

# Curriculum Vitae

1. **Name** : Dr. M. Mary Shanthi Rani
2. **Present Position** : Assistant Professor(Stage 3)
3. **Educational Qualification** : M.C.A. M.Phil. Ph.D
4. **Age** : 50 Years
5. **Teaching and Research Experience** : Teaching – 15 years  
Research – 10 years
6. **Specialization** : Image Compression  
Information Security  
Biometrics  
Computational Biology  
Big Data Analytics  
Data Mining
7. **Research Guidance** : **Ph.D** : Completed - 2 Ongoing – 2  
**M.Phil.** : Completed – 10 Ongoing - 1
8. **List of Research Articles Published / Presented:**  
International Journals – 34 International Conferences – 05 National Conferences – 20



## 9. Research Project

Associate Project Director, UGC Indo-US 21<sup>st</sup> Century Knowledge Initiative project titled “*Augmenting Curriculum of Higher Educational Institutions with an On-line Integrated Cognitive-based Employability Skills assessment System using Signal and Video Analytics*”

## 10. Books Published

*Novel Image Compression Methods Based on Vector Quantization*, Lambert Academic Publishing, Germany, January 2015

## 11. Books Edited

- *New Horizons in Computational Intelligence and Information Systems*, Excel India Publishers, New Delhi, December 2015
- *Recent Advances in Computer Science and Applications*, BonFring Publishers, Coimbatore, March 2015

## 12. Countries Visited

Visited University of North Florida, USA as a member of Indo-US Knowledge Initiative Project during the period 06.05.2017 – 5.06.2017

## 13. Conferences Organized

- i. National Conference on “*New Horizons in Computational Intelligence and Information Systems*”, December 2015.
- ii. Co-organizer, National Conference on “*Recent Advances in Computer Science and Applications*”, March 2015

## 14. Corporate Responsibilities at GRI

- i. NMEICT Coordinator, Department of Computer Science and Applications, GRI-DU
- ii. CBCS Coordinator, Department of Computer Science and Applications, GRI-DU

- iii. Member, Preparation of report on “Technology Enabled Learning” by the university in the exercise of framing new Educational Policy
- iv. Member, Board of Studies, Dept. of Computer Science and Applications, GRI
- v. Member, Monitoring and Enforcing Discipline Committee, Ladies Hostel, GRI

### **Publications in International Journals (Select Publications)**

- i. *A Hybrid medical Image coding method based on Haar wavelet Transform and particle swarm optimization*, International Journal of Pure and Applied Mathematics, 2018, Vol.118, Issue.18, 3059-3067, 1311-8080 (**UGC Approved Ref. No. 23425**) (**Scopus Indexed**)
- ii. *Particle Swarm Optimization based Image Enhancement of Visual Cryptography Shares*, Artificial Intelligence and Computer Vision, Volume 672 of the series Studies in Computational Intelligence, pp 31-49, DOI -10.1007/978-3-319-46245-5\_3, Print ISBN 978-3-319-46244-8, Online ISBN 978-3-319-46245-5. Series ISSN 1860-949X, Springer International Publishing, 2017 (**SCOPUS Indexed**)
- iii. *A Novel Hybrid Method of Haar Wavelet and Residual Vector Quantization for compressing Medical Image*, Advances in Computer Applications, IEEE, ISSN: 978-1-5090-3769-8, pp. 321-326 (**Scopus Indexed**)
- iv. *A Comparative study on Video steganography in spatial and IWT domain*, 2016 IEEE conference on Advances in Computer Applications, organized by Bharathiyar University, Coimbatore, October 2016. (**SCOPUS Indexed**)
- v. *Dynamic Hiding of Message in RGB Domain based on Random Channel Indicator*, International Journal of Applied Engineering Research, ISSN 0973-4562 Vol. 10 No.76,pp.478-483, 2015 (**SCOPUS Indexed**)
- vi. *Multilevel Multimedia Security by Integrating Visual Cryptography and Steganography Techniques*, Springer: Computational Intelligence, Cyber Security and Computational Models, Vol.412, pp. 403-412, December 2015 (**SCOPUS Indexed**)
- vii. *A New Referential Method for Compressing Genomes*, International Journal of Computational Bioinformatics and In Silico Modeling ,Vol. 4, No. 1,pp. 592-596, January 2015
- viii. *Teaching Java Programming on Smart phones - Pedagogy and Innovation : Proposal of its Ontology Oriented Implementation*, International Educational Technology Conference 2014, Chicago, USA, published in Procedia – Social and Behavioural Sciences, Elsevier,176(2015), pp.787 – 794, 2015 (**Scopus**)
- ix. *Residual Vector Quantization Based Iris Image Compression*, International Journal of Computational Intelligence Studies, Vol.3, No.4, pp.329-334, Inderscience Publishers, 2014
- x. *Video Steganography using Mid-Point Circle Algorithm and Spatial Domain Technique*, International Journal of Engineering and Techniques, 2018, Vol.4 Issue 1, 98-105, 2395-1303 (**UGC Approved Ref. No. 44326**)
- xi. *A Combination of Reversible Data Hiding and Medical Image Compression*, Journal of Global Research in Computer Science, 2018 Volume 9, No. 2, 1-6, 2229-371X (**UGC Approved Ref. No. 49002**)
- xii. *Video compression technique using transform based methods*, International journal of creative research thoughts, 2018, Vol.6, Issue 1, 1429-1438, 2320-2882 (**UGC Approved Ref. No. 49023**)
- xiii. *Proposal of an Hybrid Methodology For Ontology Development By Extending The Process Models Of Software Engineering*, International Journal of Information Technology Convergence and Services (IJITCS), DOI:10.5121/ijitcs.2016.6104,Vol.6, No.1,pp.37-44, February 2016

