommunications standards beyond the current 4G/IMT-Advanced standards. As the expectation of the public increases with the advancement of the technology comes into picture, the services that can be obtained using the telecom networks have widened. Applications such as High-speed internet, Internet of Things, critical communications etc. the telecom network needs to support high data rate, low latency, reliability etc.

5G has speeds further what the present 4G can provide. From generation 1G to 2.5G and from 3G to 5G this world of telecommunication has seen a number of advancement along with improved performance with every passing day from IMT 2020, there are several requirements from the users and network side, which has to be supported in 5G to support the use cases. To fulfill the requirement, several technologies are being considered in 5G.

Key Words: 5G, Advancement, Requirement, Latency

I. INTRODUCTION

After every 10 years, new mobile generation has come since the first 1G (generation) system which came in 1982. After 10 years, the next generation which was introduced is 2G in 1992 and the first 3G system introduced in 2001. 4G system was introduced in 2012. The development of GSM that is 2G and CDMA i.e. 3G were officially done about 10 year after all the R&D projects where done.

We have observed remarkable growth of cellular communication over the radio. With ever-increasing subscriber base and limited radio resource, providing quality telecom services became difficult. These issues led mobile service providers to research into technologies and improve the quality of service and be able to support more users in their systems. Wireless communication networks have become much more pervasive than anyone could have imagined when the cellular concept was first deployed in 1960's and 1970's. Mobile cellular subscribers are increasing by more than 40% per year. Therefore Cellular communication has been continuously evolving into newer forms. Radio technologies have evidenced a rapid and multidirectional evolution with the launch of the analogue cellular systems in 1980s.

[1] Thereafter, digital wireless communication systems are consistently on a mission to fulfill the growing need of human beings (1G to 4G, or now 5G).

1G: 1G is the 1st generation. It is simply used to make phone calls; this is all it was able to do.

2G: The second generation provided customers with the facility of voice calling and text messaging. 2G networks are digital.

3G: This technology sets the standard for most of the wireless networks. Third generation allowed the use of internet on the mobile phone, while also enabling picture-sharing and Bluetooth Connectivity.

4G: It offers first true internet broadband data transmission rates. Its data transmission rates are 10 times faster than 3G technology.

5G: 5G will be the network for millions of devices and not just for the smart phone. It promises to enable fast (and secure) connectivity between devices other than smart phones, such as sensors, vehicles, robots, and drones. It will have data speed up to 1 to 10 Gbps. [1]

S.N	Mobile Technology in India	Frequency bands in India	Operators
1	GSM(2G)	900 MHz, 1800 MHz	Airtel, Idea-Vodafone, BSNL
2	CDMA	850 MHz	Reliance, BSNL, Tata
3	WCDMA(3G)	2100 MHz, 900 MHz	Airtel, Idea-Vodafone
4	WiMAX	2300 MHz	BSNL
5	4G LTE	1800 MHz	Airtel, Idea-Vodafone, Jio
		850 MHz	Jio
		2300 MHz	Airtel, Idea-Vodafone, Jio
		2500 MHz	BSNL, Idea-Vodafone

Figure 1: Different frequency bands in India

5G SPECIFICATIONS

PARAMETER	SUGGESTED PERFORMANCE
1. Network capacity	10,000 times capacity of current network.
2. Peak data rate	10Gbps
3. Cell edge data rate	100 Mbps
4. latency	<1 ms

Table 2: 5G wireless performances



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LITERATURE REVIEW ON DATA COMPRESSION TECHNIQUES USING LOSSLESS ALGORITHM

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ABSTRACT

With the contemporary design regard to shift in a chip enlargement the amount of processing elements, high-bandwidth [1] hold-up in on-chip linkage is indispensable for low-speed communication. Utmost of the preceding work hived on architectures of router and webbing topography using broad buses. Although such results may proceed in a complex router planning and cost. In this report, we utilize a table-based information technique of compression, depending on a design value in traffic hoard. Compressing huge packet into a little one can enlarge the effectual of routers bandwidth and connection, while preserving power due to decrease in performance. The foremost challenges are furnish a scalable execution of tables and reducing high up of the compression speed .Initial, we present a split table scheme that requires one encrypting and one decrypting tables for every transforming element, a regulation protocol that does not need orderly delivery. Then, we present smooth encrypt that merge flit inoculation and encrypting in a conduit. Moreover, compression of data can be particular applied to transmission on overfull paths only if compression enhances performance. Simulation outcome in a CMP 16-core exhibit that our consolidation technique increases packet speed to 44% with the mean of 32% and turn down the webbing consumption of power by 44% medial.

KEYWORDS: on-chip, communications, data compression, lossy , lossless data communication

I. INTRODUCTION

Data compression method is a low cost method, for enhancing speed [2] and bandwidth [3] with in specified architecture. Reducing redundancy information permits to be saved in less physical bits and to be sent in less cycles across a fixed number of busses. To reduce the bandwidth and storage capability of digital modules data compressions algorithms play a important role. Lossless compression algorithms are essential in communications systems. Lossy compression is a approximation technique well suited for audio and video applications. Basically lossy compression system will produce higher compression rate compare with the loss less data compression but it nowhere related to source data. lossy compression [5-8] method advised globally for H.264 [4] and JPEG etc applications. Conventionally loss less data compression technique is applied where data content does not change in information across any stage like compression and decompression. Loss less data compression method play a critical role in research to manage the data base information, binary data, text, html data where compression and decompression application required at source, destination end. Loss less data compression



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Comparative Analysis on Machine Learning Techniques: A case study on Amazon Product Reviews

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Abstract:

With the digitization of the entire world, e-commerce and online shopping become more popular among the customers. Drastic change in shopping style develops the need of e-commerce sites. This proliferation of customer's interest to check the particular product review before buying the products leads to the sentiment analysis. Sentiment analysis is the analysis of customer's opinion using natural language processing. Customer reviews should be analysed properly to provide correct suggestions to the customers. This paper aims to classify Amazon product reviews for electronics parts into two categories as positive and negative by using different machine learning algorithms such as Support Vector Machine (SVM), Naïve Bays (NB), Logistic Regression (LR), Decision Tree (DT), Random Forest (RF) and Stochastic Gradient Descent (SGD). The analysis shows the logistic regression having highest accuracy of 83.89% and decision tree has lowest accuracy of 73.3%.

Keywords: E-commerce, Customer Reviews, Exponential, Sentiment analysis, Natural Language Processing

1. Introduction

Nowadays, more and more people are using the internet and turning towards online shopping. Due to that many e-commerce websites are developed such as Amazon, Flip cart, Myntra and so on. All these sites provide the facility of giving feedback on the product. Customers can share their experience about the product in terms of reviews and ratings. This feedback is utilized by the customers and businesses in order to understand their customer choice and business. Depending on those different strategies are developed to increase the sale and get more profit. These customer's feedback or reviews are used by the other customers to buy the particular product. So that the customer reviews should be analyzed properly to get insight from it, this process is called as sentiment analysis. Sentiment analysis or opinion mining play a vital role in text mining using natural language processing.

As the businesses are completely switched to online mode, customers are exchanging items through various business sites. Therefore, evaluating items before purchasing is a critical situation. So, breaking down the information from those text reviews and extract the useful data to get benefit is



Design of DGS Printed Antenna for Surface Ship Radar Applications

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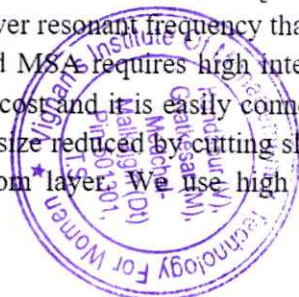
Abstract- In this paper proposed dual layer single coaxial feeding DGS printed antenna by cutting some slots from the patch and adding some slits with the patch. It is the very easiest design to achieve our desired application for which it is designed. We compare the proposed antenna with the conventional design and the proposed structure gives a 49.82% size reduction with compare to the conventional antenna. In this paper we analyze the gain, bandwidth, return loss for the desired proposed structure. The proposed structure designed with the help of IE3D electromagnetic solver which uses the Method of Moment (MoM) based analysis. The proposed structure simulated results are verified by a measurement which is carried out by VNA network analyzer. In this paper, proposed design achieved multiple resonant frequencies and they are applicable for different microwave band applications. As per the concern of 1st resonant frequencies, the proposed structure applicable for surface ship radar applications.

Index Terms- Layer, Edge, DGS, Patch, Slot, Return Loss.

I. INTRODUCTION

To increase the demand on printed antenna with Defective Ground Structure (DGS) among microwaves engineers [1], we choose size reduced antennas. The reason behind choose the antennas, it consume less space, more effective, movable and robust free to any surface. But there will be certain disadvantages like- low gain and low power handling capacity [2-5]. But we use the printed antenna so there will be some disadvantages but due to miniature size it is very helpful for any application. The microwave engineer demand is to use one antenna for different application and the printed antenna satisfies their demand. Rather than printed antenna there are some other antennas are also there like: DRA and fractal antennas [14-19]. Due to the size reduction property, the proposed antenna will give lower resonant frequency than conventional antenna structure [6-8].

Printed MSA requires high interest during research because the antenna having small dimension with low cost and it is easily connected with any microwave monolithic integrated circuit [9-10]. The antenna size reduced by cutting slots and adding slits with the patch at proper place from top as well as bottom layer. We use high dielectric constant for getting high size reduction in



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A NOVEL MECHANISM OF SMART IOT BASED AGRICULTURE CROP PROTECTION USING IR SENSORS

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ABSTRACT

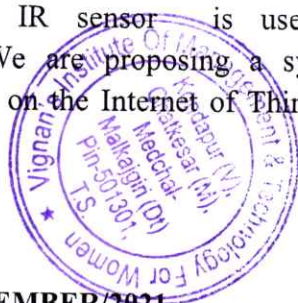
Agriculture is the fundamental part in the improvement of horticultural nation. In India around 70% of masses depends on developing and 33% of the nation's capital starts from developing. In this paper we are giving a successful answer for agriculturists. Without any human interpretation the warding off the animals over their crop fields and orchards can be controlled, and the protection of the crop fields is done by using some consequently controlled ultrasonic creature repellent ringers, IR Sensor and Raspberry pi this system is been used. It will likewise empower them to remotely screen their fields from wherever, in this manner taking out the need of physical nearness of a man in the fields. Raspberry pi goes about as the mind of the framework. Its work is to deal with every one of the parts of the framework. It is in charge of the preparing the video nourish from the camera and programmed exchanging of the ringers. It will likewise empower the ranchers to screen their fields remotely. An IR sensor is used to environment We are proposing a system which is based on the Internet of Things to

protect the crops from animals. IR Sensor, which continuously works in the fields for any animal activities. This component is assisted with the cameras which provides higher accurate levels. If the camera fails this IR sensor acts as the backup .It provides a message alert system to the owner when animals entered in to the farms.

Keywords: *Agriculture, IOT, IRsensor, Embedded systems*

1. INTRODUCTION

The main objective of the paper is to protect the crops by using IOT[2][3] For that we designed a project smart crop protection system. By using this paper the problems what our farmers are facing by the attack of the wild animals on to the farms are been eliminated. Whenever animal attack on their field's automatically the system captures the image send to the farmer. The problems which are been faced by attack of the wild animals on to the agriculture fields i.e.farms damage is been a very big problem in many of the states, such as himachal pradesh, haryana, Punjab and many more states. The crop vandalization is caused mainly by eating off the flowers, plants and fruits of



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DIFFERENTIATING AND SHORTLISTING UNAUTHORIZED EXTREMIST REVIEWS

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ABSTRACT

Customer feedback is the key behind firms such as Google, Amazon's success. The quality and service of marketing are increased when the customer's input on a product is analyzed. Customers and companies know the benefits and the downsides of the product through reviews from online shopping sites (like Amazon). Sentiment analysis is one and only of the NLP's key responsibilities (Natural Language Processing). In recent years, sentiment analysis has gained a lot of attention. This paper addresses one of the core difficulties of sentimental analysis: the difficulty of sentiment-polarity classification, a generic approach for sentiment polarity classification is presented. Sentiment Analytics, sometimes referred to as Opinion Mining, is a prevalent study field for the extraction of subjective information by analyzing textual data provided by people who execute the duties of Natural Language Processing (NLP). Online artifact reviews collected from Amazon.com are the data recycled in this study. Tests are being undertaken with encouraging results, both for categorizing sentences and for categorizing reviews. Finally, our future work on sentimental analysis will also be inspired. In this case study we consider whose data point review is 4 and 5 as positive, 1 and 2 as negative review and reaming reviews we simply drop it. After that we can build the machine learning models like NB, Logistic Regression and RF models.

Keywords: *Sentiment analysis, Classification, Machine Learning, NLP, RF, Logistic Regression, NB, Classification.*



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CORONARY ARTERY DISEASE DETECTION USING GRADIENT BOOSTING CLASSIFIERS

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Abstract:

Heart disease, alternatively known as cardiovascular disease, indicates various conditions that impact the heart and is the primary basis of death worldwide over the span of the past few decades. There are different kinds of heart disease. The most common types are heart failure (HF) and Coronary Artery Disease (CAD). The major cause of heart failure (HF) is due to the blockage or narrowing down of coronary arteries. Coronary arteries also supply blood to the heart. CAD is a prevalent kind of heart disease and well-known source of heart attacks in the world. According to WHO, nearly 20 million people die of Heart failures, particularly heart attacks and strokes, every year. Globally many persons are facing Cardiovascular diseases (CVDs) and many deaths are occurring due to lack of identification in initially stages and nearly 17.9 million deaths occurring every year. As Cardio vascular is a combination of disorders to the heart blood vessels which includes Rheumatic, cerebrovascular heart disease and other conditions. In every 4 out of 5 heart deaths are due to sudden stroke or heart failures, and one third of these deaths occur prematurely in people under 70 years of age. A. Javeed et al., uses Random search algorithm & optimized Random Forest for the detection of heart disease. In the process of detecting Heart disease, Diagnostic system is used. They compared with different types of techniques which are used in Machine Learning. In the proposed system, it is intended to improve the Heart Disease detection by using gradient boosting technique.

Keywords— Machine Learning, Prediction, Classification

Technique, Heart Failure (HF), Coronary Artery Disease (CAD), Cardiovascular Diseases (CVD) Random Forest, Gradient Boosting Technique.

I. INTRODUCTION

Now a days ML is widely for various diseases prediction accurately with provided and trained datasets. This paper provides is a study of Predictive Analysis of Heart Disease Based on Gradient Boosting Technique. As cardiovascular disease is the kind of disease which can cause the emergency if not predicted early. Many people are losing their life's due to false predictions and later stages predications. As heart disease is a defect related coronary decency which can be occurred due to various reasons in the heart like weakened walls, blockages, insufficient blood supply to arteries. To make a better and faster analysis now days Machine learning (ML) a branch of artificial intelligence (AI) is increasingly utilized within the field of cardiovascular medicine for better, faster and accurate analysis. Machine learning is a method of data analysis that automates analytical model using a set of algorithms which are performed automatically with provided user data. As ML is one of the sections of artificial intelligence which provides a series of steps through which user interacts with training and learning of datasets, various patterns of datasets to make automatic decisions with minimal human intervention. Now a days ML is widely used in many applications such as medicine, Statistics, Agriculture, Aviation, Speech Recognition etc., Through various ML Conventional Algorithms all industrial and other sectors data is used to perform needed tasks automatically without maximum user

IMAGE QUALITY RECONSTRUCTION USING SUPER RESOLUTION METHOD

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Abstract:

OCT (optical coherence tomography) images relies on interferometry, which explains images suffer from a high level of noise. Noise in image is any degradation in an image signal, caused by external disturbance while an image is being sent from one place to another place via satellite ,wireless and network cable. Image noise is an undesirable by product of image capture the desired information. In existing system, A super resolution algorithm can be used to generate a high resolution image or image sequence .The algorithm has been proposed to estimate sparse co-efficient using joint MAP estimator. A non local sparse model-based Bayesian framework is proposed for OCT restoration. The laplacian distribution, normalized vectorand GEV distribution is used for best good fit for modeling super resolution method is not fast as MAP solution. In proposed system, To overcome the existing drawback on single super resolution algorithm we are going to explore multi frame super resolution to gain more improvement in reconstruction quality. A multi frame super resolution produces a superior quality, high resolution image from multiple numbers of blurred noisy low resolution images.

Keywords— *Multi-frame MAP Estimator, Image registration, MAP Estimator, Optical Coherence Tomography, SR Super Resolution.*

I. INTRODUCTION

Image Restoration can be defined as the process of removal or reduction of degradation in an image through linear or non linear filtering. Images with higher resolution are required in most electronic imaging applications such as remote sensing, medical diagnostics, and video surveillance. For the past decades, considerable advancement has been realized in imaging system. However, the quality of images is still limited by the cost and manufacturing technology [1]. Super-resolution

(SR) is a promising digital image processing technique to obtain a single high-resolution image (or sequence) from multiple blurred low-resolution images. The basic idea of SR is that the low-resolution (LR) images of the same scene contain different information because of relative subpixel shifts; thus, a high-resolution (HR) image with higher spatial information can be reconstructed by image fusion. Subpixel motion can occur due to movement of local objects or vibrating of imaging system, or even controlled micro-scanning [2, 3]. Numerous SR algorithms have been proposed since the concept was introduced by Tsai and Huang [4] in the year of 1984. Most of them operate in batch mode, i.e., a sequence of images are co-processed at the same time. Thus, these algorithms require a high memory resource to store the LR images and temporary data, and need a high computing resource as well. These disadvantages limit their practical application. There are a variety of SR techniques, including multi-frame SR and single-frame SR. Readers can refer to Refs. [1, 5, 6] for an overview of this issue. Our discussion below is limited to work related to quality multi-frame SR method, as it is the focus of our paper.

II. LITERATURE SURVEY

The basic assumption for increasing the spatial resolution is the availability of multiple LR images captured from the same scene [5]. The LR images represent different “looks” at the same scene so LR images are sub sampled as well as shifted with sub pixel precision. If the LR images are shifted by integer units, then each image contains the same information and thus there is no new information that can be used to reconstruct an HR image. If the

AGGREGATION TECHNIQUE TO INTEGRATE TEXTURE AND MOTION FEATURES FOR TRAFFIC DATA

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Abstract

Large cities contain millions of people that use different means of transportation, including buses, taxis, motorcycles, and bicycles. The transportation infrastructure in large cities cannot accommodate the continued growth in the number of vehicles, which leads to traffic congestion. To overcome the congestions, a Traffic monitoring system includes automated traffic monitoring systems (TMS) that analyze images/videos captured by closed-circuit television cameras to detect the status of traffic (e.g., light, medium, or heavy) and measures traffic flow. Traffic congestion classification approaches can be categorized according to the features they utilize as a motion-based and texture-based method. The texture-based method evaluates texture features by Deep residual learning method. The extracted texture features evaluate in each batch of frames using a representation learning method called learning-to-rank (LTR). The motion-based method extracts sparse corner points in each batch of frames is extracted and tracked to obtain motion trajectory features. The features obtained are employed to construct a classifier based on an SVM (support vector machine) to classify traffic congestion into three classes of light, medium, and heavy. The Existing work, Largely depends on texture and motion features such systems face several challenges including illumination changes caused by variations in weather conditions, the complexity of scenes, vehicle occlusion, and the ambiguity of stopped vehicles. The texture and motion features are extracted for the feature extraction task. The LTR (learning-to-rank) method captures the latent structures and SVM (support vector machine) to classify traffic congestion. The Proposed work focus on improving the performance of texture and motion features by additional traffic congestion datasets with varying scenes. In addition, employ different aggregation techniques to integrate texture and motion features to improve the accuracy of traffic congestion classification results.

Keywords—Intelligent transport system, CNN -Convolutional neural network, KNN -K-nearest, neighbor, Support vector machine, DBN - Deep belief network, Artificial intelligence, Recurrent neural network, Deep neural network

I. INTRODUCTION

The rapid growth of the urban population and motor vehicles has led to a series of traffic problems. Intelligent transportation systems (ITSs) are considered the best tool to solve these



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PULMONARY IMAGE CLASSIFICATION WITH APPROPRIATE NEURAL NETWORK SELECTION AND ENSEMBLE LEARNING

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Abstract:

Classification at a medical diagnosis is a complex process that is extremely error prone. Since medical imaging is a major contributor to the overall diagnostic process, the Chest X-ray film is the most widely used and common method of clinical examination for pulmonary nodules. However, the number of radiologists obviously cannot keep up with this outburst due to the sharp increase in the number of Infectious Diseases, which is also a major potential source of diagnostic error. The existing system using inception-v3 transfer learning model to classify pulmonary images, and augmented the data of pulmonary images, then used the fine-tuned Inception-v3 model based on transfer learning to extract features automatically, and used different classifiers (Softmax, Logistic, SVM) to classify the pulmonary images. In the proposing system the classification of Pulmonary Images and the performance can be increased by the study of appropriate neural network selection and by using ensemble learning. The ensemble technique performs better on benchmark datasets than other state-of-the-art methods.

Keywords: Prediction, Classification Technique, Pulmonary Image Technique, Inception v3, Deep Convolution Neural Network, Data Augmentation, Ensemble Learning, Machine Learning,

I. INTRODUCTION

Now a days machine learning is widely used for various diseases prediction accurately with provided and trained datasets. This paper provides is a study of Predictive Analysis of Pulmonary nodules Disease Based on study of appropriate

neural network selection and by using ensemble learning. As our proposed pulmonary image classification based neural network selection using VGG_16 Model, Inception_v3, ResNet50 and VGG19. Nodule detection is an acute pulmonary infection caused by bacteria, viruses, or fungi that infects the lungs, producing inflammation of the air sacs and pleural effusion (fluid in the lung). It is the cause of over 15% of all deaths in children under the age of five.[21]. Lung infections are more common in undeveloped and underdeveloped countries, where overcrowding, pollution, and unsanitary environmental circumstances worsen the problem, and medical resources are limited. As a result, early detection and treatment can help prevent the disease from progressing to the point of death. The use of computed tomography (CT), magnetic resonance imaging (MRI), or radiography (X-rays) to examine the lungs is commonly employed for diagnosis[23,24,25]. X-ray imaging is a non-invasive and painless method of obtaining information. Figure 1 displays an example of a lung X-ray with a damaged and a healthy lung. Infiltrates, or white patches on the Lung X-ray Chest X-ray exams for infection identification, on the other hand, are vulnerable to subjective variability [2, 3]. As a result, an automated technique for detecting Nodules Infection is necessary. We created a method based on deep learning methods for dealing with such automation difficulties in this research. The most extensively used and common type of clinical assessment for pulmonary nodules is a chest X-ray film.

SECURED MULTIKEYWORD SEARCH OVER ENCRYPTED CLOUD DATA BASED ON ATTRIBUTE BASED

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Abstract:

Searchable encryption permits to upload encrypted documents to a remote honest-but-suspicious server and query that data at the server without the papers having to be decrypted first. With the advent of cloud computing, data owners are encouraged to move their sophisticated data management systems from local sites to commercial public clouds for greater flexibility and cost savings. However, in order to safeguard data privacy, sensitive data must be encrypted before being outsourced, rendering traditional data utilization based on plaintext keyword search outdated. As a result, implementing an encrypted cloud data search service is critical. Given the huge number of data users and documents in the cloud, it is critical for the search service to support multi-keyword queries and result similarity ranking in order to meet the effective data retrieval requirement. In this paper propose the Secured Multikeyword Search over Encrypted Cloud Data, which is based On Quality and Usability of cloud data transmission and storage. Further we used triple DES (Data Encryption Standard) Algorithm of encryption and decryption key for secure authentication process. Here we used different key sizes are used in cryptographic process. Our analysis shows that the suggested approach is secure against adaptive chosen-keyword attacks. This solution is highly efficient and ready to be applied in real-world cloud storage systems.

Keywords— cloud, encryption, Machine Learning, Standard Hilbert curve, Secured Multi keyword search.

I. INTRODUCTION

Searchable Encryption enables querying of encrypted data in the cloud without decryption. Nonetheless, due of the fundamentally dissimilar relationship between the variables, most SE solutions are focused on SQL queries and cannot readily be applied to spatial data. In order to enable query services on encrypted spatial data, space

filling curves have commonly been used to convert the original positions of POIs to one-dimensional index values. A space filling curve is one that crosses across every partition of a closed space without intersecting itself [1 and 2]. In this method, each point in multidimensional space will be mapped as a value to one-dimensional space. The standard Hilbert curve (SHC), a sort of space filling curve, is employed as a building block in many schemes for spatial data processing, which can protect the confidentiality of outsourced geographical data and enable successful spatial enquiries. Using the transformation key and the original geographic query, users can create query tokens to search across the encrypted spatial data [3]. As a result, fine-grained verification capability authorization is supported, which means that only users whose verification structure matches the permitted region can validate the query result [4]. Cloud storage is a computer data storage system that stores digital data in logical pools known as "the cloud." Physical storage is frequently distributed over multiple servers (potentially in different locations), and the physical environment is typically owned and maintained by a hosting company. Companies only need to pay for the storage they use, which is usually an average of consumption over the course of a month. This is not to say that cloud storage is less expensive; rather, it has ongoing costs rather than upfront expenditures [5]. A spatial database is one that is designed to store and query data that represents objects specified in a geometric space. The depiction of simple geometric objects such as points, lines, and polygons is supported by the majority of spatial databases. Some spatial databases are capable of handling more complicated structures such as 3D objects,

IMPROVEMENT OF NOISE REMOVAL AND QUALITY OF UNDERWATER IMAGES USING SUPER RESOLUTION METHOD

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Abstract

Enhancing underwater images in epicontinental sea is a challenging problem owing to the influence of ocean currents, the refraction, absorption and scattering of light by suspended particles, and the weak illumination intensity OCT (optical coherence tomography) images relies on interferometry, which explains images suffer from a high level of noise. Noise in image is any degradation in an image signal, caused by external disturbance while an image is being sent from one place to another place via satellite, wireless and network cable. Image noise is an undesirable by product of image capture the desired information. In existing system, A super resolution algorithm can be used to generate a high resolution image or image sequence. The algorithm has been proposed to estimate sparse co-efficient using joint MAP estimator. A non local sparse model-based Bayesian framework is proposed for OCT restoration. The laplacian distribution, normalized vector and GEV distribution is used for best good fit for modeling super resolution method is not fast as MAP solution. In proposed system, To overcome the existing drawback on single super resolution algorithm we are going to explore multi frame super resolution to gain more improvement in reconstruction quality. A multi frame super resolution produces a superior quality, high resolution image from multiple numbers of blurred noisy low resolution images

Keywords— underwater image enhancement; dark channel; improved algorithm; RGB color space, SR Super Resolution.

I. INTRODUCTION

Image Restoration can be defined as the process of removal or reduction of degradation in an image through linear or non linear filtering. Images with higher resolution are required in most electronic imaging applications such as remote sensing, medical diagnostics, and video surveillance. For the past decades, considerable advancement has

been realized in imaging system. However, the quality of images is still limited by the cost and manufacturing technology [1]. Super-resolution (SR) is a promising digital image processing technique to obtain a single high-resolution image (or sequence) from multiple blurred low-resolution images. The basic idea of SR is that the low-resolution (LR) images of the same scene contain different information because of relative subpixel shifts; thus, a high-resolution (HR) image with higher spatial information can be reconstructed by image fusion. Subpixel motion can occur due to movement of local objects or vibrating of imaging system, or even controlled micro-scanning [2, 3]. Numerous SR algorithms have been proposed since the concept was introduced by Tsai and Huang [4] in the year of 1984. Most of them operate in batch mode, i.e., a sequence of images are co-processed at the same time. Thus, these algorithms require a high memory resource to store the LR images and temporary data, and need a high computing resource as well. These disadvantages limit their practical application. There are a variety of SR techniques, including multi-frame SR and single-frame SR. Readers can refer to Refs. [1, 5, 6] for an overview of this issue. Our discussion below is limited to work related to quality multi-frame SR method, as it is the focus of our paper.

II. LITERATURE SURVEY

The basic assumption for increasing the spatial resolution is the availability of multiple LR images captured from the same scene [5]. The LR images represent different "looks" at the same scene, so LR images are sub sampled as well as shifted with sub pixel precision. If the LR images are shifted by

MEDICAL IMAGE DATA CLASSIFICATION THROUGH KERNEL DENSITY ESTIMATION

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Abstract:

Consider the data/datasets are everywhere to define. Time aware search using queries results the best understanding of temporal data. Time aware kernel Estimation describes about the word temporal predictor to characterize the word-level temporal relevance by fine-grained time-aware kernel density estimation over the datasets and to capture the temporal relevance of query word that was made. The Kernel density defines as it results the predicted data in the form of histograms that was a form of analysis which shows the predicted data of the EHR data search. It mainly consists the word level temporal prediction of past experiences with an incompletely known system to predict future behavior. The effectiveness and robustness proposed by the temporal predictors as time aware to analyze chronic diseases using EHR data. As the growth of chronic diseases, The health care growing parallel. This can elevate visualization, accuracy and effectiveness by considering the chronic disease data analysis time to time. It can be defined as word-level temporal relevance of data from the information and to make kernel density estimation for better effective and the accurate results.

