**Dr. Meenalosini Vimal Cruz, M.SC., M. Phil., M.Tech., Ph.D.**

**Contact details (Official)**

156, Putnam Science Center,

Keene State College,

229 Main Street, Keene, NH,USA

Email: mv1068@keene.edu

**Contact details (Personal)**

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Email: [mrs.meenalosini@gmail.com](mailto:mrs.meenalosini@gmail.com)

Mobile # 603 320 4573

**Career Overview**

Results oriented, hardworking, highly motivated and committed Academic & Researcher with five years of teaching experience in Computer Science department and 3 years of research experience in Digital Image Processing. As an academic, committed to yield good result in teaching through identified and proved solutions for individual as well as collective learning needs. As a researcher, has intense research experience in cancer diagnosis and medical image/signal analysis and committed to serving the society in both application and scholarship perspective.

**Work & Research Experience**

* **Keene State College –** Keene, New Hampshire, USA

**Assistant Professor commencing** from August 2017

* **Veltech Dr. RR & Dr. SR Technical University** － Chennai, TN, India

**Research Scholar - February** 2011 to January 2014

**Assistant Professor -** March 2010 to February 2011

**Lecturer -** July 2008 to February 2010

**Education and Training**

* **Ph.D**.: **Computer Science Engineering**, 2014

Veltech Dr.RR & Dr.SR Technical University － Chennai, Tamilnadu, India

* **Master of Technology: Computer and Information Technology**, 2008 – **Received Gold Medal**

Manonmaniam Sundaranar University － Tirunelveli, Tamilnadu, India

* **Master of Philosophy**: **Physics**, 2007

Madurai Kamaraj University － Madurai, Tamilnadu, India

(Research project at Indian Institute of Geomagnetism)

* **Master of Science: Physics**, 2006

The Madura College, Madurai Kamaraj University － Madurai, Tamilnadu, India

(Research project at Indian Institute of Astro Physics)

* **Bachelor of Science**: **Physics,** 2004

The Madura College, Madurai Kamaraj University － Madurai, Tamilnadu, India

**Research Area**

* Designing Computer Aided Design tool using advanced Image Processing and deep learning techniques to analyze and classify the medical images like mammograms, MRI brain images, skin images automatically which would be helpful to boon the early and efficient cancer diagnosis.
* Exploring artificial Intelligence techniques on Language processing like chatbot building

**Subjects Handled**

**Under Graduate:** Data Structure, Object oriented programming, C, C++, Graphics and Multimedia, Web Development, Operating System, Introduction to Computing, Internet Programming, Digital Image Processing

**Post Graduate:** Software Engineering, Software Project Management.

**Technical Skills**

* Programming languages: Python, C,C++, Java, MATLAB,
* Deep learning libraries: Tensorflow, Keras, Scikitlearn,opencv
* Font end Web development: HTML, CSS, Bootstrap
* Back end web development: PHP, SQL, Javascript

**Certifications**

1. Certification in Machine learning
2. Certification in OpenCV
3. Diploma in J2EE Programming
4. Certificate in Oracle
5. Certificate in Computer Applications

**Publications**

**Doctoral Dissertation:**

* S.Meenalosini,(2014), "New Methodologies for Efficient Computer Aided Malignancy Diagnosis in Digital Mammograms", Thesis, School of Computing, Veltech Dr.RR & Dr.SR Technical University

**International Book:**

* Dr.J.Janet, S.Meenalosini, Divya Mohandas, "Lossless Compression Techniques for Medical images in Telemedicine", ADVANCES IN TELEMEDICINE, Intech open Access Publisher, 2011.

**International Journals:**

1. Dr. P.Visu, Dr. Meenalosini Vimal Cruz, Dr. Murugananthan velayutham, Dr. Lakshmanan, “Software-defined forensic framework for malware disaster management in Internet of Thing devices for extreme surveillance “, Elsevier, Computer Communications, [Volume 147](https://www.sciencedirect.com/science/journal/01403664/147/supp/C),  November 2019, Pages 14-20.
2. S.Meenalosini and Dr.E.Kannan, "Malignancy detection in Mammogram using Gray Level Gradient Buffering Method",International Journal of Cancer Research,ISSN:2051-784X, Vol.47, No.1,2013.
3. S.Meenalosini, Dr.J.Janet and Dr.E.Kannan, " Computer Aided Diagnosis using Alarm Pixel Generation and Region Growing Method", International Journal of Digital Image Processing, ISSN 0974-9691,Vol 4, No.12, 2012.
4. S.Meenalosini, Dr.J.Janet and Dr.E.Kannan, "A Novel Approach in Malignancy Detection of Computer Aided Diagnosis" American Journal of Applied Science,ISSN 1546-9239,Vol.9, No.7, 2012.
5. S.Meenalosini,Dr.J.Janet and Dr.E.Kannan," Segmentation of cancer cells in mammogram using region growing method and Gabor features", International Journal of Engineering Research and Application,ISSN 2248-9622, Vol.2, No.2, 2012.
6. S.Meenalosini and Dr.J.Janet, " Computer Aided Diagnosis of Malignancy in Mammograms",European Journal of Scientific Research,ISSN 1450-216X, Vol.57,No.2, 2011.
7. S.Meenalosini and Dr.J.Janet, "Detection of Cancer Cells in Gabour filtered Mammogram Using Gray Level Co-Occurrence Matrices", International Journal of Digital Image Processing,ISSN 0974-9691,Vol. 3, No. 7, 2011.