- xiv. *A Study on Secret Image Hiding in Diverse Color Spaces*, International Journal of Advanced Research in Computer and Communication Engineering Vol. 5, Issue 5, May 2016, pp. 779 – 783. DOI 10.17148/IJARCCCE.2016.55191
- xv. *Security Augmentation of Visual Cryptography using Watermarking Embedded QR Code*, In Proceedings of International Conference on Signal Processing, Control and Data Analytics -2016 (ICSCD 2016), San Diego, USA, 27-28 August 2016pp. sp-121 - sp-127.
- xvi. *A New Algorithm for Data Security by Integrating Symmetric Key Cryptography and Steganography in IWT Domain*, Proceedings of 2nd International Conference on Signal Processing, Control and Data Analytics – ISSRD, Sandiego, USA , Aug 2016, pp 68-75
- xvii. *MSKS for Data Hiding and Retrieval using Visual Cryptography*, International Journal of Computer Applications, Vol. 108, Issue No.4, pp. 41-47, December 2014. (UGC Approved Ref. No. 64190)
- xviii. *Eigen Value Based K-means Clustering for Image Compression*, International Journal of Advanced Information Systems, Vol.3-No.7, pp.21-24, August 2012.
- xix. *Novel K-means algorithm for compressing images*, International Journal of Computer Applications Foundation of Computer Science, New York, Vol.18-No.8, pp.9-13, May 2011.

### **Publications in International Conferences**

- i. *Adaptive Classified Pattern Matching Vector Quantization Approach for compressing images*, The 2009 International Conference on Image Processing, Computer Vision & Pattern Recognition Proceedings, Las Vegas, USA., pp.532-538, July 2009 (**Scopus Indexed**)
- ii. *A Pattern Based Residual Vector Quantization algorithm for compressing images*, International conference on Current Trends in Information Technology Proceedings, IEEE Computer Society, Dubai, pp.26-32, December 2009 (**Scopus Indexed**)
- iii. *Mode Based K-Means Algorithm with Residual Vector Quantization for Compressing Images*, International Conference on “Control, Computation and Information Systems” (Springer-Verlag CCIS 140), pp.105-112, February 2011 (**Scopus Indexed**)
- iv. *An Improved Fractal Image Compression using Residual vector Quantization for compressing medical Image*, Frontiers in Engineering, Applied Sciences and Technology, 86-90, ISBN: 978-81-908388-8-7

### **15. Training Programmes / Short Term Courses Attended**

- i. Short Term Course on “*Preparation of Research Projects for Faculties*”, Academic Staff College, University of Madras, Chennai, Aug.19<sup>th</sup> – Aug. 24<sup>th</sup>, 2013
- ii. Training Programme in “*Next Generation Sequencing (NGS) – Bioinformatics and Data Analysis (2014)*”, Anna university –KBC Research Centre, July 15<sup>th</sup> – 19<sup>th</sup>, 2014
- iii. GIAN Course – Medical Imaging Techniques from 30<sup>th</sup> October to 10<sup>th</sup> November 2017 organized by Department of Medical Physics, Anna University, Chennai