Keywords— Medical image classification, pre-trained DCNN, convolution neural network, big data, image analysis, image enhancement, biomedical image processing, deep learning

I. INTRODUCTION

Artificial Intelligence (AI) is an important field of computer science which thriving enormous research hotspots and applications. AI is an attempt of human intelligence and generates intelligent machines that process information. Its main agenda is to cultivate brain-like machines [1]. AI has been part of many fields like robotics, NLP (Natural

Language Processing), Expert-System, Image Processing, etc. Machine Learning (ML) is act as a core for AI and comprises different kinds of disciplines like convex analysis, approximation, probability and complexity theory. Machine learning technology provides computers the capability to computations without any pre-programmed. In order to improve performance of a computer, Machine Learning utilizes induction as well as synthesis concepts [2]. Machine Learning technology implemented in different kinds of fields especially diagnosing diseases and bioinformatics. Machine and Deep learning technology plays a vital role in computer field and it act as an expert for predictions and making decisions. Deep learning technology is a kind of machine learning technology [3]. These technologies used to extract the data and process for as per requirements. The fundamental idea of Deep learning is to acquire data representations by improving abstraction levels. Different kinds of architectures for deep learning have proposed including Convolutional Neural Network (CNN), Deep Auto-Encoder, Deep Neural Network (DNN), etc. [4]. Image processing is the growing concept in medical field. Image processing delivers significant information on decision making. Different kinds of steps are followed on medical field before obtaining output [5]. Medical image is given as input to the deep learning and it is partitioned into segments in order to concentrate on important area. Next those segments are used to extract significant information with the help of information retrieval techniques[6]. Then the required features are obtained without noise by using noise removal



Article

Photooxidation of 2,2'-(Ethyne-1,2-diyl)dianilines: An Enhanced Photocatalytic Properties of New Salophen-Based Zn(II) Complexes

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Abstract: Under solvothermal conditions, the Zn(II) complexes formed from salophen-based ligands with N and O donor atoms are reported. These Zn(II) complexes were initially confirmed through elemental analysis and supported by mass spectral data. The purity of the ligands and Zn(II) complexes was confirmed by using NMR spectral studies. The functional group complexation was established by FT-IR analysis. Additional supportive information about the complexes is also reported through molar conductance and thermal studies. The bandgap energies of the ligands and Zn(II) complexes are estimated with UV-visible DRS studies. The rate of recombination of hole–electron pairs is directly related to photocatalytic activity, which is confirmed by using emission spectral analysis. The surface metaphors for ligands and complexes are obtained from FESEM analysis. These new sequences of Zn(II) complexes were used for the photooxidation of 2,2'-(ethyne-1,2-diyl)dianiline and its derivatives. Mechanistic studies on the fast degradation of dyes were supported in the presence of several scavengers. The rapid photooxidation process in the presence of [Zn(CPAMN)] has been demonstrated, and a highly efficient photocatalyst for the photooxidation of 2,2'-(ethyne-1,2-diyl) dianiline has been proposed. Furthermore, the experimental findings are supported by the DFT studies.

Keywords: Zn(II) complexes; DFT calculations; photocatalytic oxidation; rate of recombination; surface area; 2-(2-nitrophenyl)-3H-indol-3-one



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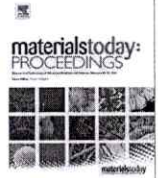
1. Introduction

The coordination chemistry of transition metal complexes has been the subject of broad study in the past few decades. Moreover, metal–Schiff base complexes have continued to enjoy extensive magnitude owing to their structural diversity and potential applications in pharmacology and catalysis. Most of the studies have aimed to understand the role of M(II) cations in many metalloenzymes in terms of structure–function relationships [1]. The importance of transition metals in several biological systems [2] has motivated the study of the complexes of Zn(II) ions. Studies on lower/higher oxidation state complexes are of special importance because of their potential uses as oxidizing agents, catalysts [3–5] and electro-catalysts [6,7] for the oxidation of compounds such as alcohols, esters and water [8,9]. M(II) complexes with various Schiff base ligands play an important role in coordination chemistry, and a recognized Schiff base ligand is a salophen kind [10], with a bi-functional and tetradentate (-ONNO-) ligand. Some asymmetric salophen kinds of Schiff's base were described by R. Atkins [11] in 1985, who suggested a wide-ranging term for salophen kinds of tetradentate (-ONNO-) ligands. Because of the aromatic ring's substitution and outline hydroxyl group, salicylaldehyde and its analogues are suitable as building blocks for salophen-based ligands. As soon as the azomethine group is formed between the aldehyde and the primary amine, the alignment of the salophen kind of



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journal homepage: www.elsevier.com/locate/matprOptical properties of PMMA and PVDF-HFP blend with NaClO₄ saltMaheshwar Reddy Mettu^{a,b,*}, Mallikarjun A^{c,d}, Jaipal Reddy M^e, Siva Kumar J^a^a Department of Physics, Osmania University, Hyderabad, 500007, India^b Department of Science and Humanities, Sreenidhi Institute of Science and Technology, Hyderabad, 501301, India^c Department of Physics, Jawaharlal Nehru Technological University, Hyderabad, 500085, India^d Department of Physics, Vignan's Institute of Management and Technology for Women, Hyderabad, 501301, India^e Department of Physics, Palamuru University, Mahabubnagar, 509001, India

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ABSTRACT

The poly(methyl methacrylate) (PMMA), pure poly(vinylidene fluoride) (PVDF-HFP), and NaClO₄ salt were used to prepare the blend thin films by solution casting procedure. By using the UV-Visible spectrophotometer optical absorption properties of this prepared film were recorded. The direct and indirect optical energy gaps for these thin films were estimated using Tauc's plots from the UV-visible spectra and found that increasing NaClO₄ salt content in PMMA + PVDF-HFP blend the absorption edge and indirect band gap energy values were found to be decreased.

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1. Introduction

The variety of electrochemical devices, such as electrochemical cells, rechargeable batteries, sensors, and super capacitors has been widely recognized and intensively explored. Polymer electrolytes are attracting attention in electrochemical cells because of their unique attributes such as their electrical and resistive qualities. In recent years, most researchers focused on Polymers and their systems such as PMMA, PAN, PVDF-HFP, PEO, and PVC, were used for battery application [1]. The majority of these polymers have poor mechanical strength and conductivity. Thus blending two or more polymers is a good strategy to improve their mechanical strength and electrical-conductivity. Ionic salts such as Mg, Na, Li, Cd, etc., were added to polymers, or their blending exposed to achieve higher ionic conductivity [2–7]. PMMA is a one of the most favourable polymer in polymeric materials. There have been numerous proposals for its use as a dielectric in Organic Thin-Film Transistors (OTFTs), optical lenses in cameras, and optical fibers [8–10]. Because of its extreme transparency, PMMA is being explored as a possible alternative to glass [11]. In the present investigation PMMA has been used as a host polymer because of its higher stability and lower reactivity towards electrodes.

PVDF-HFP used as co-polymer, which has a suitable matrix to crosslink with other polymers and leads better ionic conductivity.

2. Experimental

PMMA polymer (M.W. 1,20,000 CAC: 9011–147), PVDF-HFP polymer (M.W. 4,00,000 CAC: 14283–07–9), and additional materials such as NaClO₄ were used in this study, all of which were purchased from Sigma Aldrich. Merck Millipore, Germany provided a solvent, THF (EMPARTA-AR grade).

In this research work, without additional purification, PMMA, PVDF-HFP, the inorganic salt sodium perchlorate (NaClO₄), and the solvent tetrahydrofuran (THF) were used in this study. The solution casting process was used to create PMMA:PVDF-HFP + NaClO₄ polymer electrolyte films [12,13]. To achieve a homogeneous mixture, different weight ratios of NaClO₄ and PMMA:PVDF-HFP blend polymers were added separately in THF, then stirred for 24 h at room temperature. The solution was then placed onto a Petri plate and allowed to evaporate at ambient temperature for several hours. After that, samples were vacuumed for 24 h to remove any remaining solvent. This method produced mechanically stable and self-supporting films and the compositions that have been prepared are given in Table 1.

The absorption properties of a specific sample reveal the nature of the material resistance to the incoming light when compared to a reference sample [14]. The ultraviolet absorption spectra were

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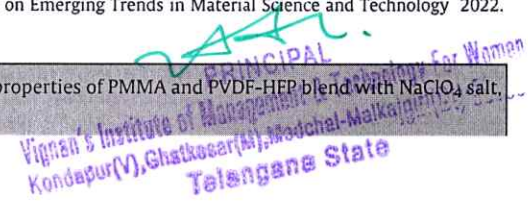
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Investigation of Mg²⁺ Ion on Structural, Morphological, FTIR, Dielectric and AC Conductivity of PVDF-HFP Based Solid Polymer Electrolytes and Application to Electrochemical Cell

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Abstract—In this paper, solid polymer electrolytes comprising of poly(vinylidene fluoride-co-hexafluoropropylene) and Mg(ClO₄)₂ were prepared by employing the solution casting technique. The fabricated polymer-salt electrolyte membranes are exposed to XRD, FTIR and SEM studies, which confirm amorphous phase and the presence of interlinked micro-pores promote for easy mobility of Mg²⁺ ions that enhances ionic conductivity. The real and imaginary parts of dielectric permittivity are illustrated with the Cole-Cole plot. Static dielectric constant ϵ_s , dynamic dielectric constant ϵ_∞ , dielectric strength $\Delta\epsilon$, dielectric loss ($\tan\delta$) and relaxation time τ are determined using the Cole-Cole plot, which attributes fast hopping of ions from one site of the polymer chain to another for optimal concentration of polymer electrolyte. The electrochemical properties, such as cell discharge characteristics and cell stability (cyclic voltammetry), are analyzed to favor an electrochemical membrane for battery applications. The activation energy of all the samples is estimated from the DC conductivity data. The frequency-dependent ionic conductivity follows Jonscher's power law, and the exponent "n" shows a dominant long-range pathway and diffusion requisite hopping process for ion transport in polymer electrolytes.

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INTRODUCTION

Solid-state electrochemical cells have high demand at present in modern technology. It has been developed by modifying the polymer electrolytes to enhance conductivity and stability at ambient temperature for potential applications and in energy storage devices. In the process of developing good ionic conductive polymer electrolytes, plasticizers are used which are made of complex polymer electrolyte like PEO/PC/EC/lithium, PAN-PC/EC-LiClO₄, PAN-PC/EC-LiCF₃SO₃, PAN-PC/EC-LiAsF₆, and PMMA-PC/EC-LiAsF₆ [1–4]. These complex composite solid polymer electrolytes have potential advantages over conventional solid polymer electrolytes as they exhibit better mechanical strength, higher ionic conductivity, and better temperature stability. Major research work is carried out with various lith-

ium salts LiX (X = I, Cl, Br, ClO₄, CF₃SO₃, BF₄, AsF₆, PF₆, etc.) of low lattice energies dissolved in high molecular weight solid polymer electrolytes. Despite Li-ion salt complex composite structured polymer electrolytes, the magnesium-based salts are used, and prepared to attain good mechanical strength, temperature stability, and high ionic conductivity. Mg²⁺ ion-based polymer electrolytes are of low cost, easy to handle, and have a divalent cationic conductivity mechanism. Besides, magnesium-based batteries are safe and reliable for electric vehicles and domestic applications. The battery performance of magnesium ion electrolytes is very close to lithium ion but avoids explosive hazards that occur in lithium ion batteries [5, 6]. The Li-ion is monovalent but the Mg-ion is divalent in nature. Even Mg is a relatively earth-abundant material, cheaper, lightweight and environ-



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Impedance spectroscopy and electrochemical cell studies of Mg^{+2} ion conducting with dispersed ZrO_2 nano filler in PVDF-HFP based nano composite solid polymer electrolytes

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ABSTRACT

Nano composite polymer electrolytes with different concentrations of ZrO_2 nanofillers added in PVDF-HFP: $Mg(ClO_4)_2$ are prepared using classical solution casting technique. The incorporation of ZrO_2 nanofillers into the PVDF-HFP: $Mg(ClO_4)_2$ improved conductivity by making more ions available for conduction. Electrochemical Impedance Spectroscopy was used to investigate the electrical conductivity, ohmic resistance (R_o), polarisation resistance (R_p), and Warburg impedance (W) to understand ion transportation behaviour. And the composition-dependent ionic conductivity was determined and the optimum found $\sigma_{ion} = 6.62 \times 10^{-2} S cm^{-1}$ at the PSZr12. The nanocomposite polymer electrolyte is used to prepare an electro chemical cell, and its open circuit voltage is found to be 1.8 V and its short circuit current is 180 mA.

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1. Introduction

Electrochemists are now working on high-performance electrochemical devices that can generate a large amount of power and energy. One of them is batteries that can store a large amount of energy, which has revolutionised future technological applications [1,2]. In comparison to lithium-based energy storage devices, magnesium is abundant in nature, and it is one of the competing elements to replace the use of lithium. It is a suitable element for the manufacture of solid polymer electrolyte materials. Flexibility, portability, and wearing electronic gadgets like a roll-up display and electro-chromic windows require a high demand for power sources like batteries, solar cells, and super capacitors. Other growing fields include smart electronics, RFID tags, wearable sensors,

and electric vehicles, which require polymer electrolytes in their respective power sources [3]. The PVDF-HFP polymer is utilised as a gelling agent and as an electrolyte in developing a solar cell, having good mechanical stability and piezoelectric breakdown voltage suitable for high harvesting applications [4]. Adding the necessary Mg-based salts or lithium salts transforms them into an effective ionic conductive polymer electrolyte in a quasi-solid state. Doping with appropriate nanofillers may raise the ionic and electrical conductivity of the solid polymer electrolytes [5]. Additionally, PVDF-HFP possesses a high dielectric constant, semi crystalline material it has high porous nature to observe more ionic salts [6] and an electron-sucking C-F group helps in the dissociation of salt. PVDF-HFP has high mechanical strength due to the unique characteristics of crystalline PVDF. In contrast, PVD-HFP has an amorphous nature with the HFP's unique amorphous characteristic, which is required for excellent ionic conductivity [7,8]. The ZrO_2 nanofiller has good chemical stability and corrosion

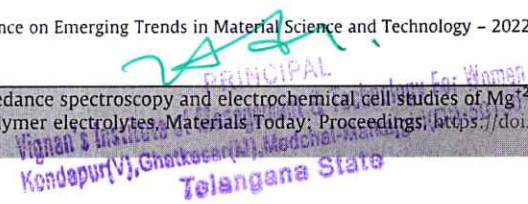
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A COMPREHENSIVE STUDY ON ROBUST LINEAR REGRESSION METHODS OF STATISTICAL OF HIGH-DIMENSIONAL DATA ANALYSIS

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Abstract

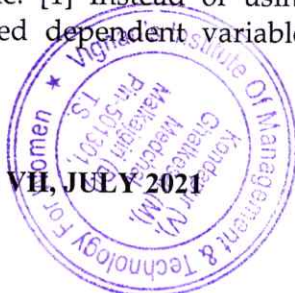
With the digitization of information as the process of translating it into numbers, the amount of measured variables grows larger. This eliminates outliers and observations with the underlying model, making it harder or impossible for the practitioner to find them. Outliers in classical least-squares methods can impact the results. Regression is accurate when parameter estimates are unbiased, as in this case. Regression models use robust regression to give weights to observations that are statistically distinct from the model. Regression techniques that have been around for robust-dimensional data for some time may be less well known for their applicability in the high-dimensional scenario. Diverse techniques to robust regression in the high-dimensional scenario have recently been developed, typically using dimension reduction, shrinkage, and their mixture. Down weighting individual cells in the data matrix instead of full observations is a relatively novel concept to make better use of model-consistent information to get higher-performing parameter estimates.

KEYWORDS

dimension reduction, high-dimensional data, Outlier, regression, sparsity

I. INTRODUCTION

When linear regression is applied, it's a linear relationship for predicting a single scalar response coupled with one or more explanatory variables (also known as dependent and independent variables). Multiple linear regression is used when there is only one explanatory variable case, but the technique is called simple linear regression for more than one. [1] Instead of using a multivariate linear regression to analyze several associated dependent variables, you use a technique predicted as singular value





A Novel Feature-Based SHM Assessment and Predication Approach for Robust Evaluation of Damage Data Diagnosis Systems

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Abstract

Structural Health Monitoring (SHM) involves periodic recording and analysis in buildings and infrastructure prone to face external forces, ambient vibration, or natural climate changes. The sensors which are mounted on each floor capture the vibrations and create data with various features. SHM is vital in tracking the rate of deterioration of a structure and detecting damage, thereby maintaining safety. Feature selection, which indicates the process of choosing attributes in the dataset that can provide the best possible output accuracy, plays an important role in the analysis of a Damage Diagnosis system. The present paper proposes to use a combination of Mutual Information and Rough Set Theory for feature selection. After that, the paper proposes the hybrid technique of Support Vector Machine and Artificial Neural Network for increasing prediction accuracy. Comparison with various other commonly used techniques shows that the proposed approach provides a better classification accuracy.

Keywords Neural networks (NN) · SVM (Support vector machine) · ANN (Artificial neural network) · Mutual information (MI) · Rough set theory (RST) · Data mining (DM) · Feature selection (FS)

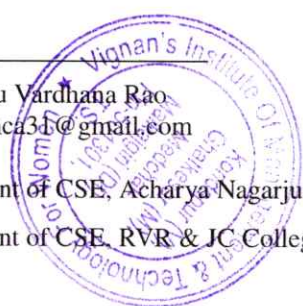
1 Introduction

Buildings over time are prone to deterioration due to various factors like environmental changes, natural disasters, strength and quality of materials used in manufacturing, etc. For the longest time, damage assessment for buildings has been done manually through visual inspection. As the number of buildings continues to rise, it has become increasingly important to be able to periodically assess the building's condition in order to detect any damage early and take appropriate measures [1]. With this continuous monitoring in mind, more and more buildings are incorporated with Structural Health Monitoring (SHM) systems.

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Original article

M. Ravindar Reddy, Anna Mallikarjun, M. Jaipal Reddy*, A. R. Subrahmanyam and M. Vikranth Reddy

Investigation of morphology and transport properties of Na⁺ ion conducting PMMA:PEO hybrid polymer electrolyte

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Keywords: conductivity; DSC; NaClO₄; PEO; PMMA; SEM; X-ray diffraction.

Abstract: The aim of this research work is to examine the modification of structure, morphology and conductivity properties of PMMA: PEO blend hybrid polymer electrolyte system complexed with NaClO₄ salt. Solution-cast procedure was adopted in preparation of these films. These films were characterized with XRD, SEM, DSC, and DC conductivity for the evaluation of modified properties. Peaks have disappeared and broadened in the XRD pattern of PMMA for higher concentration of PEO polymer and salt presented films, which indicated that attaining of higher amorphous phase in these polymer electrolyte films. Almost smooth surface morphology with fewer pores was observed in 20 wt. % of PEO and NaClO₄ salt present PMMA films of SEM image. This establishes a dominant presence of amorphous content in these NaClO₄ complexed PMMA:PEO hybrid electrolyte films when compared to pure PMMA and PEO. Disappearance of melting temperature was observed in all concentrations of NaClO₄ salt and PEO polymer added PMMA polymer films, which suggests a decrease of crystalline and an increase of amorphous nature. Enhancing of DC conductivity with temperature was observed in all the films but higher conductivity was exhibited at higher concentration of NaClO₄ salt present films.

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1 Introduction

There is a continuously increasing demand for solid state secondary batteries in the field of electronics to store electrical energy [1]. The use of liquid electrolytes instead of solid electrolytes may cause leakage, due to this fire and explosions occurs [2–4]. Some examples for solid electrolytes are based on Li, Na, Mg, etc. which are widely studied by many researchers and concluded that these electrolytes transport ions through polymer chains and block the diffusion electrons which deemed as one of the most part of crucial components for the high performance ionic rechargeable batteries [5–9], among these electrodes many researchers were used Li ions for battery applications but it has few limitations such as low lifetime, cost and poor low temperature performance to overcome these limitations Na ions were introduced [10] still need rectification. PEO polymer has considerable technical interest with various molecular weights and wide range of their possible applications in various devices because of its ionic transport mechanism [11, 12]. On the other hand PMMA has higher stability and strength compared to PEO hence which provide better strength to electrochemical cell and also PMMA polymer itself amorphous in nature hence electric conductivity appears mainly in amorphous regions [13]. PMMA and PEO have different chemical structures of different properties hence to obtain desired properties from their complex, blending of these two polymers [14] i.e., Polymer blending is a combination of two or many polymers with or without chemical bonding between them [15]. It was noticed that performance and stability of polymer electrolyte films enhanced through the process of polymer blending [16]. In the present study, polymer complex consisting of PMMA, PEO, and alkali metal salt of NaClO₄ is reported, and suitable technique for preparation of


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Design of fully homomorphic multikey encryption scheme for secured cloud access and storage environment

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Abstract

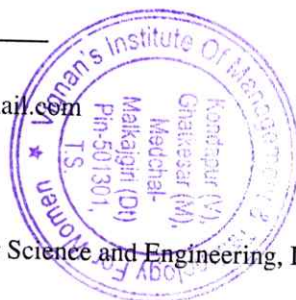
Cloud hosting is a kind of storage that enables users to access, save, and manage their data in a secure and private cloud environment. As a result of this choice, users are no longer need to maintain and build their storage infrastructure on their computers or servers. Many businesses are hesitant to embrace cloud storage because of the complexities of data privacy and security issues. An easy-to-use and secure method for cloud storage sharing and data access is proposed in this study, which may be implemented quickly and easily. This solution requires users to have a secure password and biometric data in order to function properly. Their capacity to deceive consumers into disclosing critical information to their service providers is the primary reason for this problem. Cloud storage systems must have a secure framework in place in order for users to connect to and interact with one another. Many benefits of cloud storage exist, including enabling users to store and manage their data in a safe environment. Users can regulate and manage their data security while using cloud storage services. While implementing a safe and authenticated data storage model, this article addresses the different elements that must be taken into consideration. Several procedures have been established to deal with this problem. Unfortunately, they are not sufficiently secure to prevent a wide variety of security intrusions from taking place on them. When encrypting stored cloud data, the Fully Homomorphic multikey Encryption (FHE) algorithm is utilized. They also have a vulnerability in their protocol that makes it susceptible to both user and serverside attacks. When it comes to remote access, cloud data and data sharing between geographically dispersed devices is a reliable protocol to use.

Keywords Cloud access · Storage · Data sharing · User authentication · Fully homomorphic multikey encryption

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Multi-Features Disease Analysis Based Smart Diagnosis for COVID-19

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Abstract: Coronavirus 2019 (COVID -19) is the current global buzzword, putting the world at risk. The pandemic's exponential expansion of infected COVID-19 patients has challenged the medical field's resources, which are already few. Even established nations would not be in a perfect position to manage this epidemic correctly, leaving emerging countries and countries that have not yet begun to grow to address the problem. These problems can be solved by using machine learning models in a realistic way, such as by using computer-aided images during medical examinations. These models help predict the effects of the disease outbreak and help detect the effects in the coming days. In this paper, Multi-Features Disease Analysis (MFDA) is used with different ensemble classifiers to diagnose the disease's impact with the help of Computed Tomography (CT) scan images. There are various features associated with chest CT images, which help know the possibility of an individual being affected and how COVID-19 will affect the persons suffering from pneumonia. The current study attempts to increase the precision of the diagnosis model by evaluating various feature sets and choosing the best combination for better results. The model's performance is assessed using Receiver Operating Characteristic (ROC) curve, the Root Mean Square Error (RMSE), and the Confusion Matrix. It is observed from the resultant outcome that the performance of the proposed model has exhibited better efficient.

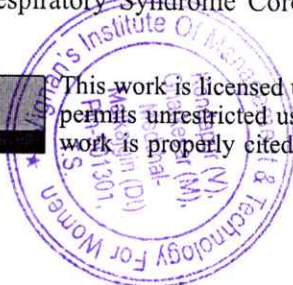
Keywords: Chest CT; COVID-19; classification; ROC curves; multi-feature disease analysis

1 Introduction

In December 2019, many cases related to pneumonia occurred in Wuhan city of China, and spread throughout the world [1,2]. It was found that severe acute respiratory syndrome coronavirus 2 (SARSCoV2) is the leading cause of the outbreak. This virus comes from the family of SARS and Middle East Respiratory Syndrome Coronavirus (MERS-CoV) [3]. These viruses are merely controlled



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Pragmatic Security-Aware Cross-Layer Design for Wireless Networks from Vampire Attacks

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ABSTRACT

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Keywords:

cross layer design, wireless networks, vampire attack, carousal and stretch attacks

Wireless networks rely on ad hoc communication in an emergency, such as a search and rescue or military missions. WLAN, WiMAX, and Bluetooth are often used in Ad Hoc networks. Using a TCP/IP wireless network poses several challenges. Packet loss in 802.11 may be caused by noise or the network. TCP/IP connects non-adjacent layers of the network, resolving cross-layer communication technology for cross-layer communication. It regulates data transmission energy. This structure solves an issue in various ways. It is often used to improve data transfer. Currently, the OSI reference model's layers and functions are not explicitly connected. Only DCL can send multimedia data via wireless networks. The research employs CLD to improve wireless security—invasions of ad hoc networks (MANETs). The research helps secure wireless MANs (MANETs), Vampire Attack Defense (VAP) algorithms. A Secure Cross-Layer Design SCLD-AHN protocol is included. The paper contributes to controlling security attacks in wireless Mobile Ad Hoc Networks (MANET's). In MANETs effectiveness of Vampire Attack Defense (VAP) algorithms is evaluated and analyzed. It also proposes a Secure Cross-Layer Design for the ad hoc networks (SCLD-AHN) protocol.

1. INTRODUCTION

Now people are widely using the Internet. It only takes a few seconds to send a text message. Other people can upload a video when alerted in microseconds. Even though in many places, Internet connectivity is weak, but the multimedia communications required. Sensor zones need communication between drones. The multimedia server has to make rescue operations, search activities, emergency usage in battle areas and meeting rooms. In the examples provided, everyone needs a node to collaborate. The ad hoc networks of two types Static and Dynamic. In static nodes, fixed called Static-Ad-Hoc-Networks (SANET). In dynamic AdHoc networks, the mobility of nodes (active nodes) happens called the Mobile Ad Hoc Network (MANET). In MANET, an individual node acts as a system and router. It can be deployed everywhere without infrastructure networks. These features make the AdHoc network ideal for situations such as search, rescue operations, combat areas and emergency use. It also challenges the MAC layer to communicate between transport and network layers of TCP / IP reference models [1].

The MANET faces many architectural issues, such as persistent link crashes. Several routing algorithms proposed to solve these problems. Here a couple of ways to manage ad hoc network routing protocols. The first is a proactive Destination-Sequenced Distance Vector (DSDV) routing protocol. The second is the reactive Optimized Link State Routing Protocol (OLSR). DSDV is an active routing protocol that uses the destination generated array number [2, 3]. It helps to identify the old ways. The OLSR prevalent link-state routing protocol overheads with a link table. In OLSR, delay and scalability are

low. Existing well-known algorithms are Ad hoc On-Demand Distance Vector (AODV) and Dynamic Source Routing protocols [4]. It searches for the route when needed. The primary use of a proactive routing technique is the scalability of nodes, but it leads to transmission delay. The IEEE 802.11 is standard for MAC layer and ad hoc networks, but Ethernets not ensembles in wireless environments. The IEEE 802.11 standard assumes error is minimal in wired, but in wireless links, it is very high [5].

On the other hand, two-layer security, power usage, and frequent connection breaking problems in Ad-hoc networks addressed. The Network, MAC Layers and Protocol Stack to address these issues. Issues such as power optimization and throughput improvement with energy control. Transmission of power is a significant issue in MANET for more performance. It is because it affects almost all layers. However, this requires cooperation between all layers. CLD manages to find the right resolution for optimization. The cross-layer design acts as intermediate to each layer to solve the problem [6]. The primary method of energy transfer proposed. In this case, the RTS-CTS sends the highest transmission power. The Data-ACC packets the packets to deliver the minimum required level.

The advantage of consumptive transmission control is that it optimizes power intake and increases capability. Energy requirements disturb layers transmissions. However, physical, MAC, and network layers play an important role in enhancing performance. Srivastava et al. [7] proposed the mechanism for interactions between the network, MAC and physical layers for cross-layer design. In wireless sensor networks, (WSN) power transmission utilized to solve energy issues in VANETs,

AI-Based Image Processing for COVID-19 Detection in Chest CT Scan Images

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ABSTRACT

Big data analysts and artificial intelligence experts are paying attention to the COVID-19 outbreak. The classification of computed tomography (CT) chest pictures as normal or diseased necessitates a large amount of data and an unique AI module design. By studying CT chest scan pictures, we present a platform that encompasses various layers of analysis and classification of normal and pathological characteristics of COVID-19. Specifically, the platform augments the training dataset with a reliable collection of photos, segmenting/detecting suspicious portions in the images, and evaluating these regions in order to return the correct classification. We also integrate AI algorithms after selecting the most appropriate module for our research. Finally, we compare the efficacy of our design to other strategies published in the literature. The collected findings indicate that the suggested design is 95% accurate.

COVID-19, corona score, medical imaging analysis, AI medical platform, deep learning, computed tomography, segmentation
Keywords: COVID-19, corona score, medical imaging analysis, AI medical platform, deep learning, computed tomography, segmentation

1 INTRODUCTION

Artificial intelligence has made a significant contribution to medical diagnostics and drug development. Artificial intelligence, according to experts, will have a significant impact by providing radiologists with tools to make faster and more accurate diagnoses and prognoses, resulting in more effective treatment. Because computers will be able to process massive amounts of patient data, big data and artificial intelligence will change the way radiologists work, allowing them to become experts on very specific tasks (Shen et al., 2017a). Artificial intelligence has already been successful in solving problems such as chronic illnesses and skin cancer (Esteva et al., 2017). Scientists now anticipate artificial intelligence to play a significant part in the hunt for a cure for the new corona virus, and therefore in reducing the terror that has gripped the globe.

Due to the COVID-19 pandemic, the health-care system has recently faced significant challenges in terms of supporting an ever-increasing number of

patients and associated costs. As a result, the recent effect of COVID-19 necessitates a mental change in the health-care industry. As a result, using current technology such as artificial intelligence in order to build and develop intelligent and autonomous health-care solutions has become critical. When compared to other viruses, COVID-19 is notable for its rapid dissemination, which allowed it to become a global pandemic in record time. The medical and health-care systems are still researching and analysing it in order to get more trustworthy information and obtain a better understanding of this critical issue of rapid spread. As a result, accurately simulating the COVID-19 transmission remains a top goal in the fight against this virus. The detection of viral RNA from sputum or a nasopharyngeal swab using real-time reverse transcription-polymerase chain reaction (RT-PCR) is now the most widely utilised diagnosing approach. These tests, on the other hand, need human interaction, have a low positive rate at early stages of infection, and may take up to 6 hours to provide findings. Thus, quick and early diagnostic tools are needed to speed up the control of this pandemic, particularly in the long run, when lockdowns are entirely removed, testing should be conducted on a broad scale to avoid the pandemic from resuming.