**Journals under publication:**

1. Dr. Meenalosini Vimal Cruz, Dr. Sibi Chakkaravarthy, “An Efficient Retrieval of Health Records using Multi Keyword Searchable Attribute Based Encryption in Cloud”, IEEE Access, Manuscript ID Access-2019-25599.
2. **International Conference presentations:**
3. Dr. Meenalosini Vimal Cruz, Dr. S. Sibi Chakkaravarthy, Dr. Anupama Nambaru, Matthew Pittendreigh, Single valued Neutrosophic fuzzy c-means for MR brain image segmentation, International Conference on Recent Innovations in Engineering and Technology , New York, July 2019.
4. Dr. Meenalosini Vimal Cruz, Dr. S. Sibi Chakkaravarthy, Dr.Anupama Nambaru, Skin Cancer Detection Using Capsule Net, International Conference on Control, Automation, Robotics and Vision Engineering, Las Vegas, Nevada, May 2019
5. Dr. Meenalosini Vimal Cruz, Dr. S. Sibi Chakkaravarthy, Dr.Anupama Nambaru, A Robust Automated Brain tumor segmentation using Niftynet International conference on Digital Health -2019, Houston, TX, April 2019 – presented as Speaker
6. Dr. Meenalosini Vimal Cruz, Dr. P. Visu, S. Sibi Chakkaravarthy, “ Ensemble of deep learning models for feature extraction and classification in biomedical imaging”, International conference on Conference on Image science, Boston, USA, June, 2018
7. S.Meenalosini, Dr.J.Janet, Dr.E.Kannan,"Detection of Malignancy in Mammograms Using Region Growing and GLCM Features ",ICCCE 2012 Dr.M.G.R. Educational and Research Institute University, Chennai , ISBN No.978-1-4675-2246-5, 12,13-April 2012.
8. S.Meenalosini and Dr.J.Janet,"A Hybrid approach to detect cancer cells using gabour and gray level co occurrence matrices feature",Icccs 2011 Saveetha Engineering college, Chennai,ISBN

No.978-81-907494-6-6,14,15-December 2011

1. S.Meenalosini and Dr.J.Janet, "A Hybrid Approach for Earlier Detection Of Cancer Cells In Mammograms ",INCOS -2011,IEEE Students Branch-34451,Kalasalingam University, Krishnankoil, ISBN No.978-93-804660-9-5,1&2,April 2011.
2. S.Meenalosini, Divya Mohandas and Dr.J.Janet, "Joined Medical Image Compression Based on Wavelets ",ICST2011, VelTech Dr. RR & Dr.SR Technical University, Chennai, ISBN No.978-81-8424-650-6 ,January 2011.
3. S.Meenalosini and Dr.J.Janet, "Detection of masses in mammograms using Gabor features and Gray Level Co-Occurrence Matrices ", ICST2011 ,VelTech Dr. RR & Dr.SR Technical University, Chennai, ISBN No.978-81-8424-650-6 ,January 2011.
4. S.Meenalosini and Dr.J.Janet, “Performance evolution of pattern recognition for efficient number plate detection”, Nacont2010, Dr.Pauls Engineering College, Chennai, March 2010.

**Citations of research work by other researchers:**

1. Citations of my research publications – 55
2. H-index- 4, i10-index – 4

**List of Awards received**

1. Received Gold medal for securing First rank in the Manonmaniam Sundaranar University (State level University) In Post-graduation (M.Tech)
2. Best paper award in the International Conference on Cloud Computing & Services 2011
3. Best paper award in the International Conference on Computing and Control Engineering, 2012.
4. Achieved 100% Pass percentage teaching reward for 5 times.

**List of grants awarded:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No** | **Grant name** | **Funding organization** | **Fund amount** | **Date** |
| 1 | NH-INBRE SEED | NH-INBRE (External) | $8,734 | 2/8/2019 |
| 2. | Faculty Development Grant | Keene state college (Internal) | $3000 | 2/1/2019 |
| 3. | Global speaker grant | Global education department, KSC  (Internal) | $2,000 | 1/28/2019 |
| 4. | Student research stipend award | School of Sciences, Sustainability and Human health, KSC  (Internal) | $5600 | 10/10/2018 |

**List of Projects guided:**

* Medical Image analysis using Deep learning models
* Visible reverse K-nearest neighbor query processing.
  + An efficient routing communication in mobile ADHOC networks.
  + Efficient loss calculation and allocation techniques of multimedia files in wireless communication systems

**Undergraduate research student presentations:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Authors** | **Title** | **Conference** | **Date** |
| 1. | Dr. Meenalosini Vimal Cruz, Matthew pittendreigh | Single valued Neutrosophic fuzzy c-means for MR brain image segmentation | AEC | April,  2019 |
| 2. | Dr. Meenalosini Vimal Cruz, Matthew pittendreigh | MRI Image analysis using deep learning techniques | NH-INBRE Annual conference | August,  2019 |

**List of Workshops attended:**

1. Workshop organized by Microsoft Corporation on Advanced developer Technologies.
2. Faculty Development Program on Theory of Computations at Veltech University, Chennai, India.
3. "Basic Computer Science in Medical Education and Application work shop" organized by Dr. M.G.R Medical Education research Institute University, Chennai, India.