### **16. Invited Lectures and Chairmanships at National or International Conference / Workshops / Training Programmes etc.**

- i. Resource Person for the technical session on ‘Handy commands to work with Computers’ at UGC sponsored Training Programme for Professors of Gandhigram Rural Institute at Computer Centre, GRI, Jan. 2005.
- ii. Co-chairperson for the Technical session on Medical Imaging in National Conference on Signal and Image Processing organized by Department of Computer Science and Applications during Feb 10<sup>th</sup> and Feb 12<sup>th</sup>, 2012.

- iii. Delivered a talk on “*Image Compression-An Overview and its Applications*” at the State Level Workshop on Employability and Imaging Techniques, Fatima College, Madurai, March 2013
- iv. Delivered a talk on “K-means Clustering” at Department Level seminar at Fatima College Madurai, February 2014.
- v. Chair-Person for the Technical session of DST-PURSE Sponsored National Conference on Recent Trends in Intelligent Systems, University of Madras, March 2015.
- vi. Co-Chair for the Technical session on “*Data Mining and Information Security*” of National Conference on Recent Advances in Computer Science and Applications, Gandhigram Rural Institute – Deemed University, Gandhigram, March 2015.
- vii. Staff Coordinator of “*My Idea for M-India*” Programme organized during Digital India Week, July 2015.
- viii. Session Chair for the Seminar on “*Research Prospects in Digital India*” organized during Digital India Week, July 2015.
- ix. Co-Chair for the Technical session on “Geographic Information Systems and Image Processing” of National Conference on New Horizons in Computational Intelligence and Information Systems in Computer Science and Applications, Gandhigram Rural Institute – Deemed University, Gandhigram, December 2015
- x. Session Chair for the Technical Session on “Image Processing” of National Conference on Computational Methods, Communication Techniques and Informatics, Gandhigram Rural Institute – Deemed University, Gandhigram, January 2017
- i. Session Chair for the Technical Session on “Image Processing” of International Conference on “Computer Vision, Networks and Informatics”, March 2018

#### **17. Reviewer / Membership in Professional Bodies**

- ii. Life member – Indian society for Technical education.
- iii. Reviewer, IEEE International Conference on Current Trends in Technology, Dubai Womens’s College, Dubai, 2013.
- iv. Reviewer, International Journal of Computational Intelligence Studies, Inderscience Publishers.
- v. Reviewer, International Journal of Computer Science and Information Security (IJCSIS).
- vi. Member, Department Advisory Committee, PSNA College of Engineering, Dindigul
- vii. Member, Board of Studies, Fatima College, Madurai
- viii. Member, Board of Studies, St.Mary’s College, Tuticorin
- ix. Member, Organizing Committee, Digital India Celebrations – 2015
- x. Member, Documentation Committee of South Zone Students’ Research Convention, January 2013.
- xi. Member, Organizing committee of the National Conference on Signal and Image Processing organized by Department of Computer Science and Applications during Feb 10<sup>th</sup> and Feb 11<sup>th</sup>, 2012.
- xii. Member, Organizing committee of the National Conference on Image Processing organized by the Department of Computer Science and Applications during Feb 13<sup>th</sup> and Feb 14<sup>th</sup>, 2010
- xiii. Member, Organizing committee, National Science Day Celebrations, FROS,GRI-DU .
- xiv. Member, Organizing committee of the National Conference on Computational Methods, Communication Techniques and Informatics during Jan 26<sup>h</sup> and Jan 27<sup>th</sup>, 2017
- xv. Member, Organizing committee of the International Conference on “Computer Vision, Networks and Informatics”,2018

#### **18. Merit Scholarships / Other Achievements**

- i. Merit Scholarship Holder for securing state rank in S.S.L.C board Examination, 1981-83.
- ii. University Rank Holder, B.Sc. Physics, Madurai Kamaraj University, Madurai
- iii. Passed UGC-NET exam during 1996.

\* \* \* \* \*