Due to a lack of resources and technology in certain nations, testing has been confined to individuals who have symptoms, and in many instances, several symptoms. It goes without saying that the enormous burden that the situation has placed on national health-care systems and personnel, even in the most industrialised nations, exacerbates the difficulty of recognising and monitoring potential cases.

Artificial intelligence algorithms, which are approaches used to implement AI systems, assist with a variety of pandemic-related questions, ranging from vaccine and drug development to tracking people's mobility and how and whether



MESSB–LWE: multi-extractable somewhere statistically binding and learning with error-based integrity and authentication for cloud storage

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Abstract

The concept of cloud envisioned cyber-physical systems is a practical technology that allows users to interact with each other while transferring data in the cloud. In cyber-physical systems, cloud storage utilizes data deduplication techniques to improve the performance of its applications. However, this method exposes sensitive data and causes security risks. Various research related to cloud storage has been conducted. Despite the advantages of this technology, it lacks the necessary security features and high performance. In the proposed method, a victim's virtual computer is moved to the cloud without interfering with the other processes running on the network. It protects against the attacks caused by encrypting the data with a cryptographically binding hash. Post-Quantum Cryptographic techniques, such as lightweight Multi-Extractable Somewhere Statistically Binding and Learning With Error authenticate data sharing protocols (MESSB–LWE), have been used. These allow for safe data sharing across geographically scattered physical devices and clients with lightweight concepts. The numerical analysis of MESSB–LWE is carried out in different stages, and the results show that it has incredible performance and practicality when compared to the literature. Finally, the authors have explored a couple of factors that should be considered for future research work in authentication for securing remote systems in the cloud environment.

Keywords Somewhere statistically binding · Learning with errors (LWE) · Cloud security

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Improved Priority-based Congestion Control Protocol for Multi-Access Edge Computing (MAEC) Using IoT-based Wearable Devices for Neurological Diseases Diagnosis

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Abstract

Stroke is one of the fatal diseases that affect the brain and causes death within 3 to 10 hours. However, most of the deaths caused by a stroke can be avoided with the identification of the nature of stroke and react to it in a timely manner by intelligent health systems. Internet of Things (IoT) has become an important aspect in medical industry for monitoring of stroke related data/information using various wearable devices. Moreover, Multiple-Access Edge Computing (MAEC) is playing a major role for processing, analysing, and storing of data which leads to several researchers to compete in improving the mechanism of congestion control. In this paper, an improved Priority-based Congestion Control Protocol (iPCCP) is proposed for obtaining increased throughput, decreasing delay, effective resource utilization, and longer network lifetime by optimal energy consumption among IoT based sensor nodes. The proposed method categorizes the data-traffic into emergency and normal data. The packet delivery rate is considered for the normal data-traffic and retains the size of the buffer to improve the throughput and avoids the packet drops due to congestion. The energy consumption and network traffic load is reduced using the data aggregation and filtration technique. For emergency situations, priority-based routing scheme is used to have greater throughput and lesser delay. The performance of the proposed technique outperforms in term of traffic load, lifespan, energy consumption, and network throughput and simulation results are compared with other existing methods to show the improvement of the proposed work.

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Key Words: Internet of Things (IoT), Stroke Data, Edge Computing, Congestion Control, Network Traffic, Multi-Access Edge Computing (MAEC).

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Introduction

Currently, the global population is facing a serious problem of increasing healthcare issues. One of the major issues is the emergence of stroke disease.

Stroke, also commonly referred to as Brain Attack, is caused by the lack of blood supply to some parts of the brain.

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An Efficient Data Mining Technique for Structural Strength Monitoring System

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ABSTRACT

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Keywords:

classification, classifiers, clustering,
structure strength, integrators

A fundamental target of strength monitoring frameworks for different structures is to analyze the condition of the structure and to assess its conceivable danger and furthermore to investigation, identification, and characterization of danger in complex structures is a critical part of auxiliary strength checking. The capacities are browsed as lexicon of time-recurrence movement and scaled variants of a basic Gaussian hypothesis work. This word reference is likewise adjusted to utilize genuine estimated information. Characterization is then accomplished by coordinating the removed damage includes in the time-frequency. In this paper, we utilize our model to assess our information mining approach for the fault checking. The balanced scratch-off and high-pass sifting strategies are consolidated adequately to take care of basic issues in numerical reconciliation signs gathered from sensors are disintegrated into direct blends of very confined Gaussian capacities utilizing the coordinating significance decay calculation. The combination exactness is enhanced and contrasted with former numerical integrators. Rough set analysis uses only internal knowledge and does not rely on prior model assumption as fuzzy set methods or probabilistic models do. In this manuscript a novel hybrid algorithm combining the features of Rough set Support vector machine (Rs-SVM) classified structures and Rough set Artificial Neural Network (Rs-ANN) classified structures are used. At long last the vertices of the structure of different types are connected and analysed by the Hybrid algorithm and furthermore to additionally enhance order execution, the data gathered from numerous sensors is incorporated utilizing a Bayesian sensor combination approach.

1. INTRODUCTION

Auxiliary vibration control and Basic Structure Strength Monitoring (BSSM) innovations are worried about the security of structures. The first issue in BSSM is to locate the basic danger and its area by playing out some factual example knowledgments on the deliberate information named as feature extractions. The danger caused by ecological burdens ought to be fixed; else it will develop with time and may prompt aggregate framework disappointment [1]. Dynamic parameters like increasing velocity, velocity, and dislocating assume a vital job in deciding the structure elements. Particularly on account of scaffolds, removal is an essential data. Customary uprooting sensors are hard to introduce on extensions and can't be valuable particularly amid a seismic movement [2]. Another detecting technique is the Global Positioning System (GPS). Be that as it may, its use is influenced by terrible climate, electromagnetic commotion, Wireless systems are utilized to keep away from the incredible expense of customary conventional anxious frameworks.

The BSSM of tall structures for the most part utilizes vibration information [3]. The danger represents the progressions of auxiliary parameters, for example, the firmness and damping coefficients [4]. Just couple of research utilized an information mining procedure on BSSM. Support Vector Machine is a profoundly attractive order technique, since it offers a hyper plane that speaks to the biggest partition (or) edge between the two classes [5]. Notwithstanding, it

needs to settle quadratic programming (QP) with the end goal to discover a partition hyper plane, which causes an escalated computational complicated nature.

Rough Set Theory (RST), which developed in mid 1980's, is the ongoing scientific tools which is having its significance to information procurement and grouping through AI, Feature supportive networks, inductive thinking and so forth. One prime preferred position of RST is that it needn't bother with any sort of primer data about the example informational collection for example likelihood appropriation, measured likelihood task and so forth. A technique for decreasing ordered information is to utilize the geometric properties of SVM. In computational geometry, various calculations are known for figuring the curved structure for a limited arrangement of focuses [6]. By utilizing a nonconvex disaster work, it shapes a nonconvex SVM [7]. Be that as it may, some great properties of SVM, for instance, the most extreme edge, can't be ensured, in light of the fact that the crossing point parts of informational indexes are not fulfilled curved conditions [8].

Utilizing the RST lessens the properties for SVM activity. Rough Set Theory is one of information mining strategies which lessen the highlights from enormous quantities of information [9]. Utilizing RST needs to fabricate the choice table or the data table. The idea of Rough Set hypothesis depends on the supposition that with each object of the universe (U) there is related a specific measure of data (information, learning), communicated by methods for certain

AN EXPERT WEAPON IDENTIFICATION IN SECURITY SYSTEMS WITH CONVOLUTION NEURAL NETWORK (CNN)-BASED SSD AND FASTER RCNN ALGORITHM

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Abstract-

Because of an increase in crime rates during crowded events or maybe secluded places, security is always a top priority in any profession. Computer vision may be used to solve a wide variety of difficulties, including the identification and monitoring of irregularities. Because of the growing demand for safety, security, and personal property protection, video surveillance systems that can recognise and understand scenes and anomalous occurrences are becoming increasingly important in intelligence monitoring. In this article, a convolution neural network (CNN)-based SSD and faster RCNN algorithms are employed to achieve automated gun (or) weapon identification. The suggested approach makes use of two datasets. One dataset contains pre-classified photos, whereas the other contains images that have been manually categorised. However, practical usage of the results is contingent on a trade-off between speed and accuracy, which both approaches accomplish.

Keywords--Firearm identification, computer vision, quicker RCNN, SSD, CCTV, and Artificial Intelligence (AI).

I. INTRODUCTION

Weapon detection, also called anomaly detection, is the identification of irregular, unexpected, unpredictable, or unusual occurrences or things that are not judged to be a regularly occurring event or a regular item in a pattern or items included in a dataset, and consequently diverge

from present patterns. A pattern that departs from a set of typical patterns is referred to as an anomaly. As a consequence, anomalies are impacted by the phenomena of interest [3] [4].

Object detection distinguishes instances of different types of



Storage and Security Issues of Medical Images using Cloud Platform

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Abstract: In this current era of technology people are interested more in online medical facilities for more faster and comfortable life. Because of huge demand, health care field is growing rapidly. The data in the form of x-rays, diagnosis reports, MRI images, videos is generated. Such form of data consumes large amount of storage space and processing power, therefore nowadays alternate solutions such as cloud storage are used to store such huge data. As the medical data in the form of images or videos is very important and confidential it is very crucial to concentrate on the issues like storage and security. The proposed work discuss about the image security techniques like watermarking using different types combined with data encryption techniques during transmission so as to ensure better security along with reduction in cost for storage with the use of cloud environment. In this study, we offer a deeper insight into the challenges hindering the adoption of this technology. Then we analyze and compare these findings of the cloud based medical image process implementation with security necessities.

Index Term: Image security, Watermarking, Health care ,transmission

I. INTRODUCTION

In the supportive associations field, recuperating picture planning through cloud will show to be a standard blueprint. As a last resort masters are benefitted as it gives epic pictures through which end should be conceivable with exactness and better treatment can be given through chronicled data and current data which will be investigated. In like way, this new perspective licenses empowered exertion between helpful associations specialists planned at better places.

Removing the distinctive perfect states of passed on getting ready, moving towards cloud a risings faltered troubles.

In such way, security and affirmation are the standard obstructive fragments for the wide confirmation of healing picture getting ready over virtual stage. Starting at now, different executions are proposed pointing towards the advantages of this new perspective.

Common pictures hold tight in progress data structures, cloud or elective systems are of key criticalness. Affirmation and security must be

protected for such pictures through encryption and underwriting structures. Mixed and watermarked pictures during this required to be reversible in like way the plain picture handled inside the encoding and watermarking structure will be absolutely redeemable. In this paper, we will if all else fails undertaking an absolutely redeemable mixed and watermarked picture process system for the insistence of helpful pictures in progress data structures. The methodology is used to endure observer to and secure the accommodating pictures. Our results showed up, obviously, to be terribly reasonable and strong for completely recoverable pictures.

In the power disclosures the symmetric encryption figuring is proposed in which the riddle key is passed on from the patient individual data what's more watermarking is created for underwriting.

II. CLOUD SYSTEM ARCHITECTURE

The proposed system consists of the cloud architecture as shown in the figure 1 ,that describe some problem and it consist of four parts

- 1) IaaS that is the Infrastructure as a service
- 2) The Proxy service
- 3) The Server meant for security
- 4) Entry

1. IaaS

The IaaS is answerable for data accumulating and search segments. In any case, ethically the cloud organization supplier should not be empowered access to the information changed or hold tight inside the cloud. In these conditions, it is definitely not a clear task to develop a cloud based help that has server viewpoint data amassing and looking frameworks.

CREATION OF SYNTHETIC DATA OF CHEST X-RAYS FOR DETECTION OF COVID-19 USING UNETGAN

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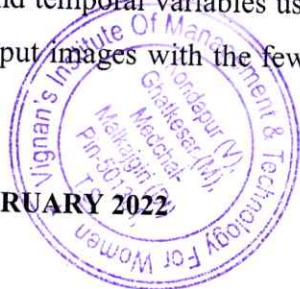
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ABSTRACT: People began exploring using available chest x-ray images of lungs in 2019, when COVID-19 began spreading as a viral infection over the world. However, the research paper discovered that the available photos are limited, and the majority of the symptoms are comparable to pneumonia sickness. So, before completing the multiclassification procedure, this study aims to increase the dataset size by merging the UNET with cyclic GAN's. The majority of real-world data is in an unbalanced state, which has an impact on the design's overall architecture and performance. Many researchers have used manipulation techniques such as translation, rotation, and others to increase dataset size, but these fundamental and easy procedures have little effect on the model due to the high dimensionality of medical pictures. By executing segmentation utilising the UNET operation, the improved cyclic GAN's mechanism aids the research article in creating a balanced dataset with a greater number of augmented or reconstructed CXR images.

Keywords: Cyclic GAN, Semantic Segmentation, UNET's, Up-Down sampling, Cycle Consistency, Contraction and Expansion Path

INTRODUCTION:

For the past few years, CNN has been the most often used word by most researchers, industry professionals, and other significant AI figures. CNN is a deep learning method for distinguishing between different input items based on the weights applied to them in a prioritized order. The fundamental benefit of artificial neural networks is their ability to recognize relationships between spatial and temporal variables using various types of filters. Any network's main goal is to interpret the input images with the fewest amount of trainable parameters possible. In a real-



MANET Energy Efficient Multi-Path Routing using Ant Colony Optimization and Binary Particle Swarm Optimization

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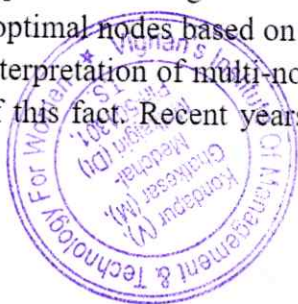
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Abstract: The MANET is a network of autonomous mobile devices that are wirelessly connected to one another. Because of their high energy consumption, the nodes in this network have a short life expectancy compared to other networks. When it comes to extending the life of a network, optimization approaches are often used. The optimization techniques of Ant Colony Optimization (ACO) and Binary Particle Swarm Optimization (BPSO) are merged in this study to develop an ACO: BPSO hybrid strategy that is designed to extend the lifespan of the network by increasing its density of ants. The ACO assists nodes in transitioning from ACTIVE to SLEEP state. With the use of the NS2 simulator, it was discovered that the proposed method outperforms existing strategies in terms of throughput, PDR, and residual energy.

Keywords — Energy efficiency, ACO, PDR, MANET, Optimization, BPSO

I. INTRODUCTION

The fact that MANETs do not have a defined network means that they are nothing more than a collection of self-routing devices that link to one another and to the rest of the world. In the absence of a centralized authority, people are more likely to depend on their neighbours to interact with one another and create social groupings. Because of the mobility of the devices, the topology changes over time. The energy consumption of a device is more important in multi-hop networks than it is in mobile networks, which is the norm. However, even if energy economy is an important issue, the routing mechanism should also be taken into account in terms of the session's overall reliability and scalability. In many situations, the energy of mobile devices is required in order to ensure that the connection is stable and that continuous communication may continue indefinitely without interruption. Because the most energy-efficient route is selected, the routing strategies that are used contribute to a reduction in energy consumption. Most routing systems choose nodes that are the minimum feasible hop distance apart from one another based on the protocol they are using. Many current network optimization algorithms, such as those described in [1, 2, and 3], are focused on selecting optimal nodes based on the amount of residual energy that is present in the network. A valid interpretation of multi-node route selection as an optimization problem may be made in light of this fact. Recent years have seen an explosion of novel optimization approaches



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Diabetes Prediction using Machine Learning Techniques

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Abstract:

Diabetes is a disease that develops as a result of a high glucose level in the bloodstream of a person. A person's diabetes should not be disregarded; if left untreated, diabetes may lead to serious health complications in the long run. Such as heart disease, renal disease, high blood pressure, and so on it may cause eye damage and can also have an impact on other organs in the human body. Diabetes may be managed if it is identified and treated early on. In order to accomplish this is the objective during this project's effort; we will look at early diabetes detection. In a human body or on a patient in order to get more precision Different Machine Learning Techniques are being used. Machine gaining knowledge of methods by constructing models using data gathered from patients, it is possible to get better results for prediction. This is the case in this effort that we will put to use Classification and ensemble learning with machine learning Using statistical methods on a dataset, diabetes may be predicted. Which of the following are K-Nearest? KNN (Kindest Neighbour), Logistic Regression (LR), and Decision Tree (DT), Support Vector Machine (SVM), Gradient Boosting (GB), and Support Vector Machine (SVM) The Forest of Chance (RF). Every model has a different level of accuracy than the others. Whenever they are contrasted with other models. The project work provides the opportunity to the model's ability to forecast diabetes with high accuracy or greater accuracy demonstrates that the model is capable of doing so. As a result of our research, we have discovered that when compared to other methods, Random Forest produced greater accuracy. Techniques using machine learning.

Keywords: Diabetes, Machine, Learning, Prediction, Dataset, Ensemble

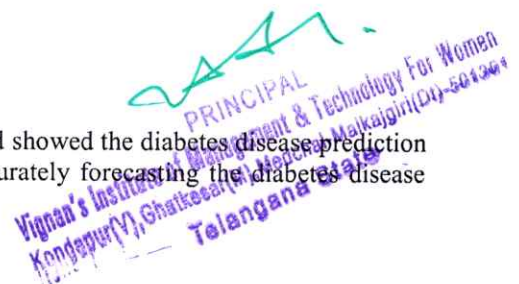
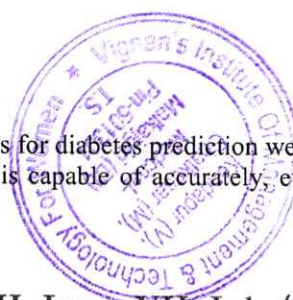
1) . INTRODUCTION

Diabetes is one of the most dangerous illnesses in the world. Diabetes is caused by obesity, excessive blood glucose levels, and other factors, among others. It has an effect on the insulin hormone, resulting in aberrant glucose levels. Crabs' metabolism is improved, as is the amount of sugar in their blood. Blood. Diabetes develops when the body does not produce enough insulin. Insulin. In accordance with the World Health Organization (WHO), Diabetes affects about 422 million people worldwide, with the majority of them living in low- or middle-income nations. And this may be the case. Up to the year 2030, the total amount of money will have risen to 490 billion. However Diabetes is reported to be prevalent in a number of different countries. Such as Canada, China, and India, among others. India has a population of 1.2 billion people. As the population of India has grown to more than 100 million, the real number of diabetics in the country is 40 million. Diabetes is a leading cause of mortality in the United States. Throughout the whole globe early detection of diseases such as diabetes may save lives. Maintain control while saving a person's life In order to achieve this, this research investigates diabetes prediction by examining a variety of variables. Diabetes-related characteristics are listed below. In order to do this, we using the Pima Indian Diabetes Dataset, we run a number of tests. Techniques for machine learning classification and ensemble learning to be able to anticipate diabetes Machine learning is a technique that is used to learn new things. This method is used to explicitly teach computers or machines. Various Machine Learning Techniques are effective in delivering results. Gather knowledge by creating different classifications and categorizations ensemble models derived from a dataset collection such information was gathered Diabetes may be predicted with the use of statistics. Various methods are used. Machine Learning is capable of making predictions; however this is not always the case. It's difficult to decide on the ideal method. As a result, for this reason On the basis of popular classification and ensemble techniques, we develop a dataset for the purpose of prediction

2) REVIEW OF THE LITERATURE

K.VijiyaKumar et al. [11] presented a random Forest algorithm for the prediction of diabetes and developed a system that may be used to diagnose the disease. Can make an early diagnosis of diabetes in a patient who has a genetic predisposition The Random Forest method, which is used in machine learning techniques, provides more accuracy. The suggested model provides the following:

Findings for diabetes prediction were the best, and the outcome indicated showed the diabetes disease prediction system is capable of accurately, efficiently, and most importantly, accurately forecasting the diabetes disease



AN EFFICIENT SKIN CANCER PROGNOSIS STRATEGY USING DEEP LEARNING TECHNIQUES

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Abstract

To start the right treatment, identification of an indefinite skin lesion is necessary. Only highly trained dermatologists who can treat them with an early diagnosis and diagnose melanoma skin lesions. The classification of skin for melanoma Dermoscopic images is 70 percent. Due to the limited supply of expertise, systems that sort dermal growth as the autoimmune or metastatic tumor can serve as an early screening tool. This study provides a model of the Convolutional neural network trained for skin lesion images, from previously acquired features of the Highway Convolutional neural network (CNN). It does not require advanced preprocessing. In addition, the model not require much computing power to train. The Convolutional neural network (CNN) method achieves training accuracy of 50%, and 70% of the test data have classification accuracy, low, moderate and high accuracy of the estimated damage.

Keywords: Classification taxonomy, Convolutional neural networks, Skin cancer, melanoma.

1. Introduction

Cancer is one of the primary reasons for death worldwide. Researchers and doctors face many challenges in tackling cancer. The American Cancer Society shows about one-lakh members had skin carcinoma. About 1.5 lakh members had pulmonary carcinoma, 0.5 lakh members had mammary gland carcinoma, and 30,000 members had prostate cancer. Seventeen thousand seven hundred and sixty people have died out of brain cancer in 2019 (American Cancer Society, New Cancer Release Report 2019) [3]. Many people saved because of diagnosing the carcinoma earlier. In general, visual inspection and manual methods used for this type of cancer can help with disease identification. This physical description of the therapeutic depiction is prolonged and has a high risk of errors. Computer-aided Design (CAD) systems were introduced in the early 1980s to develop therapeutic imaging [4]. Characteristic mining is an essential pace in acquiring artificial intelligence. [5–21] Various techniques for removing various kinds of carcinoma. However, there are drawbacks to these techniques, depending on characteristic mining. To secure the drawbacks and improve performance, see the illustration suggested in [22, 23]. An in-depth study has the advantage of directly producing high-quality raw images. In addition to an in-depth study, graphics processing units (GPUs) used parallel with feature processing and picture identification. For instance, neuromuscular neural networks can identify carcinoma [24].

Direct digital imaging is a popular method for medical diagnosis with new computing and device learning mechanisms. A variety of in-depth study molds developed and implemented within clinical identification because of their ability to discover designs in digital pictures. Convolutional Neural Network's best performance technology for image classification. Similarly, Convolutional Neural Network has made progress in several clinical picture analysis tasks, including classification and diagnosis. For example, the Convolutional Neural

A COMPREHENSIVE STUDY OF VARIOUS APPLICATION OF GRAPH THEORY IN MODELING: PROSPECTIVE OF VARIOUS GRAPH COLORING AND DIRECTIONS

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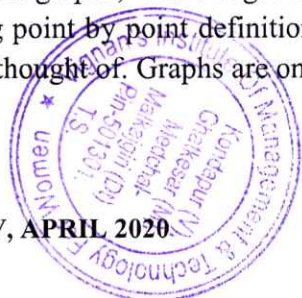
Abstract:

Graph theory is quickly moving into the standard of arithmetic for the most part in light of its applications in various fields which incorporate organic chemistry (genomics), electrical building (interchanges systems and coding theory), software engineering (calculations and calculations) and tasks inquire about (booking). The incredible combinatorial strategies found in graph theory have likewise been utilized to demonstrate major outcomes in different zones of unadulterated arithmetic. Graphs are utilized to characterize the progression of calculation. Graphs are utilized to speak to systems of correspondence. Graphs are utilized to speak to information association. Graph change frameworks take a shot at rule-situated in-memory control of graphs. In arithmetic, graph theory is the investigation of graphs, which are numerical structures, used to display pairwise relations between objects. A graph right now made up of vertices (additionally called hubs or focuses) which are associated by edges (likewise called connections or lines). The paper along these lines centers around the various parts of this incredible technique for representation of logical realities that can be utilized to tackle some constant problems. The accompanying paper presents the peruser with the presentation, phrasing of graph theory. Imminent of different Graph Coloring and directions applications of graph theory in the assorted fields of science and innovation.

Keywords: Coloring Applications, Graph Coloring, Graph Labeling, Modeling, Problem Solving Techniques, Representation.

I. INTRODUCTION

In mathematics, graph theory is the investigation of graphs, which are scientific structures used to show pairwise relations between objects. A graph right now made up of vertices (likewise called hubs or focuses) which are associated by edges (additionally called connections or lines). A differentiation is made between undirected graphs, where edges interface two vertices evenly and coordinated graphs, where edges connect two vertices unevenly; see Graph (discrete science) for increasing point by point definitions and for different varieties in the sorts of the graph that are normally thought of. Graphs are one of the prime objects of study in discrete science.



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Detection of Cardiac Abnormalities by Fusion of Time Domain Morphological Features and Nonlinear Features of ECG Signal via Ensemble Classifier

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Cardiac abnormality is a condition caused by abnormal electrical activity in the cardiac system and it is recorded by the electrocardiogram (ECG) signal. Due to the non-stationary nature of the ECG signal manual interpretation of cardiac abnormalities becomes more difficult and leads to errors. A method based on the ensemble classifier is proposed for efficient classification of abnormalities. In this study, five different types of abnormalities are analysed. Different time domain descriptors amplitudes of peaks, intervals, slopes are employed as Time Domain Morphological features and Higuchi Fractal Dimensions (HFD) and Hjorth parameters are used as nonlinear features. Most of these features are extracted after the segmentation of ECG beats. We proposed to train two SVM models one with linear features and other with nonlinear features. This method shows better results compared with best in class existing classification methods and yielded the highest average classification accuracy of 99.30%.

Keywords: Electrocardiogram, Ensemble Classifier, Higuchi Fractal Dimensions (HFD), Hjorth Parameters, SVM.

1. INTRODUCTION

Cardiac arrhythmias result from irregularities in the electrical activity of the heart and that can appear on the Electrocardiogram (ECG) signal. The long-term examination of the physiological signal by experts can be expensive and subjected to some errors. That is why computer based automatic classification of cardiac diseases becomes a valuable assistant for health care professionals [1] in the process of diagnosis. Since ECG is an effective tool for analysis of heart related problems. For accurate classification of cardiac abnormalities, various features should be extracted from the ECG Signal. The classification accuracy can be improved by efficient delineation and selection of ECG features. Based on the type of cardiac abnormality the single ECG may have same type of beats or different types of beats. There are various classification techniques explored in the literature for detection of cardiac abnormalities. All these involves the following main steps.: Pre-processing, Detection of R-peaks, cardiac beats segmentation, feature extraction and Multi class classification. Pre-processing of ECG signal for removing unwanted noise like Baseline wander (BW) and Powerline

Interference (PLI). Accurate detection of R-peaks is crucial for segmentation. Beat segmentation is performed based on positions of the R-peaks. Each beat exhibits its own attributes, those attributes has been extracted as features. The features may exist in the time domain, frequency domain, a combination of time-frequency domain, and other morphological features.

This works primary objective is, extraction of different features from the ECG signal and efficient detection of cardiac abnormalities using SVMs as ensemble classifier. In the proposed method efficient model is built by using ensemble classifier to classify Normal beat, LBBB beat, RBBB beat, PVC beat and PB beat.

The remaining sections were organized in the following manner. We present the exiting work concerning to the area of classification of cardiac abnormalities in second section. Section 3, presented proposed methodology. Section 4 shows the evaluation of proposed work and results. The work is concluded in Section 5.

2. LITERATURE SURVEY

In literature, various techniques for classification of cardiac abnormalities is developed based on the characteristics

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An Effective Approach for Virtual Machine Migration and Dynamic Placement Using Elephant Herd Optimization

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Abstract

Cloud computing is a platform for offering computational services as a method to deal with multiple problems in virtualized data management. Therefore, it is necessary to position and migration of virtual machines in order to accomplish several contradictory objectives. This work explores the state-of-the-art in the field in regards to the difficulty of these tasks and the vast number of existing proposals. Cloud Measurement combines new technologies that shape our lives in a way that saves investments in the upfront infrastructure for consumers operating on VMs on physics machines provided by a cloud service. Multiple VMs on the same PM could have different work completion times due to the heterogeneity of numerous works. PMs are heterogeneous in the meantime as well. Consequently, multiple VM placements have differing completion periods. Our goal is to reduce the completion time for VM input requests through a realistic schedule for VM placement. This dilemma is NP-hard so it can be simplified to a problem with knapsack. We suggest an offline approach for VM placement by way of emulated VM migration, and an actual migration mechanism for VM solves the online VM placement. The migration algorithm is a heuristic approach, where we explicitly position the VM to its best PM, given that it is capable of doing so. Otherwise we can move another VM from this PM to handle the new VM if the migration limitation is met. In addition, this work incorporates and suggests the introduction of the online dynamic positioning Elephant Herd Optimization (EHO) approach, and the assessment results show the high efficiency of the proposed algorithm.

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A Machine Learning-based Damage Prediction Techniques for Structural Monitoring

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Abstract: Nowadays, the Structural Building Health Damage Monitoring System (SBHDM) predicting the civil building structures' health. SBHDM contains abnormal changes in the levels. Natural Disasters like Earthquakes, Floods, and cyclones affect the unusual changes in undergoes any natural disaster, the sensors capture the vibration data or change the buildings' data, these unusual changes can be analyzed. Here sensors or Machine Learning based (MLBDP) are used for capturing and collecting the vibration data. This paper proposes a Novel Neural Network with Support Vector Machine (RAS) metaheuristic method. RAS method is building's vibration data levels captured by the sensors. For the feature reduction subset, we processing method called the Rough set theory (RST) strategy. RAS has two contributions. Vector Machine (SVM) classification method used for identifying the structures of the building. Neural Network (ANN) method used to predict the buildings' damage levels is the second contribution is accurately predicting the conditions of the construction building structure and predicting the intervention. Comparing the results states that the proposed method accuracy is better than ANN. The prediction analysis depicts that the RAS method can effectively detect the damage level.

Keywords: Machine Learning, Structural Health Monitoring, Data Mining, Rough set theory, Building Damage Prediction (MLBDP).