**List of workshops/seminars organized:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Workshop title** | **Speaker** | **Date** |
| 1 | Computer Vision workshop | Shem Garlock,  Principal Vision Engineer Osram Sylvania | March 19, 2019 |
| 2 | Cybersecurity workshop | Dr. Sibi Chakkaravarthy, Associate Professor, VIT-AP University, India | September27, 2019 |
| 3 | Global impact of Artificial intelligence- seminar talk | Dr. Sibi Chakkaravarthy, Associate Professor, VIT-AP University, India | September 24, 2019 |

* Organizing member of Big data seminar/Poster series at KSC. (2018-19)

**List of talks:**

1. A Robust Automated Brain tumor segmentation using Niftynet , International conference on Digital Health -2019 – Invited talk

2. "Hybridizing the Computer Aided Diagnosis techniques with the latest developments in Big data” – Big data Seminar series-2018, KSC

3. "Machine learning techniques on Medical Image analysis" – SSH Seminar series-2019, KSC

**List of poster events presented:**

1. Big data Poster event- 2018, KSC
2. SSH poster event- 2019, KSC

**Board Member Participations:**

1. Member of IEEE society
2. Kuwait Journal of Science.
3. International Journal of Imaging and Robotics.
4. IEEE – ICSTM 2017 Member of Honorary Technical Program Committee.
5. International Conference on AI and IoT technologies-Springer, Member of Honorary Technical ProgramCommittee.

**List of reviewed Ph.D Thesis (External reviewer):**

Nominated in 5 Ph.D thesis as external reviewer, in Academic year 2018-19 appointed as external reviewer in the following thesis,

1. Energy Efficient Routing Protocol for Resource Starving and Energy Harvesting in Wireless Sensor Network- Vel tech University, India
2. Hybrid Approaches For Identification of Glaucoma Disease in Human eye – Dr. MGR University

**List of Reviewed Journals**

1. “Sequence derived properties based classification of enzymes using support vector machine" Manuscript id: #35-ajb , American Journal of Bioinformatics.
2. "Earthquake Damage Assessment of Buildings Using Pre-event and Post-event Imagery ", Manuscript id: # 1342-AJEAS , American Journal of Engineering and Applied Sciences.,
3. "Particle Swarm Optimization (PSO) Based K-Means Image Segmentation Algorithm" Manuscript id: # 4755-JCS, Journal of Computer Science.
4. "An Optimal Voting Mechanism for Cluster- Based Certificate Revocation in Mobile Ad hoc Networks" Manuscript id: # 4139-JCS, Journal of Computer Science.
5. "Adaptive Local Means Filter for Polarimetric SAR Image Despeckling for Homogeneous and Heterogeneous Clutter Models " Manuscript id: # 4628-JCS, Journal of Computer Science.
6. "Optical fiber cables networks defects detection using thermal images enhancement techniques " Manuscript id: # 5152-JCS, Journal of Computer Science.
7. "SEISMIC DATA COMPRESSION USING WAVE ATOM TRANSFORM" Manuscript ID: # 4599-JCS, which has been submitted for consideration in Journal of Computer Science.
8. "Performance Analysis of Mammogram Classification Using SVM in Transform  
   Domain," Manuscript id: # 415, Kuwait Journal of Science.
9. "New and efficient blind detection algorithm for digital image forgery using homomorphic image processing," Manuscript id: # 1631, Kuwait Journal of Science.
10. “Trajectory based Abnormal Event Detection in Video Traffic Surveillance using General Potential Data field with Spectral clustering”- MTAP-D-18-01012,Springer
11. “Mobility Aware Multi Objective Routing in Wireless Multimedia Sensor Network”, MTAP-D-18-00960, Springer.
12. “Pseudo Random Number generator based on Cellular Automata with Self Organized Criticality”, MTAP-D-18-00871, Springer. General Potential Data field with Spectral clustering”,MTAP-D-18-01012,Springer.
13. Garbage Detection using SURF Algorithm based on Merchandise Marker, Science Publications, August, 2019.

**Institution level Committee Participation**

1. Member of Senate curriculum committee 2018-19
2. TIS committee
3. Diversity committee

**Languages**

* English (Read, Write, Speak)
* Tamil (Read, write, Speak)
* Telugu (Speak)
* Hindi (Read, Write)

**Interests**

* Diploma in Yoga – Interested in teaching the Yoga
* All type of Paintings - Interested in Teaching the same
* Specialized in Tanjore Painting, completed professional training

**Additional Information**

* Bachelor of Arts in Hindi
* Diploma in Fine Arts
* Certification in Journalism