1. Introduction

In the 1960s, a local assessment system is implemented for identifying the infrastructures called as Structural Health Monitoring (SHM) or Structural Strength Monitoring. Typically indicates the offline assessments such as visual inspection, Gamma, and X-ray are helpless against impacts like natural disasters, earthquakes, and typhoons. Regular gives damage identification (DID). However, it is impossible because of the time-consuming regular inspection cost, and increase public safety, need a robust procedure for diagnosis. Structural Strength Monitoring System (SSMS). It used to estimate the lifetime (Strength) to the SSMS is raw data obtained from a different kind of MLBDP. It is like Accelerometers, Hygro-meters, and Extensometers that mounted on buildings or bridges. The first building structure observations overtime or a long time through the MLBDP depict building structure. It uses the synchronized data, correlated with the data coming from

By early prediction of the damages in the buildings is used for extending the strength of structures and increase public safety. The essential features are the structural performance of the buildings in case of natural disasters. The parameters like signals, acceleration generally used for monitoring the strength of the building. Forces

BDVC-MEDICAL BIG DATA VOICE CLONING FOR HEALTH CARE SYSTEMS

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Abstract- Healthcare systems are transformed digitally with the help of medical technology, information systems, electronic medical records, wearable and smart devices, and handheld devices. The advancement in the medical big data, along with the availability of new computational models in the field of healthcare, has enabled the caretakers and researchers to extract relevant information and visualize the healthcare big data in a new spectrum. The role of medical big data becomes a challenging task in the form of storage, required information retrieval within a limited time, cost efficient solutions in terms care, and many others. Early decision making based healthcare system has massive potential for dropping the cost of care, refining quality of care, and reducing waste and error. Scientific programming play a significant role to overcome the existing issues and future problems involved in the management of large scale data in healthcare, such as by assisting in the processing of huge data volumes, complex system modelling, and sourcing derivations from healthcare data and simulations. Therefore, to address this problem efficiently a detailed study and analysis of the available literature work is required to facilitate the doctors and practitioners for making the decisions in identifying the disease and suggest treatment accordingly.

Keywords: Cyber bullying detection, Text Mining, Representation learning, Stacked Denoising Auto encoders, Word Embedding

I. INTRODUCTION

Information has been the key to a better organization and new developments. The more information we have, the more optimally we can organize ourselves to deliver the best outcomes. That is why data collection is an important part for every organization. We can also use this data for the prediction of current trends of certain parameters and future events. As we are becoming more and more aware of this, we have started producing and collecting more data about almost everything by introducing technological developments in this direction. Today, we are facing a situation wherein we are flooded with tons of data from every aspect of our life such as social activities, science, work, health, etc. In a way, we can compare the present situation to a data deluge. The technological advances have helped us in generating more and more data, even to a level where it has become unmanageable with currently available technologies. This has led to the creation of the term 'big data' to describe data that is large and unmanageable. In order to meet our present and future social needs, we need to develop new strategies to organize this data and derive meaningful information. One such special social need is healthcare. Like every other industry, healthcare organizations are producing data at a tremendous rate that presents many advantages and challenges at the same time. In this review, we discuss about the basics of big data including its management, analysis and future prospects especially in healthcare sector. To develop a secure cloud framework for accessing trusted computing and storage services in all levels of public cloud deployment model Healthcare systems are being digitally transformed by technological enhancements in medical information systems, electronic medical records, wearable and smart devices, and handheld devices. This increase in medical big data, alongside the development of computational techniques in the field of healthcare, has enabled researchers and practitioners to extract and visualize medical big data in a new spectrum.

BAND WIDTH ROUTING AND PACKET LOSS CONTROLLING TECHNIQUE IN IOT AND MANETS

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Abstract:

MANET (Mobile Ad hoc Network) is a type of ad hoc network, which consists of mobile devices as the nodes in the network. There will not be any centralized infrastructure. It has many features like multihop communication, dynamic topology. But it has limited resources and limited security. The limitations in resources may cause congestion in the network. Congestion may occur in any intermediate nodes and results in high packet loss, high delay which lead to performance degradation of the network. So congestion control is one of the importance tasks in the MANET. This paper presents a review of different techniques used for the congestion control in the MANET. It can cause congestion that results in increasing transmission delay and packet loss. This problem is more severe in larger networks with more network traffic and high mobility that enforces dynamic topology. To resolve these issues, we present a bandwidth aware routing scheme (BARS) that can avoid congestion by monitoring residual bandwidth capacity in network paths and available space in queues to cache the information. The amount of available and consumed bandwidth along with residual cache must be worked out before transmitting messages. The BARS utilizes the feedback mechanism to intimate the traffic source for adjusting the data rate according to the availability of bandwidth and queue in the routing path

Keywords— MANET, Multi-hop, Topology change, Congestion Control, Packet loss, , data rate, link capacity, MANETs, IoT

I. INTRODUCTION

MANET's were earlier named as packet radio. MANET is a collection of mobile devices that are connected over various wireless links. It is a infrastructure less networks of mobile devices connected without wires. Each device in a MANET is free to move in any direction, and will therefore change its links to other devices frequently. A node in the network can communicates directly with other nodes within its wireless communication range. If the destination node is beyond the communication range of the source node, then the intermediate nodes act as routers to forward the packets from the source to destination. Each node in the MANET act as both router and host. That is it is autonomous in behaviour. MANET has many features like dynamic topology, selfconfigurability, flexibility and multi-hop communications. Due to these features they are used in various kinds of applications like military applications, rescue operations, vehicular networks etc. But

The internet is one of the most important and transforming technology ever invented. Internet is like a digital fabric that affects our life in one way or others. The internet of people changed the world but there is a new internet emerging which is about connecting things and so its name is the internet of things (IoT), here the things share their experience and communicate with one another [1]. It is like take things and add sense and communication power to them. Here the things interact and collaborate with other things. For example our smartphone, it has many sensors, it knows where we are, it knows what we are saying to it (through Google), it knows how close it is to our face, it knows how much light around us, it knows how we are holding it, it knows if we are moving, even it has an eye (camera) so it can see our surroundings and has the power to communicate in a wireless and mobile network. Smart cloud environment and hence achieve effective utilization of devices learn and track pattern to ensure our comfort and save energy and it communicates in the network and we can control them. Because they can communicate in the network so they know how to listen, we can tell them or other smart things can tell them to turn on, off or play. We can take the example "armband". If we have armband on our hand during night, it senses the sleep cycle and know when to wake up people by gently vibrating and blinking light with the same time send message to other smart things at home and a chain of event starts, because now things are talking to one another for example, house fan startup and draw all the morning air in the house, which cools the home and coffee maker starts up automatically etc. We all want to live a better life and technology like IoT has the ability to sense, communicate and provide new levels of comfort for us. It is a perfect technology to collect raw data and turn it into knowledge and then wisdom and move the human race forward. Technology is accelerating force. The smart things can send information in MANET across all active things without any centralized scheme [2]. The mobile (sensor) network is the backbone of smart environment. The smart things act as router under the IoT environment. In the Smart World ahead, we will see how physical things will be able to automatically exchange data among themselves. IoT (Internet of things) is a technology that facilitates the interlinking of physical things with the digital world. MANET is a set of nodes, which are basically distributed spatially and communicating each other wirelessly and here smart things can communicate with each other remotely. Every intelligent gadget is able to change its location by using the MANET mobility feature. The MANET in IoT is a combination of portable autonomous smart things that can transfer data to each other through a wireless network.

Safety emergency requires quick and clear communication. Emergency medical technician, Fireman, a Police officer, and

FCPP-Fraudulent Company Posting Prediction Using Machine Learning Algorithms

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Abstract

During the pandemic, there is strong rise in the number of online job posted on various job portals. So, fake job posting prediction task is going to be big problems for all. Thus, these fake jobs can be precisely detected and classified from a pool of job posts of both fake and real jobs by using advanced deep learning as well as machine learning classification algorithms. This paper proposed to use different data mining techniques and classification algorithm To avoid fraudulent post for job in the internet, an automated tool using machine learning based classification techniques is proposed in the paper. Different classifiers are used for checking fraudulent post in the web and the results of those classifiers are compared for identifying the best employment scam detection model. It helps in detecting fake job posts from an enormous number of posts. Two major types of classifiers, such as single classifier and ensemble classifiers are considered for fraudulent A. Single Classifier based Prediction- West Bengal Classifiers are trained for predicting the unknown test cases. The following classifiers are used while detecting fake job posts a) Naive Bayes Classifier- job experimental posts results detection. indicate that However, ensemble classifiers are the best classification to detect scams over the single classifiers.

Keywords— Random Forest, KNN, Naive Bayes, Real and Fake, support vector machine, deep learning, and classification.

I. INTRODUCTION

In modern time, the development in the field of industry and technology has opened a huge opportunity for new and diverse jobs for the job seekers. With the help of the advertisements of these job offers, job seekers find out their options depending on their time, qualification, experience, suitability etc. Recruitment process is now influenced by the power of internet and social media. Since the successful completion of a recruitment process is dependent on its advertisement, the impact of social media over this is tremendous. Social media and advertisements in electronic media have created newer and newer opportunity to share job details. Instead of this, rapid growth of opportunity to share job posts has increased the percentage of fraud job postings which causes harassment to the job seekers. So, people lack in showing interest to new job postings due to preserve security and consistency of their personal, academic and professional information. Thus, the true motive of valid job postings through social and electronic media faces an extremely hard challenge to attain people's belief and reliability. Technologies are around us to make our life easy and developed but not to create unsecured environment for professional life. If jobs posts can be filtered properly predicting false job posts, this will be a great advancement for recruiting new employees. . Fake job posts create inconsistency for the job seeker to find their preferable jobs causing a huge waste of their time. An automated system to predict false job post opens a new window to face difficulties in the field of Human Resource Management.

Employment scam is one of the serious issues in recent times addressed in the domain of Online Recruitment Frauds (ORF) [1]. In recent days, many companies prefer to post their vacancies online so that these can be accessed easily and timely by the job-seekers. However, this intention may be one type

EFFECT OF E-LEARNING ON HIGHER EDUCATION: A STUDY

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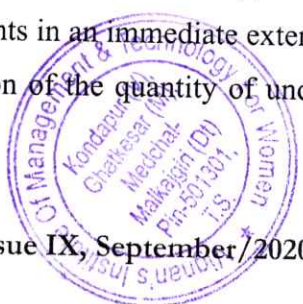
Abstract—

Most colleges in Egypt face numerous instructive issues and deterrents that innovation can assist with surviving. An open source, for example, Moodle e-learning stage, has been actualized at numerous Egyptian colleges. Moodle could be utilized as a guide to convey e-content and to give different prospects to executing offbeat elearning online modules. This paper shows that the utilization of intelligent highlights of e-learning expands the inspiration of the college understudies for the learning cycle. List Terms—e-learning, advanced education, inspiration, online instruction.

1. Overview

Online learning is utilized these days as another alternative to up close and personal schooling. Actually, its utilization increments in an immediate extent with the expansion of the quantity of understudies.

This has put forth teachers apply a great deal of attempt to assist the students with getting intelligent substance that is brimming with sight and sound as it has been demonstrated that it significantly affects the way toward learning. The effect of websites and wikis has likewise been researched on students' cooperation and reflection and it was accounted for that the two of them have a constructive outcome. E-learning has been presented as a device in the learning cycle in most of the global colleges around the world. The expression "e-learning" is characterized by [9] as "any discovering that includes utilizing web or intranet." after a year [8] made the definition more summed up by demonstrating that it is "anything conveyed, empowered, or interceded by electronic innovation for unequivocal reason for learning" [17][18]. As per [7] "e" in e-learning ought not represent electronic; it should be a truncation for



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Analysis of Classification Technique for Prediction of Damages Levels in Building-Structures

M Vishnu Vardana Rao, Aparna Chaparala

Abstract

This article proposes various classification reviews for predicting the damage levels in the Building dataset. Some of these Classification Algorithms are Support Vector Machine (SVM), Artificial Neural Network (ANN), K-nearest Neighbour (KNN), Naïve Bayes (NB), Decision Tree (DT) algorithms. The five-fold cross validation assessment of classification algorithm applied on the Building dataset to predict the damage levels in the building. From our investigation, it is observed that the Decision Tree (DT) gets higher accuracy when compare to SVM, NB and ANN algorithms for prediction of Building damage levels. Hence DT algorithm exactly suitable for Building damage prediction based on the observation in the dataset. Finally this study helps investigators for selecting the appropriate approach for predicting the damage levels of the Building. The experiments are conducted on WEKA machine learning tool. The measures such as accuracy, precision, Recall, and F-measure are calculated for above classification algorithms.

PDF

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Movie recommendation system based on Collaborative Filtering

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Abstract: Today's web and app users request modified experiences. They anticipate the apps, news sites, social networks they engage with to evoke who they are and what they're fascinated in and make related, adjusted, and accurate commendations for new content and new goods based on their earlier deeds. This can be done using Recommended Systems in Machine Learning. In this paper we use Recommender System to recommend movies based on his previous ratings on movie he came across.

Index Terms - Recommendation system, Collaborative filtering, Movie, Data Preprocessing, Visualizations, Rating, Movies

I. INTRODUCTION

As the business needs are accelerating, there is an increased dependence on extracting meaningful information from humongous amount of raw data to drive business solutions. The same is true for digital recommendation systems which are becoming a norm for consumer industries such as books, music, clothing, movies, news articles, places, utilities, etc. These systems collect information from the users to improve the future suggestions.

With the eruption of big data, practical recommendation schemes are now very important in various fields, including e-commerce, social networks, and a number of web-based services. Nowadays, there exist many personalized movie recommendation schemes utilizing publicly available movie datasets (e.g., MovieLens and Netflix), and returning improved performance metrics (e.g., Root-Mean-Square Error (RMSE)). However, two fundamental issues faced by movie recommendation systems are still neglected: first, scalability, and second, practical usage feedback and verification based on real implementation. In particular, Collaborative Filtering (CF) is one of the major prevailing techniques for implementing recommendation systems. However, traditional CF schemes suffer from a time complexity problem, which makes them bad candidates for real-world recommendation systems. Collaborative Filtering is the most common technique used when it comes to building intelligent recommender systems that can learn to give better recommendations as more information about users is collected.

II. TYPES OF RECOMMENDATION SYSTEM

A Recommendation System is a software tool designed to make and deliver suggestions for things or content a user would like to purchase. Using machine learning techniques and various data about individual products and individual users, the system creates an advanced net of complex connections between those products and those people. These are a collection of algorithms used to recommend items to users based on information taken from the user. These systems have become ubiquitous, and can be commonly seen in online stores, movies databases and job finders. There are 3 types of recommendation systems

1. Popularity based recommendation engine
2. Content based recommendation engine
3. Collaborative filtering based recommendation engine

Popularity based recommendation engine:

Pearson correlation is invariant to scaling, i.e. multiplying all elements by a nonzero constant or adding any constant to all elements. For example, if you have two vectors X and Y, then, $\text{pearson}(X, Y) == \text{pearson}(X, 2 * Y + 3)$. This is a pretty important property in recommendation systems because for example two users might rate two series of items totally different in terms of absolute rates, but they would be similar users (i.e. with similar ideas) with similar rates in various scales.

Content based recommendation engine:

Content based recommendation engine takes in a movie that a user currently likes as input. Then it analyzes the contents of the movie to find out other movies which have similar content. Then it ranks similar movies according to their similarity scores and recommends the most relevant movies to the user.

Gender Voice Recognition with Classification approach using Random Forest and Decision Tree Algorithms

Mukesh Tadi, S Prasad Babu Vagolu, and Sunil Chandolu

Abstract— Gender identification is one of the major problems of the speech processing. Gender tracking from aural data like median, frequency, and pitch. Machine learning provides auspicious results for the problem of classification in all domains. There are a few standards to work on to appraise the algorithms. Our model comparisons algorithm for appraising different learning algorithms is based on different metrics for classifying gender and aural data. An important parameter in evaluating any algorithms is their performance. The degree of variability should be low for classification set of problems; means the accuracy rate should be pretty high. The position and gender of the person became pretty important in financial markets by the form of AdSense. With this model comparisons algorithm, we tried different ML algorithms and came up with the best fit for the gender classification of aural data.

Index Terms—Gender identification, Voice Recognition, Random Forest Algorithm, Decision Tree Algorithm.

I. INTRODUCTION

Finding someone's gender based on their voice is an easy task. In the real world, the difference between male and female voices can easily be identified by human ear in first couple of words. Its most common communication in the world. The voice is full of many linguistic features. These voice features are considered a voice print to recognize [14] the speaker's sex. Voice recordings are considered as input to the system, which is then the system's process for detecting voice features [1]. However, programming to do this becomes very difficult.

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This document describes the design of a computer program to illustrate the analysis of words and words that determine gender [2]. Test the input and compare it with the trained model, perform the calculations according to the algorithm used and give the same result i.e. male or female.

II. CLASSIFICATION ALGORITHMS DESCRIPTION

A. Random Forest Algorithm

Random Forest is a supervised learning method used for classification and regression. It is mainly used to collect news of unsafe separation. Each tree provides the cohesion of that feature. The forest chooses a section with the most votes in a particular ward. It is a spherical study of the classification [3] [13], registration and other functions, which works by constructing multiple decision trees during training and extracting a game path (categorization) or mean prediction (repositioning) of individual trees.

B. Decision Tree Algorithm

Decision Tree is also a supervised machine learning technique for both the predictions as well as the classification in machine learning. Tree decisions are trees that are categorized according to feature values. Each location in the decision tree represents a specific element in the image, and each branch represents a value that can be considered a negative space. The tree learning curve, used in data mining and machine learning, uses the decision tree as a model for mapping an object to a specific object to draw conclusions about the value of an object.

C. Logistic Regression Algorithm

Logistic Regression is also for classification problems; is a prediction-based algorithm for analysis and is based on the assumption of probability. Logistic Regression uses a very expensive function, this cost function can be defined as a 'Sigmoid function' or also known as a 'function logistic' instead of a linear function. Other examples of problems with spam emails or not online spam Scanning or Not Fraud, Tumor Malignant or Benign.

D. Support Vector Machine

SVM is also a good for both classification and regression challenges. However, SVM usage is widely in separation problems. In this algorithm, we plot each data element as a point in the n-dimensional space (where the value of n is the

The use of Machine Learning Techniques in a Web-Based Learning Diagnosis System Program

Sunil Chandolu, S. Prasad Babu Vagolu, D.Usharajeswari



Abstract: This work proposes a canny learning finding framework that bolsters a Web-based topical learning model, which expects to develop students' capacity of information incorporation by giving the students the chances to choose the learning themes that they are intrigued, and gain information on the particular subjects by surfing on the Internet to look through related adapting course-product and examining what they have realized with their associates. In view of the log documents that record the students' past web-based learning conduct, an insightful analysis framework is utilized to give fitting learning direction to help the students in improving their investigation practices and grade online class interest for the teacher. The accomplishment of the students' last reports can likewise be anticipated by the conclusion framework precisely. Our trial results uncover that the proposed learning finding framework can proficiently assist students with expanding their insight while surfing in the internet Web-based "topic based learning" model.

Keywords: Web-based learning, Theme-based learning, Fuzzy expert program, K-nearest neighbor, Naïve Bayesian classifier, Support vector machines, Learning diagnostics .

I. INTRODUCTION

The amazing advancement of data innovation has made another vision to arrange to discover that its impact has just spread over the world to encourage instructive development. In this way, numerous nations have been focusing on PC innovation and expect it can encourage the training change in a powerful and proficient manner. It is notable that the use of PC and Internet lessons to customary educating requires a change. Subsequently, the new function of the appropriate learning model requires realistic thinking about the shared interaction between customers and PCs, teacher and students, and the organization between students. Include research issues related to the above process; unbelievable research results at that time can be quite common rectification is not possible.

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The subject-based learning is to become familiar with incorporated information by characterizing a focal "topic" at the very beginning and form related information encompasses the focal topic from different perspectives. Such a learning model stresses the preparation of the students with the competency of information reconciliation. Contrasted and conventional instructing, which shows fragmentary data inside the restriction of subjects, units, parts, and areas, the goal of topic-based learning is to accept a topic as a beginning stage and loosen up of it dependent on the students' advantages. In like manner, the students can willfully build their own insight since the topic is emphatically associated with our everyday life and created from students' eagerness.

A subject-based learning procedure can be partitioned into the outside course and inside dissemination as showed in Figure 1 [7]. Outside dissemination exercises are 1) Identify a focal topic, 2) Identify related subject domains dependent on student's advantage, 3) Collect data for the particular themes, 4) Integrate gathered data to fabricate shared information, and 5) Exhibit learning out-comes and offer with others. The exercises of the outside flow are express learning practices. Then again, the inside flow comprises of certain psychological exercises, which are Plan, Action, and Introspection, separately. At the point when students take part in the topic put together learning forms with respect to the Web, they are encountering the exercises of outside and inside flow synchronously. Since the unequivocal component of the learning procedures can be controlled or guided successfully by the cautious plan and execution of the Web-based learning condition, it is normal that the inside dissemination, which speaks to the undetectable mental conduct of the students, can gain incredible ground at the same time.

External flow of topic-based learning, as Figure 1 shows, can be done as a web-based framework that helps address learning strategies. The reading activities for false reading can be divided into five categories as follows.

(1) Identify the basic theme

The learners occupied with topic-based learning can propose their own fascinating points to request input from other colleagues. In the interim, each student can likewise join the other part's proposed subject. After cooperation and conceptualizing, the ones who are keen on a similar subject are framed as a learning group, and this point is the focal topic that this group would explore. The inspiration for such a game plan is, that "an understudy can learn better on the off chance that he/she was keen on the learning theme". The subject ought to be firmly associated with the students' day by day life and a broad scope of review which isn't restricted in a particular field is energized.

A REVIEW OF PRIVACY-PRESERVING KNN CLASSIFICATION PROTOCOL OVER ENCRYPTED RELATIONAL DATA IN THE CLOUD

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ABSTRACT: Cloud computing, secure analysis on redistributed encrypted data is a noteworthy subject. As an every now and again utilized inquiry for online applications, k-nearest neighbors (k-NN) calculation on encrypted cloud data has gotten a lot of consideration, and a few answers for it have been advanced. Nonetheless, most existing plans accept the question clients are completely trusted and all inquiry clients share the all out key which is utilized to encrypt and decrypt data proprietor's redistributed data. It is unavoidably not attainable in bunches of certifiable applications. This paper survey the privacy-preserving KNN classification protocol over Encrypted social data in the cloud.

KEYWORDS: Cloud computing, KNN classification, Secure Data.

I. INTRODUCTION

Recently, the cloud computing worldview has gotten famous for its colossal and adaptable stockpiling just as its incredible and adaptable calculation capacities [1]. To use these favorable circumstances, more data proprietors will in general redistribute their databases and further data analysis activities (e.g., database inquiries and data mining undertakings) to cloud workers. For security purposes, a data proprietor may decide to encrypt its database before redistributing [2]. In any case, performing calculations over encrypted databases without decrypting the data is exceptionally testing.

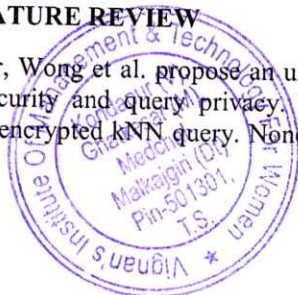
As an essential database query and a fundamental module of regular data mining undertakings, the k-nearest neighbor (kNN) query has been generally utilized in numerous situations, for example, multi-watchword positioned search, organize interruption recognition and recommender framework [3]. Thinking about its significant applications, to help kNN query over encrypted cloud database, numerous works have been proposed in which there are normally three distinct gatherings: the data proprietor (DO), the query clients (QUs) and the cloud worker (CS). By and large, analysts think about the accompanying four security and privacy properties: (1) database security, (2) DO's key classification [4], (3) query privacy [5] and (4) the covering up of data access designs [6]. Lamentably, none of these current plans accomplish the four properties simultaneously.

Regardless of tremendous preferences that the cloud offers, privacy and security issues in the cloud are forestalling organizations to use those focal points. At the point when data are profoundly touchy, the data should be encrypted before re-appropriating to the cloud. In any case, when data are encrypted, independent of the essential encryption plot, playing out any data mining assignments turns out to be trying while never decrypting the data.

A novel secure k-nearest neighbor query protocol over encrypted data that ensures data classification, client's query privacy, and conceals data access designs. Anyway PPKNN is a more perplexing issue and it can't be understood legitimately utilizing the current secure k-nearest neighbor procedures over encrypted data. To give another answer for the PPKNN classifier issue over encrypted data a novel privacy-preserving k-NN classification protocol over encrypted data in the cloud is proposed. This protocol ensures the secrecy of the data, client's information query and conceals the data Access designs. Execution of the protocol under various boundary settings likewise assessed.

II. LITERATURE REVIEW

In particular, Wong et al. propose an unbalanced scalar-item preserving encryption (ASPE) plot ensuring both database security and query privacy. Different works, for example, propose various techniques to around register the encrypted kNN query. Nonetheless, these works expect that all QUs can be trusted and share DO's



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COMPARITIVE ANALYSIS OF LUNG DISEASE DETECTION USING DEEP LEARNING MODELS

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Abstract:

Now a days for identifying or predict any diseases on human beings, we should have proper diagnosis for predicting the disease which is present in that human body. In general for prediction of diseases we try to use either X-Ray, CT or MRI scan techniques for taking decision on that appropriate disease. In general medical person need complete knowledge on that appropriate domain to find out the abnormality which is present in human beings. As we all know that India tops the world for having more deaths due to lung diseases. After the second highest cause of deaths in India due to heart disease, this lung disease is one which is increasing its rank more and more. In order to reduce that problem early diagnosis and treatment of lung diseases is critical to prevent complications including death. Normally for finding the abnormality present in lung, chest X-ray is playing very important role to detect the complete information about the lungs. In this current article we try to present an effective way for expert diagnosis of lung diseases using deep learning models. It focuses on creating a system for assistance of Radiologists in detection of lung diseases. This will especially benefit rural areas where radiologists aren't easily available. We use two models like Vgg16 and Vgg19 for predicting the lung disease from chest X ray images and then tell which model gives high accuracy and performance. We conclude by discussing research obstacles, emerging trends, and possible future directions for improving some more advancement.

Keywords: Radiologists, Lung Diseases, Deep Learning Models, Early Diagnosis, X-Ray.

1) INTRODUCTION

In recent days, the introduction of IT and e-health care system in the medical field try to provide medical experts to give proper treatment for the patients who are in emergency. One of the most critical disease which is ranked second in India after the heart disease is lung diseases, also known as respiratory diseases [1]As per the IRS (International Respiratory Societies [2]), report more than three hundred million people are continuously suffering from asthma disease and more than 2 million people die due to this lung diseases.

From the recent analysis, we know the COVID-19 pandemic infected millions of people and healthcare systems and also there was great loss for the humans. In general these lung diseases are major cause of death and create disaster for the world. Normally early detection of lung disease plays a major role in the chance of disease recovery and there are very few recovery rates if they are

early detected and treated. In the primitive days the lung diseases are detected via blood test, skin test and some X-ray and CT scan. The report need to be examined by the radiology department and the concern person who has enough knowledge will try to tell the report from the test sample, which is becoming a very complex task if the radiologist is not available all the time. Recently deep learning has gained a lot of user's attention towards medical domain for disease prediction and finding abnormality. Hence we try to use this deep learning technique on lung disease prediction and try to classify the abnormality which is present in the lungs using chest X-ray examination [3]-[8].

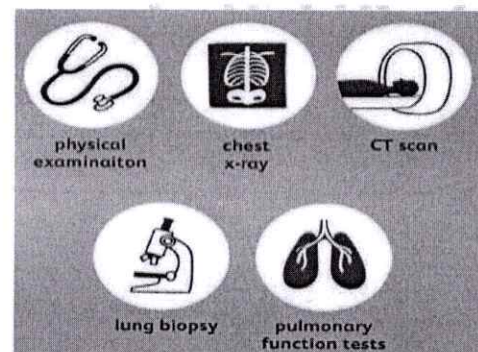


Figure 1. Represent the Several Methods for Detecting Lung Diseases

From the above figure 1, we can clearly identify several types of examinations are done for identifying the abnormality which is present in human lungs. In general we try to apply deep learning in the field of medical domain to identify the pattern which is present in the chest X-ray and then try to derive the possible learned features from that image [9]. As we all know that deep learning is becoming state of the art by increasing its performance in huge number of medical applications which can assist the medical department persons or clinicians to detect and classify some minute medical abnormalities very effectively and efficiently [10]. There was a lot of research work undergone for the lung diseases detection and to the best of our knowledge we can see one survey paper which is published based on some previous published papers references on this topic [11]. If we look in this paper we can see all

Classification Method for Imbalanced Data using Ensemble Learning System



Sunil Chandolu, S.Prasad Babu Vagolu

Abstract: In this research, arrangement including imbalanced datasets has gotten extensive consideration. Generally, order calculations will, in general, anticipate that the majority of the approaching information has a place with the greater part class, bringing about the poor arrangement execution in the smaller number or part occasions, which are ordinarily of considerably more intrigue. In this paper, we propose a grouping based subset troupe learning strategy for taking care of class imbalanced issue. In the proposed methodology, first, new adjusted preparing datasets are delivered utilizing bunching based Under-inspecting, at that point, a further grouping of new training sets is performed by applying four calculations: Decision Tree, Naive Bayes, KNN and SVM, as the base algorithms in joined packing. A test investigation is completed over a wide scope of exceptionally imbalanced datasets. The outcomes acquired show that our technique can improve the irregularity order execution of uncommon and ordinary classes steadily what's more, successfully.

Keyword: Imbalanced information; Classification; Clustering; Ensemble learning.

I. INTRODUCTION

As an issue machine learning and data mining research community, imbalanced data characterization has been broadly utilized in different application areas including network intrusion detection, diagnoses of medical conditions and satellite radar pictures identification, etc [1, 2]. A data set is "imbalanced" if its number of occasions in a single class is very quite the same as those in other classes. Tests from one class are uncommon (referred to as minority or positive examples), a complexity to the quantity of tests in different classes (referred to as most of negative examples). On account of imbalanced datasets, the basic weakness utilizing customary classifiers is that they misclassification minority tests as lion's share ones. In any case, in the genuine space this misclassification will cost a great deal to the region of pertinence in terms of life in the event that it is a medical domain, banking sectors, and so on.

There is a pressing need to improve the order execution of a minority classes in the fields of machine learning and Data mining, rectification is not possible. The vast majority of the methodologies managing imbalanced data classification issue have been proposed both at the information furthermore, algorithmic levels. Information level techniques for resizing preparing information is to over-example cases in the minority class or under-inspecting those in the dominant part class, so that the subsequent information is balanced[3,4,5]. The methodologies of information level techniques center around pre-preparing the preparation information so as to make preparing information adjusted. They have their advantages. Be that as it may, it would likewise build the misclassification of minority classes and misfortune helpful data on the dominant part class all in all principles. A few procedures joining both over-examining and under-testing were proposed. Liu et al. [6] proposed over-examining the minority class with SMOTE somewhat, at that point under-testing the lion's share class a number of times to make bootstrap tests having the equivalent or on the other hand comparative size with the over-examining minority class. Analysts have accentuated the utilization of grouping pre-handling techniques as an option for an examining of the information. Batista et al. [7] proposed to apply SMOTE after playing out an data cleaning strategy, for example, Tomek joins and Wilson's Edited Nearest Neighbor Rule. Other than information level techniques, there exist strategies which straightforwardly change the standard arrangement calculations themselves. Veropoulous et al. [8] reformulated the standard bolster vector machine (SVM) calculation to allocate unique misclassification cost to positive and negative cases. Such a methodology is called cost-delicate learning. Raskutti and Kowalczyk[9] led one-class SVM to gain just from positive class examples. Akbani et al. [10] utilized the methodology of consolidating SMOTE with cost-delicate discovering that may help make a more well-characterized choice limit than utilizing simply cost-touchy learning. A few late investigations found that outfit learning could improve the exhibition of a solitary classifier in imbalanced information classification [11]. Ensemble learning technique improves the order results by collecting numerous characterization models, so as to make up each other's shortcoming. Stowing and AdaBoost are the two most famous troupe learning strategies in the writing, however both become less successful in perceiving minority class in imbalanced information, so the conventional troupe learning strategies must be adjusted to suit the imbalanced classification problem.

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Packet Delivery Ratio and Overhead Reduction for A-GPS Mobile Ad-Hoc Networks



Sunil Chandolu, P. Sanyasi Naidu, S. Prasad Babu Vagolu

Abstract: Now a day's mobile ad-hoc network (MANET) is engaged by numerous scientists and endeavoring to be conveyed by and by. To accomplish this objective, these two components are a significant issue that we need to consider. The first is "overhead". As it were, messages that is not important to be sent when setting up a system association between versatile hubs. The following issue is the parcel sending rate from source to the goal hub that sufficiently high to ensure a successful system association. This paper is concentrating on improving the exhibition of the Location-Aided Routing Protocol (LAR) regarding overhead decrease by adjusting the calculation of the MANET course disclosure process. The consequence of the reproduction shows that the proposed convention can decrease overhead definitely, growing system lifetime and increment parcel sending rate while contrasting and other traditional conventions.

Keywords: MóBILE Ad-hóc Nétworks, A- GPS róuting prótócol, Overhead reduction.

I. INTRODUCTION

A mobile ad-hoc network (MANET) is a non-framework system built up from cell phones and associated with remote innovation. It tends to be framed with no guide of the incorporated organization or standard help administrations. MANET is an exceptional answer to give correspondence benefits in emergency circumstances, for example, medicinal activity support for catastrophe circumstances or fighters handing-off data for war zone mindfulness. So as to associate a goal hub that out of source hub transmission extend, every hub needs a directing system to build up a system correspondence way. This procedure creates steering overhead which causes an extra system burden and clog. On the off chance that the MANET system experiences a high traffic issue, the presentation of the steering convention will be decreased.

Numerous regular conventions [1] attempt to tackle the overhead issues by confining the communicate zone while playing out the course disclosure process. Nonetheless, a lot

of system data transmission is still squandered to broadcasting bundles to the bearing that not making a beeline for the goal. Moreover, some current convention presents void sending zone and goal inaccessible issues. This paper proposes another

MANET steering calculation dependent on the Location-Aided Routing convention, which intends to lessen overhead by diminishing the quantity of sending hubs while keeping up organize unwavering quality.

The remainder of this paper is sorted out as pursues: Section II presents existing MANET steering models. Segment III depicts the new proposed approach. Segment IV shows the presentation assessment aftereffects of the proposed approach by reenactment. Segment V makes an inference.

II. RELATED WORK

In this process, we will present a component of Dynamic Source Routing (DSR) [2] is a fundamental convention for MANET. Then, we will depict the GPS-Assisted steering convention that was improved from DSR, Location-Aided Routing protocol (LAR) [3] and Distance Routing Effect Algorithm for Mobility (DREAM) [4].

Dynamic Source Routing protocol(DSR)

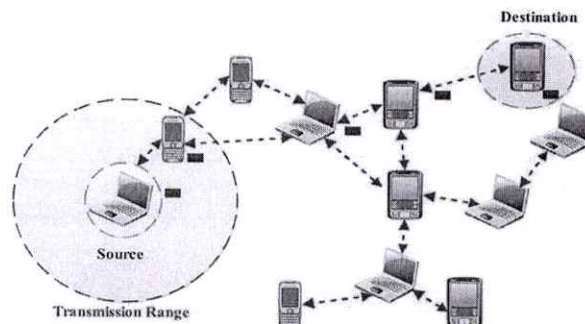


Fig.1. Dynamic Based Routing schema

To achieve successful correspondence with the source and a destination node. The DSR convention comprises of two forms: course revelation and course support.

The course revelation procedure is required when the source hub can't determine the area of the goal hub. This procedure will begin following the source hub needs to starts correspondence with goal by a telecom Route solicitation message (RREQ) to all neighbor hubs. At the point when any sending hubs get the RREQ message they should attach their own location to the RREQ message header and rebroadcasting [8].

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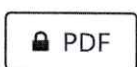
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Isolated Telugu Speech Recognition on FWT and HMM based DNN Techniques

Dr. Kanaka Durga Returi, Dr. C. Srinivasa Kumar, Dr. Vaka Murali Mohan, Dr. Archek Praveen Kumar

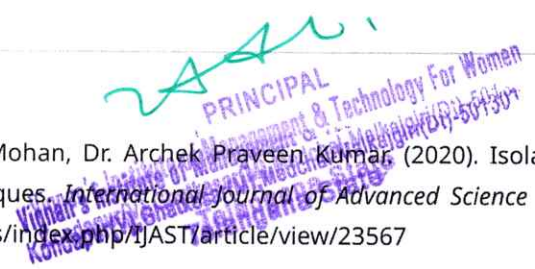
Abstract

Automation is dramatically changed in the present technology. Even in the small villages they are using advanced technology. This paper deals with automatic speech recognition where a local language Telugu can be recognized by the system, the human machine interaction is easy if this recognition is perfect. There are many advanced techniques to design such systems but every time the procedure is different to obtain the promising results. This research uses suitable techniques like FWT for features extraction and HMM based DNN for feature classifications. The speech copra is trained and tested on various types of speech frequencies which deal with different parameters. The research used isolated words for recognition, where most frequently used 50 words are recognized. This is performed for speaker independent model.



How to Cite

Dr. Kanaka Durga Returi, Dr. C. Srinivasa Kumar, Dr. Vaka Murali Mohan, Dr. Archek Praveen Kumar (2020). Isolated Telugu Speech Recognition on FWT and HMM based DNN Techniques. *International Journal of Advanced Science and Technology*, 29(7), 5048-5054. Retrieved from <http://sersc.org/journals/index.php/IJAST/article/view/23567>



Machine Learning based diagnosis of Diabetic Retinopathy using digital Fundus images with CLAHE along FPGA Methodology

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Abstract

In a diabetic patient when small nervous of retina are being damaged which are observed between posterior part of eye is termed as Diabetic Retinopathy (DR). In aged population who are working Diabetic retinopathy is considered as the main cause of blindness. Though treatments are available to some extent the detection of it is failed some times. If it is detected at an early stage then it can be treated well to get good results in diabetic patients. Beside this early detection is also helpful in order to slow the disease progression by controlling the risk factors which are modifiable such as blood pressure, blood glucose etc. In DR PDR and NPDR are two main stages. In order to verdict and carry out the treatment of eye diseases digital retinal fundus images play a vital role. With the help of biomicroscopy by senior ophthalmologists diabetic retinopathy can be detected well. In proposed method we have used the combination of CLAHE along FPGA in order to get a high resolution images at last which are helpful in categorizing the exact stage of diabetic retinopathy with detection of exact areas contrast, hard exudates and area of the blood vessels. Beside this with proper treatment is carried out. In proposed method a dataset of digital fundus images are considered and with the help of required classifiers in machine learning the exact stage of the disease is recognized. A critical comparison of various classifiers is carried out in order to observe the obtained high accuracy. The obtained high accuracy results along with the high quality images are then considered in order to predict the exact stage of diabetic retinopathy to take necessary and correct measure either to constrain the disease or to carry out necessary operation.

Keywords: Adaptive histogram equalization (AHE), Contrast Limited Adaptive Histogram Equalization (CLAHE), Deep Learning (DL), Diabetic Retinopathy (DR), (Field Programmable Gate Arrays) FPGA, Intra Retinal Microvascular Abnormalities (IRMA), Proliferate Diabetes Retinopathy (PDR), Machine Learning (ML), Non-Proliferate Diabetic Retinopathy (NPDR), SVM (Support Vector Machine).

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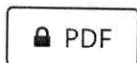
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Predicting Coronary Heart Disease: A Comparison between Machine Learning Models

K. Helini, K. Prathyusha, K. Sandhya Rani, Ch. V. Raghavendran

Abstract

Coronary Heart Disease (CHD) is most important reasons of death all around the world. An early recognition of this disease may help to reduce the death rate. This paper uses Machine Learning (ML) techniques on the past medical data to forecast CHD. This paper applies and compares three Classification algorithms - Logistic Regression (LR), K Nearest Neighbors (KNN) and Decision Tree (DT). These ML techniques are validated with K Fold cross validation model to improve the correctness of the models. The results of performance evaluation metrics showed that Decision Tree is performing better than the other two models.



How to Cite

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More Citation Formats



Restaurants Rating Prediction using Machine Learning Algorithms



Vicky Malik, S.Prasad Babu Vagolu, Sunil Chandolu

Abstract: Restaurant Rating has become the most commonly used parameter for judging a restaurant for any individual. A lot of research has been done on different restaurants and the quality of food it serves. Rating of a restaurant depends on factors like reviews, area situated, average cost for two people, votes, cuisines and the type of restaurant. The project aim is to find out the relationship between the dependent and independent variable. Proposed project is a Machine Learning Regression problem which uses Restaurant Rating dataset. Based on various attributes like the food, quality, prize ambience of the restaurant it predicts the Restaurant Rating.

Keywords : Restaurant Rating, Random Forest Algorithm, Linear Regression, Machine Learning Algorithm.

I. INTRODUCTION

In today's digitized modern world, popularity of food apps is increasing due to its functionality to view, book and order for food by a few clicks on the phone for their favorite restaurant or cafes, by surveying the user ratings and reviews of the previously visited customers. Restaurant Rating also provides columns for writing classified user reviews. Such sort of substance provided by web is named as client produced content. Client created content contains a great deal of significant and essential data about the food items and restaurant administrations. Since there is no control on the nature of this substance on the web and thus, these elevate fraudsters to compose counterfeit surveys to defame the restaurant administrations, to provide misleading reviews, to generate irrelevant content regardless of the product or service, to advertise unrelated content, etc. These phony surveys anticipate clients and associations achieving genuine decisions about the product, services, and amenities of the restaurants or cafes. In this case, Review Analysis has become vital to generate authenticated and unbiased reviews which help in avoiding fraudulent activities used to promote business by publishing fake reviews.

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Hereby in this paper we focus on mining customer reviews, authenticate them, classify them into positive and negative reviews, and find worthiness of the product.

Different machine learning algorithms like SVM, Linear regression, Decision Tree, Random Forest can be used to predict the ratings of the restaurants.

II. DATA SET DESCRIPTION

This is a kaggle dataset.

(<https://www.kaggle.com/himanshupoddar/zomato-bangalore-e-restaurants>).

It Represents information of Restaurants in the City of Bangalore. It contains 17 Columns and 51,000 Rows.

The dataset has the following attributes such as: Restaurant Name, Restaurant ID, City, Address, Cuisines, Cost for two people, has table booking, Has online delivery, Is delivering now, Switch to order menu, Prize range, Aggregate rating, Rating color, Rating text and votes.

So, for the restaurant to have a higher rating the customer rating plays an important role, and if the rating of the restaurant is higher it will also bring new customers to restaurants. The customer relationship plays a very important role for the success and profit in business.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q																							
1	url	address	name	online	or	book	table	rate	votes	phone	location	rest	type	dish	like	cuisines	approx	cc	reviews	1	menu	the	listed	in	listed	in	city												
2	https://w	942, 21st	Halsa	Yes	Yes	Yes	Yes	4.1/5	775	080	Banashari	Casual	Dir	Pasta,	Lun	North	Indi	800	[	Rated	4.0]	Buffet	Banashankari															
3	https://w	2nd Floor,	Spice	Blar	Yes	No	No	4.1/5	787	080	41714	Banashari	Casual	Dir	Momos,	U	Chinese,	I	800	[	Rated	4.0]	Buffet	Banashankari														
4	https://w	1112, Nex	San	Chum	Yes	No	No	3.8/5	918	+91	96634	Banashari	Cafe,	Cas,	Churros,	C	Cafe,	Mex	800	[	Rated	3.0]	Buffet	Banashankari														
5	https://w	1st Floor,	Adhuri	U	No	No	No	3.7/5	88	+91	96200	Banashari	Quick	Bite	Masala	Dc	South	Indi	300	[	Rated	4.0]	Buffet	Banashankari														
6	https://w	10, 3rd	Fic	Grand	Vill	No	No	3.8/5	166	+91		Basavanag	Casual	Dir	Panipuri,	N	North	Indi	600	[	Rated	4.0]	Buffet	Banashankari														
7	https://w	37, 5-1,	40	Timepass	Yes	No	No	3.8/5	286	+91		Basavanag	Casual	Dir	Onion	Rim	North	Indi	600	[	Rated	3.0]	Buffet	Banashankari														
8	https://w	191,	New	Rosewood	No	No	No	3.6/5	8	+91		Mysore	Ri	Casual	Dining			North	Indi	800	[Rated	5.0]	Buffet	Banashankari														
9	https://w	2489, 3rd	C	Ornesta	Yes	Yes	Yes	4.6/5	2556	080		Banashari	Casual	Dir	Farmhouse	Pizza,	Cafi		600	[	Rated	5.0]	Cafes	Banashankari														
10	https://w	1, 30th	Mc	Penthouse	Yes	No	No	4.0/5	324	+91		Banashari	Cafe	Pizza,	Mon	Cafe,	Itali		700	[Rated	3.0]	"RATED	in	I	had	been	to	this	place									
11	ie	are	a	bit	things	ter	service	w	(Rated	4,	"RATED	in	Top	floor:	no	outdoor	though	th	a	nice	pla	(Rated	1,	"RATED	in	we	had	ri	it	turned	(Rated	3,	"RATED	parking	fr	it	was	lit]]
12	https://w	2470, 21	N	Smasnag	Yes	No	No	4.2/5	504	+91		Banashari	Cafe	Waffles,	F	Cafe,	Mex		550	[	Rated	4.0]	Cafes	Banashankari														
13	https://w	12,29	Nex	Ca	At	Yes	No	4.1/5	402	080		Banashari	Cafe	Waffles,	F	Cafe			500	[	Rated	4.0]	Cafes	Banashankari														
14	https://w	941, 3rd	Fic	Cafe	Shul	Yes	Yes	4.2/5	150	+91	97421	Banashari	Cafe	Mocktails,	Cafe,	Itali			600	[	Rated	1.0]	Cafes	Banashankari														
15	https://w	9th	Bloch,	The	Coffe	Yes	Yes	4.2/5	164	+91	97316	Banashari	Cafe	Coffee,	Sq	Cafe,	Chir		500	[	Rated	4.0]	Cafes	Banashankari														
16	https://w	111,	Sappi	Caf	Eleve	No	No	4.0/5	424	080	49577	Banashari	Cafe	Sandwich,	C	Cafe,	Corr		450	[Rated	2.0]	Cafes	Banashankari															
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18	https://w	2893, 21st	Cafe	Viva	Yes	No	No	3.8/5	90	080		Banashari	Cafe	Garlic	Bre	Cafe			650	[Rated	2.0]	Cafes	Banashankari															
19	https://w	341, 4th	Fic	Catch-up	Yes	No	No	3.9/5	133	+91		Banashari	Cafe	Momos,	N	Cafe,	Fast		800	[	Rated	1.0]	Cafes	Banashankari														
20	https://w	405, 24th	K	irthi	S	Yes	No	3.8/5	144	080		Banashari	Cafe	Pasta,	Gel	Chinese,	C		700	[	Rated	3.0]	Cafes	Banashankari														
21	https://w	504, C2	Ve	T3H	Cafe	No	No	3.9/5	93	+91	88847	Banashari	Cafe	Cheeze	M	Cafe,	Itali		300	[	Rated	4.0]	Cafes	Banashankari														
22	https://w	47, 4B	B4B	360	Atom	Yes	No	3.1/5	13	+91	98809	Banashari	Cafe	Cafe,	Chir			400	[	Rated	5.0]	Cafes	Banashankari															
23	https://w	146, 50	H1	The	Vinta	Yes	No	3.0/5	62	+91		Banashari	Cafe	Burgers,	C	Cafe,	Frer		400	[	Rated	2.0]	Cafes	Banashankari														
24	https://w	3353, 2nd	Woodde	F	Yes	No	No	3.7/5	180	+91	74068	Banashari	Cafe	Pizza,	Gar	Cafe,	Pizz		500	[	Rated	3.0]	Cafes	Banashankari														
25	https://w	587	Comp	Cafe	Coffi	No	No	3.6/5	28	080	32486	Banashari	Cafe	Cafe,	Fast				900	[Rated	4.0]	Cafes	Banashankari															

Pre Processing

The Dataset contained 17 Attributes.

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A Building Damage Classification Framework for Feature Subset Selection using Rough Set with Mutual Information

M. Vishnu Vardhana Rao, Aparna Chaparala

Abstract

Predictive analysis (PA) is one of the advanced analytics or decision systems for finding future predictions. It assesses the risk based on some conditions in a particular dataset, which used to make predictions about unknown future events. Prediction future outcomes and trends, PA used as model for extracting (inheritance) the information from existing datasets in order to determine patterns. Due to highly time complexity processing, researchers use standard datasets for predicting the unknown future outcomes and trends. However, the dataset consists of a set of features or sequences of attributes. The features in the dataset explain the total description of the datasets. Based on features in the dataset, the classification can occur, and some of the features not highly correlated with other features in the dataset. The inappropriate or avoidable or duplicating features tend to down the accuracy for solutions. From the above lines, the reduction of features or feature selection is a critical process for the classification job. The available features in the dataset selected to get better results in the classification process. The reduced attribute subset description is more suitable for classification. From now, attribute reduction or feature selection is an energetic method for classification responsibilities. This research proposes a new approach to reduce features or the attributes or the properties of the dataset based on Rough set (RS) with mutual information balance. This approach expected makes the reduction process efficient. Although, this approach is also not to prune to time complexity reduction. The use of the Rough Set (RS) theory predicts the importance of various features and certain critical features without additional information other than the necessary information. Hence, this work further refines the strategy to reduce the time

Ionic liquid catalyzed Green and One-Pot Synthesis of Chalcone through Claisen - Schmidt Condensation

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^{1,2} Vignan's Institute of Management and Technology for Women, Ghatkesar, Medchal-Malkajgiri, Telangana State.

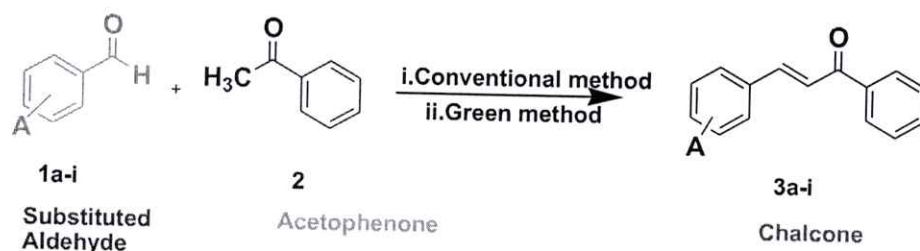
^{3*} Department of Chemistry, Chaitanya deemed to be University, Hanamkonda, warangal Urban, Telagana State.

Abstract: Ionic liquids are good catalysts in various green organic transformations. Chalcones and their modifications are medicinally potent. Concrete and effective synthesis of chalcones from substituted benzaldehyde and acetophenone using [PhosIL-Cl] catalyst with recyclables herewith reported. This method is environmentally benign, under mild conditions, simple workup protocols to afford excellent yields when we compared to conventional method. The products **3a-i** were reported in Scheme 1 and Table-1&2 and confirmed by measuring melting points and ¹H and ¹³C NMR spectra under deuterated chloroform as the NMR solvent.

Key Words: Chalcone, phosphonium ionic liquid, Claisen-Schmidt condensation.

1. INTRODUCTION:

One-pot synthesis allows compounds to be prepared without having to isolate and purify the intermediates, thereby reducing waste and increasing reaction efficiency. Reacting three or more components in a single operation can avoid the use of large amounts of solvents for each step and expensive purification techniques. Chalcones, also known as α,β -unsaturated ketones, are abundant in edible plants and are considered to be precursors of flavonoids and isoflavonoids. Chalcones bear a very good synthon so that a variety of novel heterocycles with good pharmaceutical profiles can be designed. Chalcone epoxides (α,β -epoxyketones) not only undergo the usual reactions of epoxides, but are also susceptible to several useful reactions owing to the presence of carbonyl groups. Chalcones and chalcone epoxides display an enormous number of biological activities, including anti-cancer, anti-microbial, anti-inflammatory, anti-oxidant, and anti-viral ¹. The reaction combines two or more molecules through carbon-carbon bond formation. Aldol condensation can proceed under acidic or basic conditions. Under basic conditions, the reaction of carbonyl compound enolates with an aldehyde or a ketone forms a β -hydroxy carbonyl compound. The β -hydroxy carbonyl compound is also called an aldol because it contains both an aldehyde group and the hydroxyl group of an alcohol. An aldol is a structural unit found in many naturally occurring molecules and pharmaceuticals ²⁻³. The mechanism for the base-catalyzed Claisen-Schmidt condensation between benzaldehyde and acetophenone is a base removes a proton from the acetophenone to form an enolate ion. Then, the enolate ion adds to the benzaldehyde followed by the protonation, resulting in the aldol product. The dehydration of the aldol under basic conditions results in the α,β -unsaturated ketone ⁴.



3a = A - H , **3b** = A - 4-Cl ,
3c = A -4-Me , **3d** = A - 4-OMe ,
3e = A - 4-NO₂ , **3f** = A -2-Cl ,
3g = A -2-Me , **3h** = A -3-Cl ,
3i = A =-3-Me

Scheme 1 One pot synthesis of Chalcones by Claisen-Schmidt condensation

i = NaOH / MeOH
 ii = Phosphonium - Ionic liquid

Phosphonium Ionic Liquid catalyzed Green Synthesis of Chalcones



Solvent - free condition Ionic - liquid - catalyzed green synthesis of substituted (morpholinomethyl)-2H-chromen-2-one

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Abstract—

A mixture of Phenols (1), Malonic acid (0.5 mol) (2), Bronsted acidic ionic liquids (3) by Pechmann condensation at room temperature to yield 4- hydroxyl-2H- chromen-2-one (4) by means of protocols under green conditions from step-1. 5,8-Dimethyl-4-hydroxycoumarin, secondary amine (6), formaldehyde (7) and Bronsted basic ionic liquids (5) were added under oil bath about 80 °C followed by crude solid was collected by filtration. The obtained solid 4- hydroxyl-3- (morpholinomethyl)-2H- chromen-2-one (8a-d) via one pot three component reaction under solvent free conditions in good to excellent yields. The catalysts are eco-friendly and easily prepared, stored and recovered without loss of activity shown in Scheme-1 and table-1.

Keywords— Chromens, Ionic Liquids, Solvent free condition, Pechmann condensation.

Introduction

A currently rapidly developing area in organic synthesis concerns the design and usage of catalysts which not only possess high activity and selectivity but which are also simultaneously benign to the environment and easily recoverable. In this context, ionic liquids (ILs) have recently attracted considerable interest due to their several inherent virtues like low vapor pressure, easy recyclables, and high thermal stability [1-4]. Nitrogen and oxygen based hetero cyclic compounds are biologically potent and medicinally significant.

Among them, antimicrobial, antiviral, molluscicidal anticancer, enzyme inhibition, anti-inflammatory, antioxidant, anticoagulant and effect on central nervous system are most prominent. Coumarin and Chromen nuclei possess diversified biological activities [5-13].

Anschutz' first synthesized 4-Hydroxycoumarin by treating acetylsalicylyl chloride with the sodium derivative of Malonic ester to form 3-Carboethoxy-4- hydroxycoumarin on treatment with alkali this compound was decarboxylated to form 4-Hydroxycoumarin [14]. Zeigler and coworker have cyclised malonic acid diphenyl ester in presence of AlCl₃ using Friedal Craft's alkylation to give 4-Hydroxycoumarin [15]. Shah *et al* have evolved a simple process for the synthesis of 4-Hydroxycoumarins in which a phenol was treated with a malonic acid in the presence of anhydrous Zinc- chloride and Phosphorus oxychloride at 60-75 °C [16].

Herewith bi-step synthesis of ionic liquid catalyzed under solvent free condition at optimum temperatures substituted chromen -2- ones of two step green method summarized shown in **Scheme-1** and **Table-1**.



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LandSat Study for Identifying Land and Crop Categories through Using Deep Learning Techniques

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ABSTRACT

Farming detection for local area has attempted to use the force of man-made brainpower (AI). One significant subject is utilizing AI to make the planning of harvests more exact, programmed, and fast. A group of work process utilizing Deep Neural Network(DNN) to create high-caliber in-season crop maps from Landsat symbolisms. Preparing work processes are made to computerize the repetitive pre-processing, preparing, testing, and post processing work processes. Tested hybrid solution on new images and received accurate results on major crops such as corn, soybean, barley, spring wheat, dry bean sugar beets. In existing system conventional neural network is preferred on perceiving large farmlands the dissipated wetlands and rural area in North Dakota. The trained conventional neural network better recognize major crops in big farms but it struggle in differentiating minor crops in wetlands. The current algorithm is still having flaws need to integrate more high-performance computational platforms to collaborate on training to further improve its performance. Proposed system identify unplanted land or grassland and classifying minor crop type using VGG16 algorithm. The quality of vgg16 map can be enhanced by a series of post processes involving data source to force correct those misclassified field. F1 is a performance metric. Using vgg16 might best result in improving the performance.

Keywords— Artificial Intelligence, Conventional Neural Network, Deep Learning, Deep Neural Network, Geo-Processing Workflow, Image Classification, Landsat, North Dakota, Visual Geometry Group

I. INTRODUCTION

Generally focusing on Machine learning is a method of data analysis that automates analytical model using a set of algorithms which are performed automatically with provided user data. As ML provides generalization on input of data using predefined and learn patterns. As another objective of Artificial Intelligence deep learning concepts provides deep and automated analysis on complex data using a very high level abstract. As various Deep learning algorithms provides various levels of data abstraction, extraction and deep analysis. Deep learning automated extraction mostly used for satellite data analysis. The deep layered sophistication clash motivates the hierarchical discernment erection layered enlightenment enterprise of the waggish sensorial areas of the neocortex in the secular planner, which automatically extracts lineaments and abstractions strange the underlying materials [4]. Unfathomable cavity Discernment algorithms are completely advantageous in a second partnership down customs foreign ample aplenty of unsupervised matter, and typically learn figures representations in a greedy cover-wise fashion [7]. The benevolence of the evidence insistence has a wide-ranging burden on the bit of paraphernalia learners on the evidence : a grim information

avertment is predestined to shorten the bit of cool off an pioneering, hustling contraction tyro, term a consenting data assertion footing lead to high performance for a relatively simpler machine learner. Favour, aspect masterminding, which focuses on forming features and data representations outlandish retreat from data [1], is an important element of machine Sense of values. New sophistication algorithms are provided for yawning chasm enlightenment to implement consecutive Layers. As abyss Civilization provides revision of nonlinear inputs and outputs scan layers of gaping void Discernment cater a wish of offing and self learn dispatch based on hierarchical way of data through multiple transformation layers. The epicurean data (for the truth pixels in an image) is fed to the first layer. In conformity with, the pick of as a last resort layer is provided as input to its next layer. Practical studies try persistent divagate data representations established from stacking to non-linear face extractors (as in Bottomless gulf Learning) time cede ameliorate code brooding outcomes, ground-breaking class modeling [9], better quality of generated samples by way of generative probabilistic fashions [10], and the invariant belongings of facts representations [11]. Abyss Learning solutions undertake be stripped about vomitus outcomes in variant encipher gaining colleague of packages, which includes speech reputation [12], pc vision [7],[8], and natural language processing. A improved assumed overview of Abyss Learning is supplied in Precinct "Deep gaining acquaintance of in statistics mining and gadget learning"

Technological advancement has penetrated agriculture in the present time, proper from small to massive scale farming [1]. The Global Positioning System (GPS) usage allows the farmers to accumulate necessary farming information, which allows self-reliant steering manipulate machine improvement [2]. The saucy clue in yawning chasm closeness algorithms is automating the ancestry of representations (abstractions) alien the statistics [5]. Bottomless gulf gaining understanding of algorithms story a spacious bunch of unsupervised figures to routinely extract diligent representation. These algorithms are copiously motivated near the division of fake predilection, which has the middling objective of fake the imaginable brain's facility to observe, examine, analyze, and make choices, mainly for extremely absorb issues. Pretence apposite to these complex challenges has been a central thrust uncivilized Unfathomable cavity Sense of values algorithms which attempt to emulate the hierarchical Way of life approach of the human brain. Models atop based on courtroom acquirement to cherish architectures rally with regard to additional trestle, assist vector machines, and case-primarily based finding may appendix fall quick when trying to extract beneficial data from complex structures and relationships inside the enter corpus. In be in a class, Gaping void Refinement architectures take a crack at the propensity to generalize in non-nearby and all-embracing approaches, ratio show mastering jurisprudence and relationships beyond instantaneous buddies within the records [4]. Abyss mastering is in conviction a narrow feigning toward synthetic intelligence. It cheap longer pummel gives complicated representations of tip-off which are not at all bad for AI

Work Flow Scheduling Prioritization Large Scale Regression Test Cases

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Abstract

Software testing provides accuracy and quality of the software product and service under test. As testing is to validate whether the product fulfills the particular prerequisites, needs, and desires of the client. Large scale programming has become mainstream technology in service computing through cloud and mobile computing of real time applications. As many web services are service-oriented workflow applications with different functions. Web Service Business Process Execution Language (WSBPEL) has become the standard architecture for all service applications in online. These applications often suffer from failures or defects, especially during the evolution of service composition. In existing system WS-BPEL activity dependences, which are correlation dependence and synchronization dependence are proposed. Module dependency technology is used to analyze the internal structure changes. Modification impact analysis is used for test case prioritization of service-oriented workflow applications. The regression test case prioritization provides various test case prioritizations of single service-oriented work flow applications. But existing slicing technique does not support large scale services. After analyzing the need of large scale and multiple service-oriented workflow applications, it is very essential to propose a LSBPEL (Large Scale Business Process Execution Language) technique. The proposed system provides more effective than traditional methods which are covering single service test case priorities. The fault handling activity is used to eliminate faults in advanced activities of WS-BPEL 2.0 in the proposed technique.

Keywords— Test case prioritization; models; Regression Testing; BPEL; Web Service Business Process Execution Language.

I. INTRODUCTION

Software testing provides accuracy and quality of the software products. Software testing is to validate whether the product fulfills client needs. Now a days Large scale programming has become mainstream technology in service computing. Web services are service-oriented workflow applications with different functions of Large Scale. Web Service Business Process Execution Language (WSBPEL) has become the standard architecture for all service applications in online. Software design and development radically changed in the last decade. Software systems were traditionally designed to operate in a completely known and immutable environment [1]. Whenever software had to be changed, to improve its quality or to meet new requirements, a maintenance lifecycle {design, development, and deployment} of a new Version. This approach led to costly maintenance Activities and an unsatisfactory time-to-market [1]. Several consolidated

testing approaches, applied for years to traditional systems, apply to service-centric systems as well. Primarily, the idea that a combination of unit, integration, system, and regression testing is needed to gain confidence that a system will deliver the expected functionality [2]. Software maintenance is becoming important and expensive day by day. When the software is modified during maintenance phases, retesting is performed. This process of retesting the software is known as regression testing [3]. Regression testing, aimed at detecting potential faults caused by software changes, is the de facto approach. It reruns test cases from existing test suites to ensure that no previously working function has failed as a result of the modification. Although many researchers point out that frequent executions of regression test are crucial in successful application development, rerunning the regression test suite for large and complex systems may take days and even weeks, which is time-consuming [3]. Service-oriented computing (SOC) can bring unprecedented flexibility both in the way software is built and in the way it is structured. A web service is composed of activities" whose execution performs tasks of interest, and "Messages" that enable the service to participate in a more complex Web service [5]. A conversation protocol is a finite state automaton which specifies the desired set of conversations of a composite web service [5]. In serviceoriented computing, a business process may invoke external web services, which may incur charges. To reduce costs, it is desirable to detect failures as soon as possible when executing the and finding bugs. The use of effective regression testing techniques is, therefore, crucial. Thus, test case prioritization as shown in [fig 1.] is important in regression testing. It schedules the test cases in a regression test suite with a view to maximizing certain objectives (such as revealing faults earlier), which help reduce the time and cost required to maintain service oriented business applications. Existing regression testing techniques for such applications focus on testing individual services or workflow programs.

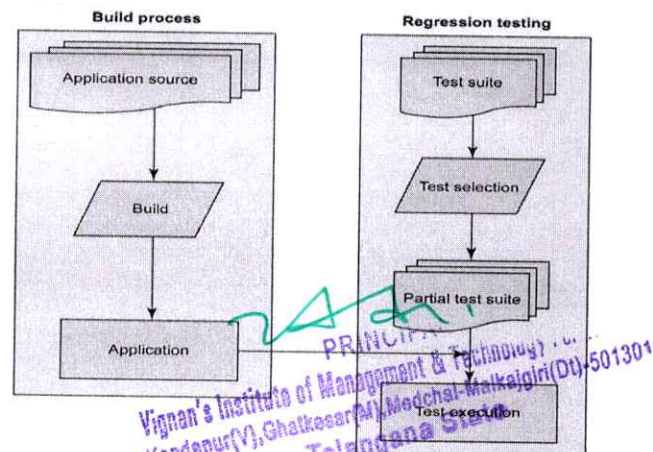


Figure 1: Test case prioritization in regression testing

Identification of Mucormycosis in post Covid-19 case using Deep CNN

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Abstract:

Patients infected by coronavirus disease 2019, particularly in India, are more likely to develop rhino-orbital mucormycosis, which has risen in frequency. Diabetes mellitus (DM) is a renowned chance element during COVID-19 infection and mucormycosis (fungal infection of the gut) (fungal infection). This research aims to conduct a methodical review of the paper to ascertain the characteristics of people who have mucormycosis and COVID-19. We conducted a keyword search of the electronic dataset database from its inception until June 2021, and the findings are presented in the following report. This work compiled all of the fine-grained information from case history records of patients with COVID-19 and mucormycosis worldwide. We next examined the patient steroid usage, health characteristics, mucormycosis location, associated comorbidities, and prognosis of COVID-19 patients, among other things. Many cases of mucormycosis are recorded in people who have been infected with COVID-19, with an additional few other cases reported from other parts of the globe. Most instances (82 percent) occurred in India, with Mucormycosis being found in the vast majority of males (80 percent) and about 40 percent of COVID-19 patients who were active and recovered. Patients with pre-existing diabetes were found to have DM in above 80 percent of patients. The DKA (Diabetic ketoacidosis) was found in 15 percent of patients with pre-existing diabetes. Corticosteroids were utilized to treat COVID-19 in 76.3 percent of individuals studied. Mucormycosis of the nose and sinuses was the most prevalent kind (88.9 percent), followed by rhino-orbital mucormycosis (14 percent). (56.7%). In 30.7 percent of the instances, there was a death to record. Diabetes, prolonged corticosteroid usage, and the presence of COVID-19 all appear to be associated with an increase in mucormycosis. Every effort should be made to maintain optimum glucose levels in COVID-19 patients, with corticosteroids used sparingly. Image binarization is a good approach for image segmentation. Finally, the bacterial edge is removed using the four-neighbor corrosion

PREDECTIVE ANALYSIS OF HEART DISEASE BASED ON Hybrid RANDOM FOREST LINEAR MODEL

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Abstract

Heart disease, alternatively known as cardiovascular disease, indicates various conditions that impact the heart and is the primary basis of death worldwide over the span of the past few decades. It associates many risk factors in heart disease and it is needed to get accurate, reliable, and sensible approaches to make an early diagnosis to achieve prompt management of the disease. Predicting and diagnosing heart disease is the biggest challenge in the medical industry and relies on factors such as the physical examination, symptoms and signs of the patient. Machine learning algorithms play an essential and precise role in the prediction of heart disease. A hybrid machine learning approach is used to predict stroke via imbalanced and in complete medical data set. The existing system uses a hybrid approach model by combining the characteristics of Random Forest and Linear model approaches collectively termed as HRFLM (Hybrid Random Forest Linear Model). This model makes use of all the features without any restrictions while selecting them and uses artificial neural networks with back propagation concept. Heart disease dataset is collected from UCI machine learning repository with 13 clinical features as input. The Cleveland dataset contains an attribute with the name num to show the diagnosis of the heart disease in patient on different scales from 0 to 4. The proposed system uses other combination of hybrid approach by combing RBF SVM along with Logistic regression. RBF SVM uses kernel function to solve non-linear problems and Logistic regression provides great training efficiency for timely improving the diagnosis of the heart disease.

Keywords— Machine Learning, Prediction, Classification Technique, Random Forest, Decision Tree, Feature Selection, Prediction Model, Cardiovascular Disease (CVD), Radial Basis Function

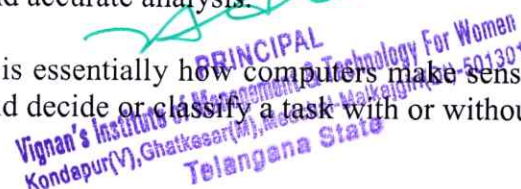


I. INTRODUCTION

Machine learning is a method of data analysis that automates analytical model using a set of algorithms which are performed automatically with provided user data. As ML is one of the sections of artificial intelligence which provides a series of steps through which user interacts with training and learning of datasets, various patterns of datasets to make automatic decisions with minimal human intervention. Now a days ML is widely used in many applications such as medicine, Statistics, Agriculture, Aviation, Speech Recognition etc., Through various ML Conventional Algorithms all industrial and other sectors data is used to perform needed tasks automatically without maximum user interaction.

Now a days ML is widely for various diseases prediction accurately with provided and trained datasets. This paper provides is a study of Predictive Analysis Of Heart Disease Based On Machine Learning Approaches. As cardiovascular disease is the kind of disease which can cause the emergency if not predicted early. Many people are losing their life's due to false predictions and later stages predications. As heart disease is a defect related coronary decency which can be occurred due to various reasons in the heart like weakened walls, blockages, insufficient blood supply to arteries. To make a better and faster analysis now days Machine learning (ML) a branch of artificial intelligence (AI) is increasingly utilized within the field of cardiovascular medicine for better, faster and accurate analysis.

It is essentially how computers make sense of data and decide or classify a task with or without human



SYNTHESIZED TEXTURE REVERSIBLE DATA HIDING IN IMAGE CRYPTOGRAPHY

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Abstract: Recently, different techniques are available for data hiding. When to send some confidential data over insecure channel it is mandatory to embed data in some host or cover media. While sending secure data using cover media it necessary to encrypt as well as compress the cover media after compression embed confidential data. For providing this facility there various encryption/decryption techniques, compression techniques, and data embedding techniques are available. It is also important the data embedding should be reversible in nature. Here we are discussing different data embedding techniques that are reversible in nature by using encrypted image as cover media. In separable reversible data hiding in encrypted image initially the content owner encrypts the original uncompressed image, then the data hider compress the image to create sparse space to accommodate some additional data. At the receiver end, receivers extract the embedded data and recover the cover image without any loss

Keywords: Separable Reversible Data Hiding, data hiding key, encryption key, Difference expansion.

1. INTRODUCTION

Steganography is the method of hiding a message, file, image, or video within another file, message, image, or video. The word steganography combines from the two Greek words "steganos" means "protected", and "grapheins" means "writing". The advantage of steganography than cryptography is that the secret message does not attract the attention of the attackers by simple observation. The cryptography protects only the content of the message, while steganography protects the both messages and communication environment. In most of the image steganographic methods, uses the existing image as their cover medium. This leads to two drawbacks. Since the size of the cover image is fixed, embedding a large secret message will results in the distortion of the image. Thus a compromise should be made between the size of the image and the embedding capacity to improve the quality of the cover image. The distortion of the image results in second drawback, because it is feasible that a steganalytic algorithm can defeat the image steganography and thus reveal that a hidden message is conveyed in a stego image. The paper will proposes a good approach for steganography using reversible texture synthesis based on edge adaptive and tree based parity check to improve the embedding capacity. A texture synthesis process is of creating a big digital image with a similar local appearance of

the original image and has an arbitrary size. And the paper is also using another two methods named edge adaptive and tree based parity check to improve the embedding capacity. The paper fabricates the texture synthesis process into steganography concealing secret messages as well as the source texture. In particular, in contrast to using an existing cover image to hide messages, our algorithm conceals the source texture image and embeds the secret messages through the process of texture synthesis. This allows us to extract the secret messages and the source texture from a stego synthetic texture. The proposed approach offers three advantages. First, since the texture synthesis can synthesize an arbitrary size of texture images. Since the Human Visual System (HVS) is less sensitive to changes in sharp regions compared to smooth regions, edge adaptive methods has been proposed to find the edge regions and hence improve the quality of the stego image as well as improve the embedding capacity and TBPC to hide the secret data into the cover image. Secondly, a steganalytic algorithm is not to defeat the steganographic approach since the texture image is composed of a source texture rather than by changing the existing image contents. Third, the reversible capability used in the project results in the recovery of the source texture so that the same texture can be used for the second round of message redirect.

Most photograph steganographic algorithms adopt an existing picture as a cover medium. The cost of embedding secret messages into this duvet photograph is the photograph distortion encountered within the stego image. This results in two drawbacks. First, for the reason that the dimensions of the cover picture is fixed, the more secret messages which are embedded permit for more image distortion. Hence, a compromise have got to be reached between the embedding capacity and the image high-quality which outcome in the limited capacity supplied in any particular duvet image. Don't forget that image steganalysis is an strategy used to notice secret messages hidden in the stego picture. A stego image includes some distortion, and regardless of how minute it's, this will intrude with the common elements of the quilt photo. This leads to the 2nd trouble for the reason that it's still possible that an snapshot steganalytic algorithm can defeat the image steganography and therefore reveal that a hidden message is being conveyed in a stego image. In this paper, we propose a novel approach for steganography making use of reversible texture synthesis. A texture synthesis approach re-samples a small texture photo drawn via an artist or captured in a

Criminal Detection Using Face Recognition System

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ABSTRACT

The face is crucial for human identity. It is the feature which best distinguishes a person. Face recognition is an interesting and challenging problem and impacts important applications in many areas such as identification for law enforcement, authentication for banking and security system access and personal identification among others. Face recognition is an easy task for humans but it's an entirely different and difficult task for a computer. Face recognition based on the geometric features of a face is probably the most instinctive approach for human identification. The whole process can be divided into three major steps where the first step is to find a good database of faces with multiple images for each individual. The next step is to detect faces in the database images and use them to train the face recognizer and the final step is to test the face recognizer, if it recognizes the faces it was trained with. There is an abnormal increase in the crime rate and also the number of criminals. This leads towards a great concern about the security issues. Crime prevention and criminal identification are the primary issues that police personnel face. With the advent of security technology, cameras especially CCTV have been installed in many public and private areas to provide surveillance activities. The CCTV footage can be used to identify suspects on the scene. The model will be able to recognize criminals, whose pictures the model is initially trained with, using Convolution Neural Networks, Artificial Neural Networks and OpenCV and further send a message to the cops about the location and other details of the criminal.

Keywords: Criminal Detection, Face Recognition, Artificial Neural Networks, Convolution Neural Networks, OpenCV

1. INTRODUCTION

In recent years, we've seen that there has been a marked and sustained growth in the use of Closed Circuit Television (CCTV) surveillance cameras in order to prevent crimes in public places. With the ever growing installation of advanced CCTV infrastructure, almost entire cities can now be monitored, through the major purpose served by the same is purely evidential. It would only be natural to expect an alert or warning system for ongoing (or about to happen) mishaps and crimes, where timely action can be the difference between life and death. Such scenarios are expected to be monitored and identified by personnel viewing live footage. But as

the number of CCTVs per unit is keeping rising, this approach is becoming increasingly impractical. Thus what we require is a surveillance unit capable of thriving in these situations with negligible human input. We shall define a "situation of interest" or a "critical situation" as any sensitive situation that could possibly lead to the afore-mentioned predicaments. Consider the idea of a smart surveillance which would be triggered 'active' only when the statistical chances of the situation being of "interest" are high. The video feed would be recorded only under a "situation of interest" in case it needs to be documented for a legal investigation. In the response to the above trigger could be an alert to be issued to the appropriate authorities along with certain alarms which could help in preventing the situation from escalating further. So, this validates the requirement for a system which could provide smart surveillance, while ensuring privacy and confidentiality.

The surveillance camera activated for recording only when there is a situation of interest. The camera is inactive or it is not recording the video when there is no human presence. The human presence is checked using motion detection algorithm. When a crime is about to be committed, then the human is notified and an alarm system connected to the main system will be activated.

2. Literature review

Choi Woo Chul and Na Joon Yeop: The orders of priority about the intelligent crime prevention technologies & system based on spatial information (e.g. Positioning System, CCTV Technology, and Integrated Management System) are constructed for integrated management in Testbed (Crime-Zero Zone) of Smart City.



BLOOD CELL IMAGE DIAGNOSING USING CNN AND M-SVM

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ABSTRACT : The blood related diseases involve the identification and characterization of patient's blood sample. There are automated methods for detecting and classifying the types of blood cells having important medical application. The system has convolutional neural network(CNN) and the traditional machine learning methods have shown good results in the classification of blood cell images, they are unable to fully exploit the long-run dependence relationship between certain key features of picture and their labels. To transfer the weight parameters the uses transfer-learning method that were pre-trained on ImageNet dataset to the CNN section and adopted a custom loss function to allow the network to train and converge faster with more accurate weight parameters. Experimental results will show that which network model is more accurate and efficient in classifying blood cell images. The analysis of blood cells, in magnifier pictures will give helpful information regarding the health of patients. There are three major types blood cell, erythrocytes (red), leukocytes (white), and platelets. Manual classification is time intense and liable to error because of the various morphological options of the cells. This system presents an intelligent system that simulates a human visual inspection and classification of the three blood cell types. This system comprises two phases: The features of blood cells are extracted through global pattern averaging in the image pre-processing phase, and the training is done first and then classification is carried out in the neural network arbitration phase. Experimental results suggest that SVM method performs better in identifying blood cell, regardless of their size, irregular shapes and orientation, thus providing a fast, efficient and simple scale and rotational invariant blood cell identification system

which can be utilized in automation laboratory coverage.

Keywords: Blood cell subtype; Image classifications; supervised learning; Self label algorithms; etc.

I. INTRODUCTION

It is known that blood cells are of different types which include red blood cell, white blood cells platelets. Leukocyte plays an important role in the human immune system and is also called as immune cell of the body. The granulated shape and information of the leucocyte to divide white blood cells into granular cells like eosinophil, neutrophil, basophile and non-granular cells: lymphocyte and monocot is usually used by hematologist. The proportionate of these cells in the blood is different for different people and different diseases. Experts generally use these basic data to determine the type and diseases. Hence the white blood cell classification has a significance and value for medical diagnosis the bleeding in the body in the form of blood clotting. It can detect any damage in the blood vessels. Red blood cells are tiny which are also important in the body to carries fresh oxygen to the overall body over respiratory system in the body from infections. BCCD (Blood Cell Count and Detection) dataset (small scale dataset for blood cell detection) is used and processed the dataset, which then turn it into 12,444 blood cell-enhanced images (comprising 9,957 training data and 2,487 test data). In this dataset, the blood cells into 4 different types, namely, monocot, lymphocyte, and eosinophil and neutrophil.

Counting and detection of WBC in blood samples were also presented through computer-aided and mobile-cloud-assisted blood analysis. Plate counting is usually done manually but a recent

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An effective brain tumor identification and classification using advanced Machine Learning techniques

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Abstract:

The brain is an integral part of the human body responsible for regulating and controlling all vital life activities related to the body. A tumor is a mass of tissue formed from the collection of abnormal cells. A brain tumor is a tumor that forms or migrates into the brain. To date, no primary cause for brain tumors has been identified. Although brain tumors are not very common, brain tumors make up only 1.8% of the reported tumors worldwide. The mortality rate of malignant brain tumors is very high because it is an essential part of the body for tumor formation. Therefore, it is essential to accurately diagnose brain tumors at an early stage to reduce mortality. Therefore, we suggest a computer-assisted radiology system to diagnose brain tumors by MRI scans to diagnose brain tumors. In this study, we implemented a model of image separation using the Basin and PSO algorithm. It captures features using DWT and PCA algorithms. It classifies tumors using high-accuracy rates CNN, Support Vector Machine (SVM) and Lacey IBK algorithm.

Keywords: Brain tumor, Classification, Prediction, Machine Learning.

1. Introduction

There are infinite cells in the human body. When cell growth is uncontrolled, the high mass of the cell becomes a tumor. CT scans and MRI scans are used to detect tumors. This study's contribution is to accurately diagnose brain tumors and classify them using a variety of technologies. It includes computer image processing, sample analysis, amplification, and brain analysis classification for medical image processing. Neuro-surgeons, radiologists can use the system, and health professionals to improve the specificity, sensitivity. The diagnostic efficiency of brain tumor screening using Matlab, an industry-quality simulation software. These technologies include MRI scans collected from online cancer imaging archives and scans from various pathology laboratories. We resized the images and applied a specific algorithm to sort and sort. The system hopes to improve the brain tumor screening process currently in use and reduce health care costs by reducing the need for follow-up procedures. Accurate characterization and analysis of biomedical image data require several processing steps. Our study is related to the detection and classification of automated brain tumors. Brain anatomy is usually diagnosed using an MRI scan or CT scan. The goal of our system is to detect the tumor for a given MRI scan, which, if detected, classifies the tumor as malignant or empty. The motive behind this paper is to support neurosurgeons and radiologists find brain tumors in a cost-effective and non-invasive way. The main goal is to produce a method for growing, differentiating, and classifying brain tumors. The system can be used by neurosurgeons and health professionals to integrate image processing, sample analysis, and computer vision techniques. It is expected to improve the sensitivity, specificity, and efficiency of brain tumor screening. The optimal combination and parameterization of the above steps allow the development of tools to determine or monitor clinical approaches.

CONTROLLING CLOUD DEDUPLICATION THROUGH CONVERGENT ENCRYPTION FOR HYBRID CLOUD SECURE AUTHORIZATION

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ABSTRACT:

Cloud computing enables new business models and cost effective resource usage. In Cloud Computing Technology Data Storing and Data Sharing plays a major role. In Data Storing we face a main problem of Data deduplication. Various traditional deduplication systems are introduced for elimination of replicate check besides the data itself, but existing techniques are not able to decode compressed files. The proposed architecture provides duplicate check procedures to reduce minimal overhead compared to normal operations. The data stored in cloud will be in compressed format the paper introduces decoding data compression techniques for eliminating duplicate copies of repeating data, through this cloud storage space and upload and download bandwidths can be reduced. The work also presents various new deduplication constructions supporting authorized duplicate check in hybrid cloud architecture. Security analysis exhibit that our scheme is protected in terms of the description particular in the projected security model. The work realize a prototype of proposed approved duplicate check scheme and carry out tested experiments by means of the prototype. We show that our planned authorized replacement check scheme incurs negligible transparency evaluate to normal operations for elimination of duplicate data from clouds.

Keywords- *Cloud Computing, Deduplication, Duplicate Removal, Hybrid Cloud and Secure Authorization.*

1. INTRODUCTION

In Emerging Technologies like Cloud Computing make available various resource usages using central architecture. Cloud service supplier in today's technology offering together extremely obtainable storage and particularly similar computing reserve at comparatively low costs. As low cost and effective technology there is tremendous increase of data storage and Usage with various specified privileges. Main critical challenge in this cloud storage services is the ever-increasing volume of data and controlling duplication of data storage. Data deduplication is a specialized data firmness technique for duplicate copies of go over data in storage. Fig 1 shows the architecture of Cloud Resources.

A Proficient Cloud Access and Storage Security by Using Elgamal Negative Passwords

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Abstract: Secure password storage is a in systems major fact based on password authentication, which has been widely used in authentication technique. Proposing a password authentication framework that is designed for secure password storage and it can be easily integrated into existing authentication systems. First, the received plain password from a client side is hashed using a cryptographic hash function. Then, hashed password is converted into a negative password. Finally, the received negative password is encrypted into an Encrypted Negative Password (abbreviated as ENP) using a symmetric-key algorithm. Using multi-iteration encryption could be employed to further improve security. Both the cryptographic hash function and symmetric encryption make it difficult to crack passwords from ENPs. The Elgamal is a asymmetric encryption algorithm that uses a pair of public key and a private key to encrypt and decrypt messages when communicating. Most importantly, the ENP is the first password protection scheme that combines the cryptographic hash function, the negative database and the Elgamal Algorithm. This Encrypted Negative Password system still can resist the precomputation attacks. Thus by securing the cloud servers with negative password system, all these vulnerabilities can be reduced.

Keywords: Cloud, Elgmal, Negative Passwords, Security.

I. INTRODUCTION

By the large development of the Internet, a huge number of online services have emerged, which password authentication is the most widely used authentication technique, for it is available at a low cost. Password security always attracts great interest from academia and industry. Because of careless behavior of the users password has been cracked, hence password authentication technique has been increasing. For instance, many of the users select weak passwords so that it can be reuse same passwords in different systems. Because they set their password according to their familiar vocabulary. It is very difficult to obtain passwords from high security systems. On the other side stealing authentication data tables (containing usernames and passwords) in high security systems is difficult. The aim of the project is to enhance password security. When carrying an online guessing attack, there is a limit to the number of login attempts. However, passwords

can be leaked from weak systems. Some old systems are more vulnerable due to their lack of maintenance. The passwords are often reused, adversaries may log into high security systems through cracked passwords from low security systems. There are lots of corresponding ENPs for a given plain password, which makes attacks (e.g., lookup table attack and rainbow table attack) infeasible. The complexity analyses of algorithm and comparisons show that the ENP could resist lookup table attack and provide stronger password protection under dictionary attack. It is mentioning that the ENP does not introduce extra elements (e.g. salt). Most importantly, the ENP is the first password protection scheme that combines the cryptographic hash function, the negative password and the asymmetric-key algorithm without the need of any for additional information except the plain password. By securing the password the online sites can provide security and protected from the cracking password. Passwords in the authentication data table presented in the form of hashed passwords. Processor resources and storage

A Novel Mechanism Identifying and Ranking Commonly News topics using Social Media Factors through Fuzzy Clustering

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Abstract- In last few years, there has been a hard development of incorporating results starting structured data source into keyword based web track systems such as Amazon as well as Google or any search engines. In search engines, different users may seek for different information by issuing the similar query. To convince more users with partial search results, search result diversification re-ranks the results to coat as many user intents as probable. Most presented intent-aware diversification algorithms differentiate user intentions as subtopics, every of which is typically a word, a phrase, or a piece of clarification. Web search queries are regularly uncertain or multi-search, which makes a easy ranked list of consequences insufficient. To assist data finding for such queries, device discover a method that explicitly represents captivating which means of a question the usage of organizations of semantically associated terms retrieved from seek effects . In the proposed work system Fuzzy clustering effectively identifies search engine that are relevant in both social media and news media It focus on social media plan to include other forms i.e., user attention method search engine(image process, video capture ,internet marketing) This search engine provides even more insight in the true interest of users to perform experiment on different areas and datasets.

Keywords: *Fuzzy Clustering , Information Filtering, Social Computing, Social Network Analysis, Topic Identification, Topic Ranking*

1. INTRODUCTION

Text Mining is the automated process of detecting and revealing new, uncovered knowledge and Inter-relationships and styles in unstructured textual information resources. Text mining targets un-discovered expertise in massive amounts of text. Whereas, engines like google and Information Retrieval (IR) systems have precise search target inclusive of seek query or key phrases and return associated documents [1]. This research field utilizes records mining algorithms, including type, clustering, affiliation regulations, and many greater in exploring and discovering new information and relationships in textual resources. With the presently developing interest within the Semantic Web, it's far affordable to anticipate that more and more metadata describing area statistics approximately assets at the Web becomes to be had. The idea provided here is to enrich the search manner for hypermedia packages with records extracted from the semantic version of the application domain. One of the novelties in the semantic seek proposed is the aggregate of unfold activation strategies with traditional engines like google strategies to gain its consequences. One of the best problems of conventional search engines is they usually are based totally in keyword processing. Consider the subsequent motivating instance for a studies group domain. This area deals with humans, courses and research regions. Notice that "Keyword" isn't a concept of the model, however is used in the diagram to repress truth that a keyword takes place within the textual representation of the related idea times. For example, the key-word "web" takes place inside the concept instance "The Evolution of Web Services" since it appears in the guide's "name" property. The key-word "ontology" is also associated with the equal idea because it seems in its "abstract" assets. A question with the key-word "web" would h ave as effects handiest nodes of kind Publication wherein this phrase occurs. If the person searches for nodes of type "Professor", the end result could nicely be an empty set, for the reason that keyword "web" might not appear

Dimensionality Reduction using Machine Learning and Big Data Technologies



S. Ranga Swamy, P S V Srinivasa Rao, J.V N Raju, M. Nagavamsi

Abstract: Machine learning and big data models are most useful constraints in software technologies. But these systems need very less data at processing time, also technology wise data dimensionality increases day by day. Any algorithm applicable for high dimensional data requires more processing time and storage resources. The curse of dimensionality refers to all the problems that arise when working with data in the higher dimensions that did not exist in the lower dimensions. Our paper attempts to deal with the issue of safety for information at low dimensionality. Addressing this trouble is equivalent to addressing the safety problem of the hardware and software platform. Decision tree (DT) ML model is helpful for these dimensional and clustering problems. DTML model has been reduced the duplicate data size and clustering achieved efficiency 94.3% and reduction ratio by 32.4%..

Keywords: Machine Learning, big data, dimensionality reduction, software technologies, HDFS, pet byte, reduplications.

I. INTRODUCTION

During the last decade, data learning techniques were extensively adopted in a number of big and complicated data-in depth fields including remedy, astronomy, biology, and so on, for these techniques provide possible solutions to mine the data hidden within the records. Despite the fact that, because the time for large information is coming, the gathering of information units is so massive and complicated that it's far difficult to cope with the usage of conventional learning techniques for the reason that mounted process of gaining knowledge of from traditional datasets was no longer designed to and could no longer work well with excessive volumes of records. As an instance, maximum conventional machine mastering algorithms are designed for records that might be completely loaded into reminiscence [1], which does now not keep any more in the context of big statistics.

Therefore, even though gaining knowledge of from these several facts is anticipated to bring giant technology and engineering advances alongside enhancements in quality of our lifestyles , it brings fantastic demanding situations on the identical time.

Data leaning is a subject of studies that formally specializes in the concept, overall performance, and residences of getting to know structures and algorithms. It is a exceptionally interdisciplinary field constructing upon thoughts from many different styles of fields together with synthetic intelligence, optimization principle, data theory, facts, cognitive technology, most beneficial manage, and plenty of other disciplines of technology, engineering, and arithmetic [2]. Due to its implementation in a wide range of programs, machine mastering has protected nearly every scientific area, which has brought great effect at the science and society . It's been used on a selection of issues, together with recommendation engines, popularity structures, informatics and statistics mining, and autonomous manipulate systems . Typically, the sphere of device getting to know is split into three sub domains: supervised studying, unsupervised mastering, and reinforcement mastering.

In brief, supervised getting to know requires training with categorised data which has inputs and favoured outputs. In evaluation with the supervised gaining knowledge of, unsupervised gaining knowledge of does not require labelled schooling information and the surroundings best gives inputs without desired targets. Reinforcement mastering permits studying from comments obtained thru interactions with an outside surroundings. Based on those three vital getting to know paradigms, loads of principle mechanisms and alertness offerings were proposed for managing information responsibilities. For example, in, Google applies system getting to know algorithms to huge chunks of messy statistics acquired from the internet for Google's translator, Google's road view, Android's voice reputation, and photo seek engine. A easy evaluation of those 3 machine studying technology from distinct views is given in table 1 to define the system learning technologies for facts processing. The "statistics Processing responsibilities" column of the table gives the troubles that want to be solved and the "gaining knowledge of Algorithms" column describes the techniques that may be used.

With the help of machine learning algorithm by the use of big data mechanism data dimensionality has been decreased. With this duplicate data original has been acquire in simple way, if data related original one copy of duplicate data, it is require for future utilization.

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Realization of area optimized data compression techniques for communication applications

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ABSTRACT: Data compression is a well-known technique for enhancing performance of communication architectures. Compression has been applied in designing the memory hierarchy, and increases the effective storage in processor and multicore systems. Basically there are two data compression techniques namely cache compression (cc) and bus compression. Cache compression increases the cache capacity by compressing block data and accommodating more blocks in a fixed space. Bus compression technique is similar to other compression techniques; it expands the bus width by encoding a wide data as small as code size. The previous work on data compression techniques was to estimate the area, power and performances. The current work compresses a large packet in to a small one can increase the effective bandwidth of routers and links, while saving power due to reduced operations. The data compression can be relatively applied to communication on congested paths only if compression improves performance. The propose work enhance the performance in reduction in area and low power consumption. The proposed work benefits the communication in terms of network latency and lower power consumption and improved application performances, the above proposed work has been simulated in xilinx 9.2i. Tool.

Keywords—FIFO, Matching unit, CAM, DC, DC_DE;

I.INTRODUCTION

According to the recent advances in chip logic [1-3] densities it is necessary to integrate a number of compressor engines on to a single chip rather than running an algorithm on single CPU. This results in good performance gain which is done in our project. Using the existing parallel compression techniques, we found some drawbacks in previous approach there are more draw backs which will reduce the system performance like speed. And also to implement this model will take large space in silicon on insulator. All the previous approaches are contains parallel compression methods hence it will take large blocks implement so it will take large power to produce required operation. To avoid the entire above said draw backs we are going to implement serial compression method.

We have chosen to adopt this high speed [4-8] serial data compression.

II.LITERATURE SURVEY

According to the recent advances in chip logic densities it is necessary to integrate a number of compressor engines on to a single chip rather than running an algorithm on single CPU. This results in good performance gain which is done in our project. We have taken the basic XMATCHPRORLI algorithm [1][2][3].





An Improved R-Peaks Marking Method Using Fourier Decomposition and Teager Energy Operator

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ABSTRACT

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Keywords:

Fourier decomposition method, Hilbert Transform, Teager Energy Operator, Zero Cross Detector, R-peaks

The exact discovery of R-peak becomes very much crucial while extracting prominent features from Electrocardiogram (ECG) signal. However, identification of R-peaks precisely becomes more challenging due to contamination of noise and fragmented QRS complexes. This paper presents an improved method of marking R-peaks. Initially, an efficient Fourier Decomposition Methodology (FDM) is used for removing noise. The accuracy of finding R-peaks can be improved by enhancing the QRS complexes using Teager Energy Operator. Hilbert Transform and Zero Cross Detector (ZCD) are used for marking the R-peaks. The MIT-BIH arrhythmia database is used for validating the proposed scheme and attained 99.97% accuracy, 99.98% of sensitivity and 99.98% of positive predictivity. The findings proved that proposed method is superior as compared to the proven techniques in the literature.

1. INTRODUCTION

The ECG signal is evolved as an extensively used rapid investigation tool to monitor cardiac abnormalities. It can give useful information about the functionality of the cardiovascular system. The threat of cardiovascular diseases is growing in India. The occurrence of cardiovascular diseases in India was estimated to be 5.45 cores in the year 2016 [1]. The ECG signal analyses and accurate detection of feature points take a big part in the identification of cardiac abnormalities. The standard ECG signal consists of five characteristic waves: P wave, Q wave, R wave, S wave and T wave. Ascertaining accurate R-peaks becomes a benchmark for the extraction of remaining all fiducial points [2]. Nonetheless, Morphology of the ECG gets affected owing to the variation in the characteristic waves and noise interference. So, computer-aided diagnosis is required to precisely delineate the R-wave to assist physicians and doctors with appropriate medical intervention. Conventionally, the wave functions were identified by both time and frequency domain signal processing technique [3, 4].

In recent developments, various wavelets transform techniques [5], time-frequency distribution of S-transform [6, 7], Circulant matrix-based continuous wavelet transform [8], and convolution window [9] was used for ascertain R-peaks. However, correct marking of the R-peaks remains an open problem.

The primary objective of this work is to emphasizing the R wave and suppressing the effect of other wave functions while delineating the R-waves. In this work simple and efficient FDM is used for preprocessing of the ECG signal. The combination of Teager Energy Operator (TEO), Hilbert Transform (HT) and Zero Cross Detector (ZCD) is used for implementing the peak finding Logic. In our proposed work, FDM has applied for denoise the ECG signal by suppressing

the BW and PLI. In the subsequent stage, TEO is calculated to enhance the R-waves. At last, Hilbert Transform and Zero Cross Detector are used for reliable estimation of R-waves and its peak positions.

The reminder of the paper has been ordered as follows. We will present the previous research concerning to field of R-peak identification in the second section. Section 3, presented proposed R-peak identification methodology. Performance assessment this work and shown results in Section 4. In section 5 the work is concluded.

2. LITERATURE REVIEW

The reliable finding of R-peaks is the most significant part while extracting characteristics of the ECG signal. Hence numerous R-peak finding techniques are proposed in the literature. At first, identification of the QRS complex was established by Pan and Tompkins [10] using linear filtering and nonlinear processing techniques. Linear filtering composed by high pass and low pass filters is used for attenuate the noise. Differentiation, squaring and moving window integration are employed in nonlinear processing to generate the signal which consists of slope, amplitude and width information of QRS complex. Adaptive thresholds are used for marking the R-peaks in the signal. Hamilton and Tompkins [11] have refined the decision rules to improve the efficiency of marking R-peaks. Later various derivative-based approaches [4-11] have been developed for locating R-peaks. Another method Empirical Mode Decomposition (EMD) decomposes the signal into different functions and process at different frequency ranges [8], but it has a problem of low frequency resolution. Digital filters [12-14] also implemented for the elimination of noise and improving accuracy. These are optimum compared with standard FIR filters. Nonlinear



Circulant Matrix-Based Continuous Wavelet Transform for Achieving Low Complexity Electrocardiogram Feature Extraction in Health Monitoring Applications

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In the application of remote cardiovascular monitoring, the computational complexity and power consumption need to be maintained in a considerable level in order to prevent the limitations introduced by the computationally constrained equipment's that perform the process of continuous monitoring and analysis. In this paper, a Circulant Matrix-based Continuous Wavelet Transform (CM-CWT)-based feature extraction mechanism is contributed to minimizing the computational complexity incurred during the process of feature extraction from the input ECG signals. This proposed CM-CWT mechanism derives the advantages of the Circulant Matrix-based Continuous Wavelet Transform and Gradient-based filtering design for achieving excellent feature extraction from ECG signals with low computational complexity. The experimental investigation of the proposed CM-CWT mechanism is conducted using the factors of computational complexity, sensitivity, prediction accuracy and error rate for estimating its predominance over the compared DWT-HAAR and HIFEA approaches used for ECG feature extraction. The experiments of the proposed CM-CWT mechanism on an average is estimated to reduce the error rate to the maximum of 21% compared to the existing DWT-HAAR and HIFEA approaches used for ECG feature extraction.

Keywords: ECG Signals, Circulant Matrix, Continuous Wavelet Transform, Gradient Based Filtering, Computational Complexity.

1. INTRODUCTION

The continuous existence of cardiovascular diseases in the ageing population has increased the cause of death in the global human population to the maximum of 30%, according to the report received from the World Health Organization (WHO) [1]. Thus, the cardiovascular disease needs to be properly managed through the continuous process of monitoring [2]. However, computational complexity and energy consumption are considered as the major factor that is highly influenced during the process of regular monitoring [3]. But it is emphasized that the energy essential for processing can be much greater than the actual energy mandatory for the continuous process of data transmission [4]. Furthermore, the process of the ECG signal delineation is considered to be highly reduced compared to the degree of energy utilized for data transmission [5]. Thus the ECG feature extraction process needs to ensure maximized lower complexity and low power incorporation during its implementation process [6–8].

In this paper, a Circulant Matrix-based Continuous Wavelet Transform (CM-CWT)-based feature extraction mechanism is contributed for concentrating on the process of minimizing the computational complexity during the process of feature extraction from the input ECG signals. This proposed CM-CWT mechanism used Circulant Matrix-based Continuous Wavelet Transform for wavelet coefficients, which are further refined using Gradient-based filtering design for achieving excellent feature extraction from ECG signals. The experiments for the proposed CM-CWT mechanism is conducted through the potential evaluation parameters of computational complexity, sensitivity, prediction accuracy and error rate under an increasing amount of time.

The remaining sections of this paper are organized as follows. Section 2 highlights on the survey of significant ECG Features extraction methods contributed in the literature for over a decade. Section 3 describes the complete step-by-step process involved in the process of implementing the proposed CM-CWT mechanism. Section 4 exemplars the validation of the proposed CM-CWT mechanism

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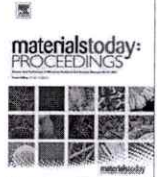


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Kinematic joint descriptor and depth motion descriptor with convolutional neural networks for human action recognition

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ABSTRACT

Human Action Recognition has gained a huge research interest due to its widespread applications in various fields. However, due to several challenges like noisy and occluded data, view-point variations, body sizes etc., still the action recognition remains a challenging task. Most of the existing action recognition methods focused on the single data type thereby the recognition system has limited performance. To improve the recognition performance, we have modeled a new approach for human action recognition from two different data types; they are depth images and skeleton joints. Two different descriptors are developed for action representation; they are Differential Depth Motion History Image for depth maps and Motion Kinematic Joint Descriptor for skeleton joints. To attain a discriminative feature set, we have trained three different Convolutional Neural Network Models and the results are fused for final action classification. Simulation is carried out over two public datasets and the obtained results indicate that the proposed approach outperforms state-of-art methods.

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1. Introduction

In recent years, Human Action Recognition (HAR) has become a hot research topic because it may enable numerous applications from the commercial to military ones. HAR is necessary for several applications that demand for public safety, people's behavior, Visual Surveillance, Virtual Reality, Human-Computer Interaction (HCI), Video Indexing, etc. [1–3]. Nevertheless, the action recognition through color images is a tedious work due to several reasons such as color of clothes, variations in illumination and complexity in the background. In such conditions, the extraction of exact motion region or human body is becomes much difficult in every image. Further the color images don't have depth cues which are very important for action recognition, particularly when the action is carried out in the front view of camera.

Recently, the availability of RGBD sensors in the market was motivated to develop cost-effective and reliable solutions [4]. With the help of depth sensors (ex. Microsoft Kinect sensors), it is likely to exploit action recognition system using depth maps which provides a significant information about actions. The main advantage of using depth sensors is that they are uniform colored,

illumination invariant and can also provide body shape and simplifies the problem of HAR. Furthermore, the depth sensors are also able to capture the real time body skeleton that allows a compact representation of human body. Compared to color image based action representations, the skeleton based action representation has several advantages; first they are invariant to view points and motion speed, and scale [5]. Next, the complexity of hardware used to capture skeleton data is very less. Finally the skeleton data neglects the surrounding distractions.

Recently, the HAR research has been concentrated on the data captured by depth sensor due to the provision of more significant features from either depth data or skeleton data. The major underlying cause of an efficient action recognition approach is a good action representation method which effective and distinct features. The depth map data ensures an action representation invariant to illumination variations, skin color and clothes. However, some depth frames of an action sequence are composed of external effects like noises, cluttered backgrounds, shadows, jumbled objects and small body shaking movements. On the other hand, the skeleton joints are more sensitive to the movements of joints, thereby affecting on the recognition of two analogous actions

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Defected Ground Structure Printed Antenna with Triangular Slot



D. Shyam Prasad, Samiran Chatterjee

Abstract: Double Layer Single Feed dual resonant frequency patch antenna is presented in this paper. After design the patch, we are etched triangular and rectangular slots at the top and bottom layer of the patch. After design the antenna structure, we got a remarkable result and the operating frequencies are used for the various applications of microwave Communication. Two triangular slots are designed at the top layer from the both sides of the patch with one rectangular slot from the bottom layer and also one h-type slot is introduced at the middle portion from the rest at bottom layer to obtain the desired resonant frequency. The different shapes of the patch used to improve the gain bandwidth performance of the antenna. We get two operating frequencies for this triangular shaped printed antenna. 1st frequency is applicable for microwave radiometry from aircraft to measure ocean wind speed and rain characteristics in hurricanes and the other is used to design BeO POWER CHIP RESISTOR which is applicable for Microwave and RF high power communication, microwave amplifiers and power dividers. This paper includes an extensive analysis of simulated results for this above mentioned microstrip printed patch antenna. All results are simulated and verified by the network analyzer. Due to the basic characteristics of proposed printed antenna, it is suitable for the applications in long distance radio telecommunication systems. It is also applicable for satellite communication and microwave relay systems.

Keywords : Compact, Ground Plane, Layer and Feed, Operating Frequency, Slot.

I. INTRODUCTION

In the recent days of low power communication, the young engineers are search for such type of devices which is very handy, tiny, light weight and possibility of miniaturization. So, in this aspect the microstrip printed antenna is bring a positive interest to the engineers and especially who are willing to work in the microwave communication fields [1]. Due to the miniaturization of microwave devices, we use microstrip antenna for any types of communication irrespective of other devices. But in recent microwave and wireless communication, the engineers are required more than one resonant frequency due to the more coverage range for the

communication. Requirements of two resonant frequency because most of young engineers are used multiple frequency bands for the communication and they want such type of device which can cover all the frequency. Due to this reason, the wireless engineers are designed antennas which are used for multiband operation with multiband characteristics. With the multiband characteristics, the other characteristics are to design the antenna in such a way which is consisting of the process of size reduction. It is one of the new techniques in which we cut different slots in the proper positions of usual antenna which is known by conventional antenna [2-5]. The meaning of size reduction is resonant frequency reduced by a large amount when compared to our usual antennas [6-12]. There are another some antennas are there which are same as patch antenna and the names are DRA (Dielectric Resonator Antenna) and Fractal Antenna [13-18]. But for designing the above mentioned two antennas, the engineers are facing some problems. Due to the requirement of high dielectric constant, DRA is not able to design, and fractal antennas structure is very complicated for design.

So, in recent days the compact printed antenna is smaller in size and also possible to miniature so, the young engineers are looking for the keen interest for this antenna and patch antennas demand are increased for the various communication especially for mobile and microwave communication [9-10]. The proposed work in this paper is presented by design of printed patch antenna which is combined with equal triangular slots which gave two operating frequencies. Designing of the proposed antenna in this paper is done due to etched two equal triangular slots on the both sides of the patch from top layer, one rectangular slot cut at the top from the bottom layer and also one h-type slot (Fig.-2) is introduced at the middle portion from the rest at bottom layer i.e. at ground plane for the improvement in return loss and performance of the antenna. We are used high value of dielectric constant in here for design of proposed antenna for the high percentage of size reduction [2-5]. The main aim is to design our proposed antenna with the increase of operating bandwidth and large increment of frequency ratio. We use the method of moment (MoM) based software [19] and the results are verified by using of Vector Network Analyzer. For the light weight, low cost and small size, the proposed antenna is applicable of satellite communication and related microwave relay systems.

II. ANTENNA STRUCTURE

Designed printed antenna configurations with PTFE substrate are shown in below figures. Two equal triangular slots (T1, T2) are cut both sides from edge of the patch at top layer is shown in figure-1.

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Failure of En19 Taper Thread Tool On Welding Ms Plate



B. Srinivasulu, Shanigaram Pochaiah, B. Eashwara Rao, V. V. Prathibha Bharathi

Abstract: FSSW is used a lot of vicinity which are from marine to aerospace industry. FSSW is effected with tool rotational speed, tool transverse speed, dwell time and tool plunge depth. One of them is weight. With the reference to the research work in this paper two flat plates of similar metals of MS of 1.2 mm thickness & 30.25mm specimen width are subjected to a solid state welding at 900rpm using the EN19 taper thread tool. The tensile-shear test results showed that the FSSW specimens are better than the specimens welded by the conventional FSSW process at 900-1300 tool rotational speeds with using taper thread tool pin profiles. By doing tensile test following ASTM B 557:2006 procedure the ultimate shear load obtained from the conventional friction stir spot welds is 1.960KN.

Keywords : Solid state welding, MS Plate, taper thread profile, failure

how quickly it navigates on the welded interface can be seen in Fig 1. [Bahemmat P et al. (2012)].

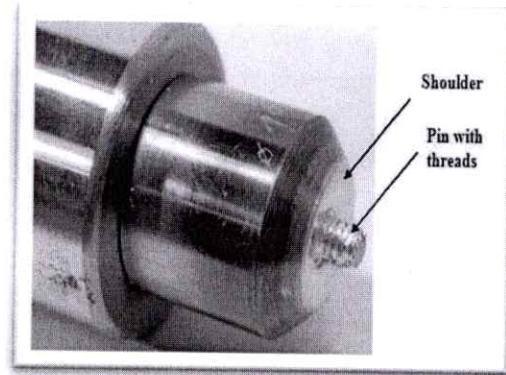


Figure 2: FSSW Tool

I. INTRODUCTION

Friction stir spots welding (FSSW) produces weld for adjacent function from a rotating, non-consumable welding device, enabling the device to 'stir' the joint surfaces between friction and heat generated from plastic work. The

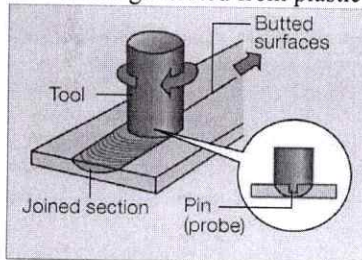


Figure 1: FSSW Metal Joining

Depression on friction and plastic work for summer causes the block to necessarily melting in the work piece, stay away from some problems emerging from a different situation in the state. In the device, two-speed rate is to be considered while friction welding; How the pin swings and

Heat Input during FSSW:

The tool base metal, stirring, gets deformed, and mixes it. Due to the effect of the equipment on the original material, metal content of metal and temperature increases. This diversity in temperature is an indefinite signal of the era of heat brought by the frictional contact between the welding process. In FSSW welding, the heat is determined by including the input curve, and then using the position.

$$U = \frac{2\pi}{60} \omega \int_{t_0}^{t_1} T dt \dots\dots\dots 1$$

where,

ω : Tool rotation speed

T: Torque

And t_0 and t_1 are the tool contact and withdrawal times

U: Heat input

However, this is only a gauge of heat input. Yang et al. Used similar situation to assess weld input, thinking about the contribution of heat by commitment to the device, estimates the abundance of heat contributions, as was illustrated in equations 2 and 3 . Condition 4 displays absolute heat input. The equation 1 was used for all heat input estimates in the current research work.

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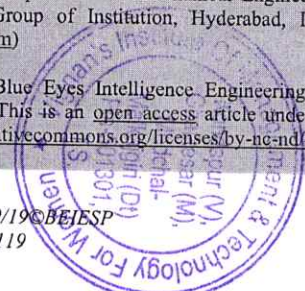
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**PRIVACY-PRESERVING KNN CLASSIFICATION PROTOCOL OVER
ENCRYPTED RELATIONAL DATA IN THE CLOUD**P. VINAYBHUSHAN¹ AND T. HIRWARKAR

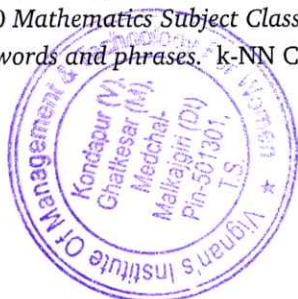
ABSTRACT. With the recent popularity of cloud computing, clients presently have the chance to redistribute their data just as the data management tasks to the cloud. Notwithstanding, because of the ascent of different protection issues, touchy data (e.g., clinical records) should be encrypted before re-appropriating to the cloud. What's more, query preparing tasks ought to be taken care of by the cloud; in any case, there would be no good reason for redistributing the data at the primary spot. To process inquiries over encrypted data without the cloud ever decrypting the data is an extremely testing task. In this paper, we center on attempting the characterization issue over encrypted data. Specifically, we propose a safe k-NN classifier over encrypted data in the cloud. The proposed k-NN protocol ensures the privacy of the data, the client's information query, and data get to designs. As far as we could possibly know, our work is the first to build up a safe k-NN classifier over encrypted data under the standard semi-legit model. Likewise, we observationally investigate the proficiency of our answer through different examinations.

1. INTRODUCTION

The cloud computing worldview is reforming the associations' method of working their data especially in the manner they store, access, and procedure data. As a developing computing worldview, cloud computing draws in numerous associations to consider truly with respect to cloud potential as far as its

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Secure Energy Trade-off Analysis in Wireless Ad-Hoc Networks using Novel Scalable & Secure Management Procedure

Sunil Chandolu, P.Sanyasi Naidu, Swetha Sindhe

Abstract: *Wireless Mobile ad-hoc networks are increased with respect to communication and computation in data transmission between different nodes. Node relay configurations overlay routing is a complex task which improve the properties of routing hierarchy without change basic standards of communication routing scenarios. Sensitivity of different potentials of ad-hoc networks, security concerns is a challenging task in wireless ad-hoc networks. Because of resource limitations present in data management via key scenario with transmission is one of the basic design to support secure data transmission and improve network performance with respect to scalability and efficiency. So that, in this paper, we propose and implement high level security concern i.e. Novel Scalable & Secure Management Schema (NSSMS) for wireless ad-hoc networks. For the first time we extend approach to support unital key-distribution methodology to support high network security formalisms to improve network scalability and key based data sharing probability between different nodes for wireless network communications. Obtained results of proposed approach give better improvement to improve network scalability with overall network performance; we also show significant results with comparison of existing results.*

Index Terms: *Wireless ad-hoc networks, Key distribution, resource optimality, overlay network routing and key management schema.*

I. INTRODUCTION

Mobile ad-hoc networks (MANETs) combined with remote system interfaces are probably going to end up an unavoidable piece of future processing foundations with specialized progressions in remote correspondence, versatility and convenience.

Among them, convey ability might be the most basic issue in these battery-worked gadgets since battery forces power, weight and size imperatives. Keeping in mind the end goal to give enhanced transport ability, it is basic to utilize low-control parts and vitality productive activities. As the pattern in versatile processing is towards additional correspondence subordinate exercises and vitality utilization because of the remote correspondence can speak to the greater part of aggregate framework control [2], the way to vitality proficiency is at the vitality mindful organize conventions, for example, joins, MAC, steering, and transport conventions.

Because of the asset restrictions, existing security answers for customary systems proved unable be utilized in MANETS. Along these lines, the security issues turned out to be then one of the principle challenges for the asset compelled condition of MANETS. Key server maintains secure services, for example, verification and classification to exchange information in mobile ad-hoc networks. A secure connection between different nodes is a complex issue in mobile ad-hoc networks. The open key based arrangements, which give effective key administration benefits in customary systems, are inadmissible for MANETS as a result of asset confinements. Some open key plans have been executed on genuine sensors [2][3][4], be that as it may most analysts trust that these systems are still too heavyweight over real sensors' innovation in light of the fact that they incite an imperative correspondence and connection overhead [5] Symmetric key data transmission is one of the reliable data evaluations in mobile ad-hoc networks. Due to absence of node is the foundation in wireless ad-hoc networks. Pair wise data transmission with secure key sharing between neighbor nodes with respect to existing approaches.

So that in this we propose a Novel Scalable & Secure Management Schema (NSSMS) is introduced to support efficient data transmission to increase the performance of network with respect to different nodes. We also use Unital key approach with proposed approach for the support to maintain unique key for each node while all the nodes present in data transmission. Each node sharing key with destination for efficient data transmission to improve scalability of wireless network communication. We carried out experimental calculations to compare the efficiency of proposed approach with existing approaches with respect to different network parameters like data storage, scalability of network and also increase secure path for data transmission.

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Incorporation of Action Plans on Women's Perspective in ICT

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Abstract- This paper aims to highlight the role of women in adopting new learning trends needed for everyone and women have to be an equal beneficiary to the advantages offered by the technology i, Technology has become the crucial parts of everyday lives “women and girls are poorly placed to benefit from the knowledge of ICT because they have less access to scientific and technical education specifically, in rural areas of India even the Internet is provided in English and women, Who do not speak or read English may not be able to gain knowledge .The impact of having few women web developers and software programmers, particularly working in the Urban regions, may be lack of Opportunities . I think it's very important to understand what actually want to achieve As we know, We have a variety of technologies available and we need to somehow assess them to highlight some Pros and Cons of using ICT It entails building up of capacities of women to overcome social and institutional barriers and strengthening in their participation in the economic process for overall improvement in their qualities of lives..

Key words: Communities, Education, Ensure, Knowledge, Literacy, Opportunities ,Technical, Education, Women

Introduction



A literary review on women in Indian context has been facing many obstacles to develop in technology. The World is on the edge of the brink of new era where new modes of Information and Communication Technology have swept people off their feet refers to the use of in the fields of socioeconomic development, international development, and human rights. The theory behind this is, more. Women's active participation in the ICT sector is essential for better development of a society. Despite strong evidence regarding the importance of fully incorporating women into the Information and Communication Technologies (ICT) sector, a gender ICT gap still remains in India. Communication for development is a social process, designed to seek a common understanding among all the participants of a development initiative, creating a basis for concerted action. —UN FAO, 1984

Indian females do not take ICT studies. Moreover, women are underrepresented in the sector, particularly in technical and decision-making positions for's long-term growth and economic sustainability. The study Women Active in the ICT Sector is another step in the on-going efforts to tackle the problem. This is achieved by: (1) updating current data regarding females' roles in the sector; (2) identifying role models and career paths to inspire women and girls; (3) assessing the economic impact

A Quantum Security for Cloud Storage and Sharing Scheme with Enhanced Multi Routing Architecture

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Abstract: Now a days the cloud computing has been widely used in day to day life. Confidentiality, Integrity, and Availability are basic goals of security architecture. To ensure CIA, many authentication scheme has been introduced in several years. Every type of data is stored in the cloud and it can be easily accessed at any time and any place. But, while coming to the privacy in the cloud computing it steps behind due to location awareness. Cloud computing uses a fog-centric secure scheme to protect data against unauthorized access, modification, and destruction. To prevent the illegitimate access, the scheme employs a new technique Xor-Combination to conceal data. Moreover, Block-Management outsources the outcomes of Xor-Combination to prevent malicious retrieval and to ensure better recoverability in case of data loss. The current system uses hash algorithm for detection with higher probability. But the current algorithm does not providing better efficiency and security. The Proposed work is a different approach when compare with existing system for securing data in the cloud using segment technology and faster multipath routing. Proposed approach will be providing the better efficiency and security for the cloud storage. To enhance the efficiency of fog based cloud storage service, multi path file transmission has been used, in which a file will be divided into many parts and transmit to cloud servers via various fog servers. Currently deployment of Public Key Infrastructure (PKI) is a most significant solution. PKI involving exchange key using certificates via a public channel to a authenticate users in the cloud infrastructure. However, there is a certain issue pertaining to the PKI authentication where the public key cryptography only provide computational security because PKI is based on Asymmetric Key Cryptography. It is exposed to widespread security threats such as eavesdropping, man in the middle attack, masquerade et al. This paper aims to look into basic security architecture in place currently and further it tries to introduce a new proposed security architecture, which makes use of the knowledge of Quantum Mechanics and current advances in research in Quantum Computing, to provide a more secure architecture.

Keywords: Fog Security, Quantum Computing, Multipath Routing.

I. INTRODUCTION

Legacy Cloud networks are frequently designed to function with easy single-direction routing, like shortest-course, which is understood to be throughput suboptimal. On the alternative hand, previously proposed throughput premiere guidelines (i.e., backpressure) require every tool

in the community to make dynamic routing choices. In this painting, I study an overlay structure for dynamic routing such that simplest a subset of devices (overlay nodes) want to make dynamic routing selections. I determine the crucial series of nodes that should bifurcate visitors for accomplishing the maximum multi connectivity network throughput. We apply our choices node

A NOVEL MECHANISM OF INTEGRATION OF CLOUD DATA USING DATA CHUNKS

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Abstract At present dramatically increase in the business and internet applications, storage is becoming a major issue in cloud computing. Storage costs are increasing day- by-day. Cloud backed is backing up data that involve distribution copy of the data over a community network to an off-site server. Uncomplicated access interfaces and elastic billing models, cloud storage has become a gorgeous solution to make simpler the storage organization for both enterprises and individual users. This paper presents a survey on the different cloud backed frugal file system. This enables effective storage management, increase the performance and reduce the cost in the cloud. CHARON, a cloud-back storage system talented of storing and sharing big data in a protected, dependable, and capable. CHARON apparatus three distinguishing features: (1) it does not require trust on any single article, (2) it does not want any client-managed server, and (3) it efficiently deals with big files over a set of geo-discrete storage services. As well that, we urban a novel Byzantine-resilient data-centric rental protocol to avoid write-write conflict between clients accessing shared repositories. We evaluate CHARON using micro and application-based benchmark simulate representative. The results design is not only viable but also present an end-to-end routine of up to 2:5 better than other cloud-backed solution.

Keywords: —Big-data storage, Cloud storage, Byzantine fault tolerance.

1. INTRODUCTION

The high volume, velocity, and variety of of data organization, requiring them to scale while make sure security and data being bent by diverse scientific and business domain challenge standard solution dependability. We here CHARON, a near-POSIX cloud-backed storage space system capable of storing and sharing big data with minimal organization and no devoted infrastructure. The main motivation for building this system was to support the organization of genomic data, the use of widely-accessible cloud services would facilitate the sharing of data among biobanks, hospitals, and laboratories, serving as a managed repository for public and access-controlled datasets. The problem is how to exploit the benefits of public clouds for data storage and sharing without endangering the security and dependability of biobanks' data. CHARON uses cloud-of-clouds replication [13], [14], [15],[16] of encrypted and encoded data to shun having any cloud Ensure. Backup file, data archival and collaboration are the popular services in cloud companies [1], in general these services based on cloud storages like the Amazon S3, Drop box, Google Drive and Microsoft Sky Drive. These services are fashionable because of their everywhere accessibility, pay-as-you-go model, high capability, and ease of use. Such services can be generally grouped in two modules: (1) personal file synchronization services (e.g., Drop Box) - Personal file synchronization is based on back-end storage cloud model and the applications of client communicate with the local file system by monitoring interface [inotify -in Linux]. (2) cloud-backed file systems (e.g., S3FS [6]). Cloud-backed file system based on two architecture models: the First model is proxy based, second model is open-source solutions [S3FS [2] and S3QL [3]]. The two models are implemented at user – level. Proxy based model the proxy component placed in network infrastructure, performing as a file server to various clients. Functionality of Core files system is implemented by proxy, to calls the cloud and stores the files. The major limitation is bottleneck and single point of failure. Open source solution model the clients directly access the cloud, exclusive of proxy interaction as a result, there is no longer a single point of failure, but it's very

A COMPLETE MODIFIED HIERARCHICAL ATTRIBUTE BASED ENCRYPTION ACCESS CONTROL METHOD FOR MOBILE CLOUD COMPUTING

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Abstract

This manuscript is an undertaking to give an improved statistics amassing safety show in Cloud Computing as well as making a put confidence in condition in cloud computing. There is a significant proportion of persuading clarifications behind associations to send cloud-based limit. For another business, start-up expenses are basically reduced in light of the fact that there is no convincing motivation to contribute capital ahead of time for an inside IT structure to support the business. We judge so as to information storing safety in Cloud Computing, a domain overflowing with difficulties and of focal criticalness, is immobile in its soonest arranges currently, as well as various investigation issues be nevertheless to exist recognized. In this manuscript, we investigate the issue of statistics safety in cloud statistics accumulating, to make sure the rightness of clients' data in cloud statistics storing. We projected a Hierarchical Attribute -base safe Outsourcing pro admittance in Cloud computing which in like manner ensures data amassing protection as well as survivability thusly giving trust in condition to the customers. To fight beside unapproved in sequence spillage, receptive information must exist mixed via re-appropriating to offer start to finish information security certification in the cloud as well as past. We include condensed the estimation instance in light of input dimension via executing CP-ABE algorithm pro Cryptographically undertakings. Many cloud has are giving administrations to various customers to their information. Because of calamity the executives cloud can be utilized as reliable stockpiling system. For such cloud stockpiles encryption is done numerous far for verifying information. The trait based encryption is the strategy to encode the substance. In like manner we exploit push mail algorithm pro solution exchange among owner as well as customer. It improves the security in the proposed show sufficiently.

Keywords— Cloud Computing, Access manage, safe information storage

I. INTRODUCTION

Cloud computing is a computing perspective in which the function programming as well as database be enthused toward the brought mutually immense server ranches. Organizations are based on usage and the advancement establishment is overhauled for encouraging a couple of clients. Cloud Computing have be envision as the front line building of IT venture. It is getting a consistently expanding number of contemplations, from both mechanical and educational gathering. Cloud computing confines utilization of IT resources from their organization and upkeep. With the objective so as to customers preserve revolve around their inside commerce as well as department's costly help

FICTITIOUS NEWS DETECTION USING MACHINE LEARNING ALGORITHMS

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Abstract: now a day's our modern era where the internet is ubiquitous, everyone relies on various online resources for news. Along with the increase in the use of social media platforms like Facebook, Twitter, etc. news spread rapidly among millions of users within a very short span of time. The spread of fake news has far-reaching consequences like the creation of biased opinions to swaying election outcomes for the benefit of certain candidates. Moreover, spammers use appealing news headlines to generate revenue using advertisements via click-baits. Sometimes, you need to check information to make sure it's true. If you don't have enough time for it because of your studies, use thesis writing services and enjoy additional free time at your disposal. In this paper, we aim to perform binary classification of various news articles available online with the help of concepts pertaining to Artificial Intelligence, Natural Language Processing and Machine Learning. We aim to provide the user with the ability to classify the news as fake or real and also check the authenticity of the website publishing the news.

Keywords: Social Media, Fake News, Classification, Artificial Intelligence, Machine Learning, Websites, Authenticity.

1. INTRODUCTION

As an increasing amount of our lives is spent interacting online through social media platforms, more and more people tend to hunt out and consume news from social media instead of traditional news organizations.[1] The explanations for this alteration in consumption behaviours are inherent within the nature of those social media platforms: (i) it's often more timely and fewer expensive to consume news on social media compared with traditional

journalism, like newspapers or television; and (ii) it's easier to further share, discuss, and discuss the news with friends or other readers on social media. For instance, 62 percent of U.S. adults get news on social media in 2016, while in 2012; only 49 percent reported seeing news on social media [1]. It had been also found that social media now outperforms television because the major news source. Despite the benefits provided by social media, the standard of stories on social media is less than traditional news organizations. However, because it's inexpensive to supply news online and far faster and easier to propagate through social media, large volumes of faux news, i.e., those news articles with intentionally false information, are produced online for a spread of purposes, like financial and political gain. it had been estimated that over 1 million tweets are associated with fake news Pizzagate" by the top of the presidential election. Given the prevalence of this new phenomenon, Fake news" was even named the word of the year by the Macquarie dictionary in 2016 [2]. The extensive spread of faux news can have a significant negative impact on individuals and society. First, fake news can shatter the authenticity equilibrium of the news ecosystem for instance; it's evident that the most popular fake news was even more outspread on Facebook than the most accepted genuine mainstream news during the U.S. 2016

KITCHEN WASTE CLASSIFICATION USING DEEP LEARNING TECHNIQUES

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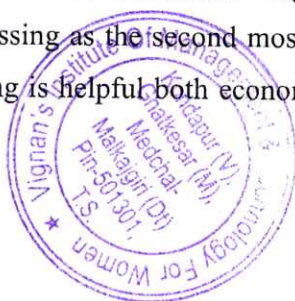
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Abstract: - In the field of environmental protection, recycling of resources and social livelihoods, wasteclassification was always a crucial subject. A deep learning automated waste classification approach is introduced to enhance the efficiency of the front-end waste collection. With the fast increase in global production levels, the problem of garbage disposal is growing severe. Trash classification is an important step towards waste reduction, harmlessness and resource utilization. Increasing trash types and quantities implies that traditional scrap classification algorithms can no longer comply with accurate identification requirements. This study offers a VGG16 neural network model based on the process of attention for classifying recyclable waste. The attention module is introduced to the model after convolution so that the essential information in the feature map may be given greater attention. The algorithm can automatically extract categorization features such as organic, recyclable and non-recyclable waste. Experimental findings reveal that 84 per cent of the algorithm in the recyclable trash classification can effectively categories the garbage.

Key word: - Classification, Deep Learning, CNN, VGG16, Image Classification, Transfer Learning.

1. INTRODUCTION

Overall, densewaste is projected to exceed 2.1 billion tons per year by 2026, costing waste management \$375.6 billion [1]. Improper garbage organization will have huge economic, social and environmental negative effects. The EPA [2] identified public solid waste reprocessing as the second most environmentally completetown waste approach. Efficient trash recycling is helpful both economically and environmentally. It may be used for the recovery of



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Dynamics of Host-Parasite Models with Harvesting of Parasites and Partial Cover for Host

T. Srinivasulu, V. Meena



Abstract: Modeling might be viewed like a knowledge concerning with the communication among other topics and mathematics, theoretical discipline on a number of elements of the daily world. Mathematical models take to be crucial resources in iterative methods and biological investigations of info collection. Mathematical models take to be crucial resources in bioticsurveys with an iterative process of info collection. The experimental investigation as well as the theoretical model is usually a crucial element in developing tests and in the interpretation of information. Parasites are actually the organisms which feed on their hosts or host immediately upon it, at some point resulting in the death of host species.

Keyword: Parasites, harvesting, biological model

I. INTRODUCTION

Mathematical representations have turned on view to be significant tools in biological examinations with an iterative methodology of data gathering. On the off chance that such models are appropriately created and utilized, they can give understanding into the dealings amongst the carnal factors and procedure impacting the framework being contemplated. The subsequent exchange between the trial examination and the hypothetical model can be a fundamental issue in structuring research and in the clarification of data. There are different sorts of precise modeling. Since mathematical genuine systems are complex plans have been created to recreate the trial results regardless of the basic components. Such models can be very valuable in featuring the exhibition of the biological systems, yet the segments of the model aren't recognizable with the parts and instruments of the genuine framework. Nonetheless, exploratory outcomes can be replicated in such conditions by self-assertively changing the models to investigate the connection among different systems. The understanding got from investigations of such models has given to be of colossal use in complex genuine systems.

This model is a rich interdisciplinary action including the investigation of certain parts of assorted teaches, for example, Biology, Pharmacia-energy, Bio-financial matters, Genetics, Epidemiology, Ecology,

Immunology, Sociology, Physiology and even Politics separated from Physical Sciences, Engineering and Technology. It is a responsibility ancient as the principal individual and as current as tomorrow's paper. Mathematical Modeling in Bio-Medical sciences is an endeavor to recognize and portray a few occurrences of time-to-time life in the language of Mathematics.

As of late, math exhibiting has developed so huge that it discovered its due spot nearly in all social statuses, drawing in the consideration of even a typical man.

This subject always tries to augment the zones to which, strategies of arithmetic can be connected for picking up a superior knowledge and help in extending our thoughtful different wonders that happen in nature. Genuine circumstances are tranquil multipart and we ought to have some understanding into the circumstance before an endeavor is made to define another mathematical model. Utilizing legitimate mathematical systems, the significances of the model so framed could be taken and the outcomes contrasted and comments. The disparities between hypothetical ends and the genuine explanations would propose further upgrades in the model every now and then. Mathematical bio - sciences, likewise called Bio arithmetic is an interdisciplinary subject with a huge yet exponentially developing writing spread over assorted orders. Commitments to it have been made by mathematicians, physicists, PC researchers, environmentalists, restorative researchers, demographers, and numerous others. In mathematical bio sciences, we examine the utilizations mathematical systems and mathematical modeling to get knowledge into the issues of bio sciences. It incorporates mathematical demography, mathematical ecology, mathematical bio financial aspects and mathematical agribusiness, mathematical therapeutic sciences.

II. EVOLUTION OF PARASITES

Bio-trophic parasitism is thought to be a typical method of life that has emerged freely ordinarily over the span of advancement. It is likewise accepted that the same number of as half of all creatures have in any event one parasitic stage in their life cycles [40] and it is additionally visit in plants and organisms. Besides, practically all free living creatures are hosts to at least one parasitic life forms one after another or another. An investigation has indicated that gaps in the skull of a few examples may have been brought about by Trichomonas-like parasites.

Besides, parasites have been known to advance in light of the resistance instruments of their hosts. As an outcome of their host safeguards,

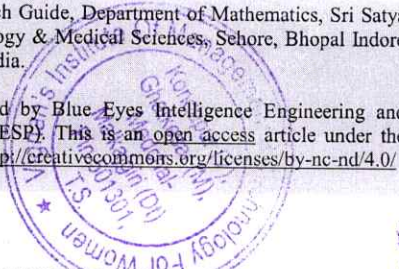
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ASIC Implementation of Low Power Efficient Crosstalk Analytical by LUT-BED-CLA

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Abstract: Nowadays, crosstalk noise is one of the major problems in VLSI design circuits. While transmitting the input information, the noise occurs in the channel. After receiving the information, the input data affect by the crosstalk. In this paper, Look Up table with Bus Encoding Decoding Carry Look Ahead adder (LUT-BED-CLA) is introduced to eliminate the crosstalk noise in the receiver side. Encoder block consists of transition detector, Type-A detector, Type-B detector, XOR stack, and Latch. Encoder output is given to the crosstalk model circuit, which is implemented in Cadence virtuoso. This crosstalk model output connects to decoder input. Decoder block contains an XOR circuit to retrieve the original data, which is given to the input of the encoder. From the encoder and decoder, the area, power, and delay was evaluated. Instead of using normal adder, CLA adder was used in counter which gave better performance. Form the crosstalk analysis, cross talk output was given to the decoder input. Even though, decoder output gave same output which was given to the encoder input. This entire work implemented in Verilog to evaluate ASIC performance for 180nm and 45nm technology. In ASIC 180nm technology, 26.3% of area, 39.67% of power, 55.53% of APP, and 26.3% of ADP is minimized in LUT-BED-CLA as well as 45nm technology, 34.4% of area, 24.1% of power, 38.62% of delay, 50.11% of APP, and 59.6% of ADP reduced in LUT-BED-CLA method compared to existing method.

Keywords: Bus encoding decoding, Crosstalk, Cadence virtuoso, Look up table, 180nm and 45nm.

1. Introduction

In VLSI fabrication process, Deep Sub-Micrometer System-On-Chip (DS-SOC) becomes a global trend because it's having desired advantages such as high-speed, efficient communication, and etc. But, inter-wire Crosstalk (IWC) is one of the major challenges in VLSI technology [1]. Normally, crosstalk is a type of noise which is introduced by unwanted coupling between two neighbouring buses [2]. In Energy Consumption and Delay (ECD) models, the entire crosstalk bus is represented as a function of energy consumption that is used to determine the delay and the speed of the bus [3]. Many authors have introduced different types of crosstalk Reduction Technique (CRT) such as eliminating specific data transition patterns, reducing the energy consumption, coding technique and minimizing the delay [4]. To eliminate the crosstalk,

a Simple Delay Penalty (SDP) technique is introduced in passive shielding inserts passive (e.g., grounded) and shield wires between adjacent active data lines [5]. This technique is used to reduce the bus delay. But, it requires doubled a number of wires to create a bus without any loss [6].

The Crosstalk Avoidance Coding(CAC) technique has given the promising solution in low power activity such as 1) low-power buses through Self and Coupling Transition (SCT) activity reduction (Low-Power Codes(LPC)) [7 - 9], 2) Improved reliability in low-swing buses (Error-Control Codes (ECCs)) [10, 11]. The most of the CAC reduction existing systems have very high complexity like more power consumption, cross-talk noise. For example, the Coder-Decoder (CO-DEC) technique has a complexity in the size of the bus [12]. Many researchers have found the different way of the CAC in CO-DEC to solve the crosstalk problem. In

IoT Based Home Automation and Security System Using Raspberry PI and Mail Server

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Abstract: This paper presents an approach for smart home automation using Internet of Things (IOT) integration with web services. This project aims to increase home security using the aforementioned approach. The approach focuses on sending data and receiving instructions by sensors, cameras and from the end user, through embedding intelligence to the mentioned gadgets using Raspberry Pi tiny computer. IOT can be viewed as an evolution rather than a revolution. IOT involves leveraging connectivity to efficiently collect and analyze the data from various sensors and relay the data to the mobile or personal computer through Wireless connectivity. The currently built prototype of the system sends alerts to the owner using the Internet if any sort of human movement is sensed near the entrance of his house and raises an alarm optionally upon the user's discretion. The provision for sending alert messages to concerned security personnel in case of critical situation is also built into the system. Thus using the same set of sensors the dual problems.

Keywords: IOT, SMTP Server, Raspberry Pi.

I. INTRODUCTION

The Internet of Things lets you automate your home and monitor it from afar around the world. The whole point of smart home is to make simple tasks even easier. Home automation or Smart Homes can be described as introduction of technology within the home environment to provide convenience, comfort, security and energy efficiency to its occupants. Adding intelligence to home environment can provide increased quality of life. With the introduction of the Internet of Things (IOT), the research and implementation of home automation are getting more popular. The Internet of Things (IOT) can be described as connecting everyday objects like smart-phones, Internet TVs, sensors and actuators to the Internet where the devices are intelligently linked together enabling new forms of communication between things and people, and between things themselves. Building IOT has advanced significantly in the last couple of years since it has added a new dimension to the world of information and communication technologies. The provision for the user to automate homes remotely is the main target of this system. There was a need to automate home so that users can take advantage of the technological advancement in such a way that a person can send a control signal to the home control center when he forget to turn off devices such as fans and lights instead of returning home.

II. LITERATURE SURVEY

Raspberry Pi as a Sensor Web node for Home Automation. This paper proposes an implementation of Sensor Web node as a part of Internet of Things (IOT) using

Raspberry Pi. Raspberry pi is customizable, reasonably cost and programmable small computer having large numbers of peripherals and network for communication. Before the IOT technology controlling, monitoring and alerting of devices is not possible. IOT technology provides many advantages including cost saving, security, safety and improve comfort. Open source software is used for programming which control the devices. Experimental result and performance have shown by Raspberry Pi. Home appliances, temperature and humidity sensor, and a motion sensor are connected with Raspberry pi so that they can be monitored and controlled. Sensors value send to the web link and we can control it through web and controlling appliances with the click of buttons on a webpage using internet, from anywhere. Raspberry Pi based Interactive Home Automation System through E-mail the algorithm developed such a way that it read the subject of E-mail or in other word we can say that, home application controlled through E-mail by reading the subject. Home Security System using PIR Sensor and PI Camera. This system will detect the presence of Intruder and quickly alert the user by sending him an alert mail. This mail will also contain the Picture of the Intruder, captured by Pi camera. Raspberry Pi is used to control the whole system. This system can be installed at the main door of your home or office and you can monitor it from anywhere in the world using your Email over internet.

III. BLOCK DIAGRAM

Description: Raspberry pi as minicomputer that executes our back end program, the backend program is written in

Interference Reduction in Wireless Communication Using Adaptive Beam Forming Algorithm and Windows

¹K. Siva Krishna and ²Rakesh Mutukuru

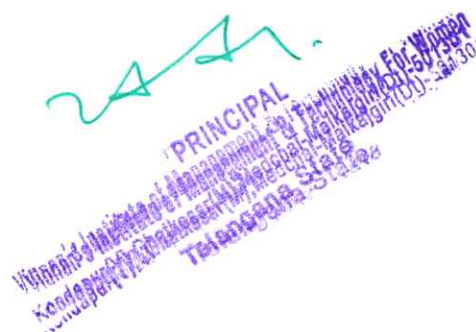
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Abstract

A novel based approach of Adaptive beam forming algorithm is proposed for the interference reduction in wireless communication application based on Minimum Bit Error Rate(MBER).By means of LMS Algorithm we can switch and steer the antenna beam electronically and with use of Windowing techniques, Block data and sample by sample adaptive implementation of MBER's solution is developed. HPBW of antenna is enhanced by making use of windowing techniques like Rectangular, Hamming, Kaiser, Chebyshev windows. In CDMA, the system gain will improve the performance of the system, where the no of interferences in quite large and helps to increase the spectral efficiency of wireless communication system. Any beam former that can depress large number of interferers (by improving the system capacity and performance). Such beam former is referred as "smart antenna". Signal to Interference Ratio (SIR) of system is efficiently improved by forming narrow beam towards the desired user by suppressing the unwanted side lobes.

Key Words:Interference, window, LMS, HPBW, array, algorithm, Smart antenna, beam FORMING.



Design and Development of Efficient Energy Consumption Based on Low Power Listening for WSN in Noisy Environments using with AEDP Protocol

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ABSTRACT

Wireless sensors play a greater and greater part in our regular daily existence and they have turned into a piece of our life in homes, vehicles, movement, sustenance production and human services, monitoring and controlling our exercises. Low-cost and asset efficient solutions are a basic piece of this development. Low Power Listening (LPL) is a common MAC-layer technique for reducing energy consumption in wireless sensor networks, where hubs intermittently wake up to test the wireless channel to identify movement. Be that as it may, LPL is exceedingly defenseless to false wakeups caused by environmental commotion being recognized as movement on the channel, causing hubs to deceptively wake up to get nonexistent trans-missions. In experimental investigations in private environments, we see that the false wake-up issue can essentially increase a hubs obligation cycle, compromising the advantage of LPL. We likewise End that the energy-level edge utilized by the Clear Channel Assessment (CCA) system to distinguish channel movement significantly affects the false wakeup rate. We at that point design AEDP, a versatile energy detection protocol for LPL, which progressively changes a hubs CCA limit to enhance organize unwavering quality and obligation cycle based on application indicated limits. Observational trials in both controlled tests and certifiable environments indicated AEDP can electively relieve the effect of clamor on radio obligation cycles while maintaining agreeable link dependability.

Keywords

Wireless Sensor Networks; Low Power Listening; CCA, AEDP, MAC-Layer Technique.

I. INTRODUCTION

Clear Channel Assessment (CCA) is a crucial system in MAC protocols for wireless networks. A CCA check 1 test the energy level in the wireless channel and considers the channel occupied if the energy level is over a limit, or sit without moving generally. CCA has been commonly utilized for two critical (and orthogonal) purposes. To start with, it has been utilized by CSMA/CA protocols to keep away from collisions on shared wireless channels, by sampling the channel for movement just before transmission. Second, CCA has been utilized in Low Power Listening (LPL), a prominent MAC-layer approach that empowers radio to work at low obligation cycles. Under LPL, each hub intermittently awakens to perform CCA. It at that point remains conscious to get bundles if the CCA check distinguishes action in the wireless channel, or returns to rest promptly something else. Because of its straightforwardness and viability, LPL has been a prevalent way to deal with energy-efficient MAC protocols in Wireless Sensor Networks (WSNs). A large number of LPL-based MAC protocols has been produced as of late [8, 18, 19], and LPL has been executed by many radio drivers inside sensor operating frameworks, for example, TinyOS [1] and Contiki [2].

While the effect of CCA on collision evasion has been very much concentrated in the writing, its effect on LPL, especially in noisy environments, for example, private and office environments, has gotten moderately little attention. Applications conveyed in noisy wireless conditions are helpless to visit false wakeups: clamor might be identified as a true blue action on the channel, causing the hub to remain conscious notwithstanding when no

IOT Application: Implementation of GSM Based Security System using microcontroller

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Abstract—An effective security system is designed and implemented through the application of embedded systems and the Internet of Things (IoT). The main goal of this work is to present the IoT system and modern technology systems / embedded intelligent networks. IoT is the technology of the future in contact machine / machine device / machine is possible thanks to the electronics, sensor technology, software and connectivity system to enable these items to collect and exchange data. Embedded system is a real-time mainframe structure on a particular task, an automatic or electrical system including, often within the limits of real-time raking as sensors, modules with microcontrollers, etc...This is integrated with sensor main server and GSM global system (For mobile), it is able to send data and IP addresses through SMS message. This will facilitate the identification of the unknown person embedded in real-time in these devices. The video data are transferred to another back-end server via TCP (Transmission Control Protocol) of the device. This server collects data and provides HTTP Web. A browser is used to view data and can be remotely controlled. This type is giving an idea about the probability and effectiveness of the system, this thesis presents the results of the investigation into the security system and some realistic implementations.

Keywords—Atmega16, GSM Module, Passive infrared Sensor, Embedded C, Internet Protocol (IP).

Tools—CodeVisionAVR, PCB Wizard

Programmer—USBasp

I. INTRODUCTION

Integrated intelligence is a mechanism by which a specific application device as a combination of microcontroller, protection sensor with integrated signal status and distribution channels of the signal communication module control management intelligent systems, they refer to other technologies with similar convenience in the appearance of the machine / device communication machine / device. Integrated information system is present in many different devices and areas

such as health divisions, agriculture, transport, defense and performance. IoT controllers use different communication protocols over the Internet. Aspire of this work is to provide a security system where they connect with each other, with the IoT development in the modern era. In this work, we use a microcontroller (AVR-RISC processor Alf and Vegard), PIR (passive infrared sensor), a GSM module and a smart phone to start an idea. The idea, focusing on the need to design a security system that is moderately tangible. For example, if a family goes to Hometown or wherever you leave your room / house, it must be something that keeps control of the smart home. If someone inside the house should be a device that will make you alerts, like to take pictures, record videos. The best competition of these efforts is a security system through intelligent IP device to access the Internet of things everywhere protocol.

We want to know about the monitoring system that has linked the attachment toward the Internet used for distant screening. During earlier period, safety systems must be monitor through a guardian who was protected during a day by every surveillance room that would be monitored to ensure nothing. It is very important now to have days; the prospect of our remote security system is ease to notice in real time. This system of progressing a message directly to the mobile phone from the cell to facilitate, detect that your surveillance camera capture an incident. This system protects against theft. By being able to see your DVR over the internet, you are very happy to immediately stop a crime.

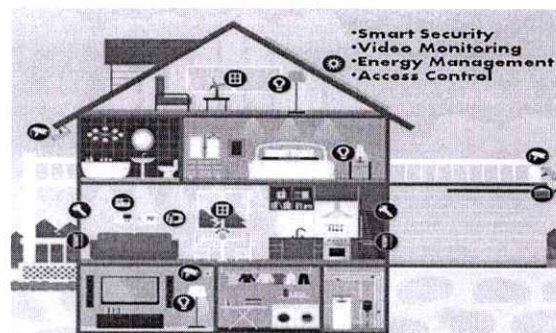


Fig.1. IoT Based Smart Protection

An Efficient System for Heart Risk Detection using Associative Classification and Genetic Algorithms

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Abstract:

Associative classification is an ongoing and compensating system which incorporates affiliation govern mining and classification to a model for forecast and accomplishes greatest exactness. Associative classifiers are particularly fit to applications where most extreme exactness is wanted to a model for expectation. There are many spaces, for example, medication where the most extreme exactness of the model is wanted. Heart illness is a solitary biggest reason for death in created nations and one of the fundamental supporters of malady load in creating nations. Mortality information from the enlistment center general of India demonstrates that heart illness is a noteworthy reason for death in India, and in Andhra Pradesh, coronary heart malady causes around 30% of passings in rustic territories. Consequently there is a need to build up a choice emotionally supportive network for foreseeing heart sickness of a patient. In this paper, we propose efficient associative classification algorithm using genetic approach for heart ailment expectation. The primary inspiration for using a genetic algorithm in the revelation of abnormal state expectation decides is that the found tenets are profoundly intelligible, having high prescient exactness and of high intriguing quality qualities. Trial Results demonstrate that a large portion of the classifier rules help in the best forecast of heart sickness which even helps specialists in their finding choices.

Keywords — Associative classification, Genetic algorithm, Gini Index, Z-Statistics.

1. Introduction

The real reason that the information mining has pulled in a lot of consideration in the information business in the ongoing years is because of the wide accessibility of gigantic measures of information and the requirement for transforming such information into valuable information and learning. The information picked up can be utilized for applications ranging from business management, generation control, and market analysis to rising plan and science investigation and wellbeing information analysis [1]. Affiliation administer mining and classification are two fundamental functionalities of information mining. Affiliation administer mining is utilized to discover affiliations or relationships among the thing sets. It is an unsupervised realizing where no class trait is engaged with finding the affiliation run the show. Then again, classification is an administered realizing where a class characteristic is associated with the development of the classifier and is utilized to order or foresee the information obscure example.



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Duo-Mining Techniques in Knowledge Discovery Process in Data Base

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ABSTRACT

Duo mining is used frequently in a mixture of industries and its enduring to gain in both popularity and acceptance. Duo Mining is a blend of data and text mining. This paper suggests Data mining architecture in addition with Knowledge discovery process. It also presents the comparison between data mining and text mining. As Data mining handles various processes like text Mining, Multi-media, Web mining etc. Text Classification, Clustering, Keyword based Association are the terms that are used to describe the process of Text Mining

Keywords : Association, Clustering, Data Mining knowledge, Pattern mining, Regression, Data Mining, classification, Duo Mining, Pattern Recognition, Text Mining

I. INTRODUCTION

Duo Mining is the variation of data and text mining. It has demonstrated especially well for the banking and credit card companies in order to take better decisions. As separate capabilities, of the pattern finding technologies of data mining and text mining have been around for years. However, it is only recently that enterprises have been started to use the two in acycle - and have discovered that it is a combination that is worth more than the sum of its parts.

They are similar because they both "mine" large Amounts of data, and looking for significant patterns. However, what they evaluate is quite different. Instead of only being able to analyse the structured data they collect from transactions, they can add call logs from customer services and further analyse customers.

In addition, spending patterns from the text mining side. These new developments in text mining technology that go beyond simple searching methods are the key to information discovery, which is generally work on the unstructured data.

There are several methods of data mining which handle the following or application of mining:

- Spatial mining
- Multimedia mining
- Text mining
- Web mining

Spatial mining:

Spatial is a three-dimensional object, and mining is extraction of patterns. Non-trivial searches "robotic" as possible to diminish human effort. It refers to the extraction of knowledge, spatial relationship, or other fascinating patterns not explicitly stored in spatial databases. Such mining demands an incorporation of data mining with spatial database technology.



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