Curriculum Vitae

NAME : **Dr.Mini M.G**

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Doctor Of Philosophy	Field of Research: Image Processing Institution/University: Cochin University of Science & Technology
Masters Degree	Specialization: Digital Electronics Institution/University: Department of Electronics, Cochin University of Science & Technology
Bachelors Degree	Specialization: Electronics & Communication Engineering Institution/University: College of Engineering, Thiruvananthapuram, Kerala University

Professional Experience :

30 years of teaching and research experience under Institute of Human Resource Development(IHRD), Government of Kerala in various institutions.

Presently working as **Professor in Electronics and Principal in charge at College of Engineering, Cherthala**

From **13.11.1989 to 21.7.2007 , Lecturer in Electronics/ Assistant Professor** in various institutions under IHRD including Model polytechnic , Mala, Model Polytechnic , Vadakara, THSS, Kaprassery, Model Engineering College, Thrikkakara and College of Engineering , Chengannur.

Worked as Principal in charge from August 1997 to Nov 1998 at MTHSS Kaprassery and Dec 1998 to June 1999 in MPT , Mala

From **21.7.2007 to 9.9.2016, Associate Professor in Model Engineering College and College of Engineering Cherthala.**

From May 2012 to Sept 2012 worked as Principal in charge at Model Engineering College and from March 2016 to till date as Principal in charge at College of Engineering , Cherthala

From **09.09.2016 working as Professor in Electronics.**

Subjects Handled

PG-Level:

Advanced Digital System Design	Multi Rate Signal Processing
VLSI DSP Architecture	Multidimensional Signal Processing
Embedded System Design	Image Processing
High Speed Digital Design	Research Methodology

UG-Level:

Digital Electronics	VLSI Design
Electronic Circuits	Advanced Integrated Circuits
Network Theory	Digital System Design
Microprocessors	Communication Theory
Control System Engineering	Digital Signal Processing
Test & Measuring Instruments	

Research Activities

Details of Research Projects carried out

Sl no	Name of the project	Amount of Funding	duration	sanctioned Agency
1	Design of a programmable stimulation system for biomedical implants	16 lakhs	2 years	AICTE under RPS scheme
2	ROI Based Compression of Radiographic images	8.6 lakhs	3 years	Kerala State Council For Science Technology and

				Environment
3	Design, Analysis and improvements in system on chip interconnects	8 lakhs	3 years	UGC – Moulana Azad National Felloship

Research Guide under Cochin University of Science and Technology (CUSAT) and APJ Abdul Kalam Technological University (KTU). Currently 6 research scholars are pursuing Ph.D in the areas of Signal and Image Processing and VLSI and Embedded Systems.

Details of Ph.Ds produced.

No	Name of scholar	Thesis	Year
1	Aryadevi P.S	Region of Interest based PET Image Compression using Linearly Predicted Wavelet Coefficients	2017
2	Anoop T.R	Detection, Classification and Matching of Altered Fingerprints using Ridge & Minutiae Features	2017
3	Simi Zerine Sleeba	Performance and Reliability Enhancement Techniques for Two Dimensional Network – on –chips using Adaptive Deflection Routers	2018

Publications

International Journals   : 25
International Conferences   : 44

National Journal   : 3

National Conference   : 6

List of Publications:

➢ *International journal*

1. **Simi Zerine Sleeba**, Mini M.G. (2017). An Energy Efficient Fault Tolerant Technique for Deflection Routers in 2D Mesh NoCs. IET Computers and Digital Techniques. Vol.12, No. 3, 2018.pp. 69-79. DOI: 10.1049/iet-cdt.2017.0006.

2. **Simi Zerine Sleeba**, Mini M.G. (2017). An Enhanced Model for Reliable Deflection Routing in Mesh Network On Chip, International Journal of High Performance System Architecture. Inderscience Publishers. Vol.7, No. 2, 2017. pp.87-97. DOI: 10.1504/IJHPSA.2017.10008113.

3. P Jagadeesh Kumar, M G Mini " An NBTI Aware Real Time Scheduler for Multi Core Processors", IJETSR, Volumne4, Issue10, October 2017, ISSN 2394-3386

4. Swapna P.P, Mini M.G, "A Regression Neural Network based Glaucoma Detection System using Texture Features, " *Int'l Journal of Computing, Communications & Instrumentation Engg. (IJCCIE)* Vol. 3, Issue 2 (2016) ISSN 2349-1469 EISSN 2349-1477, pp   277-279.

5. **M G Mini**, Arya Devi P S, "Enhancement Technique for PET Images Using Statio nary Wavelet Transform and High Boost Filtering" *International Journal of Electr onics and Communication Engineering (IJECE)*, Vol.5, No.1, pp 55-66, January 2 016.

6. Arya Devi. P S and **M G Mini,** "PET Image Segmentation Based on Gabor Annulus Filtering and Region Growing ", *International Journal of Computer Theory and Engineering* , 1793-8201,8(5), pp 409-414, 2016.

7. **Mini M.G,**Anoop T.R, "Orientation Field Reconstruction of Altered Fingerprint using Orthogonal Wavelets", *ICTACT Journal on Image and Video Processing* (Volume: 6 , Issue: 2),pp November 2015

8. Anoop T R, **Mini M G**, "Hough transform based technique for fingerprint alteration detection and classification ", *International Journal of Biometrics(IJBM),*   Inderscience , Vol 4, No.7, pp 309-325 , 2015.

9. Simi Zerine Sleeba , **Mini M.G,** "Minimally Buffered Router using Weighted Deflection Routing for MeshNetwork on Chip ", *International Journal of VLSI design & Communication Systems (VLSICS)*   0976-1527, 6(3), pp 59-71, 2015. DOI : 10.5121/vlsic.2015.6306.

10. Arya Devi. P S and **M G Mini,** "Mammoraphic Image Enhancement using SWT and High Boost Filtering*", International Journal of Computer Theory and Engineering* , 1793-8201,7(5), pp 374-378, 2015

11. **Mini M. G.,** Anoop T. R., "Ridge orientation reconstruction of Altered Fingerprint using orthogonal wavelet" ICTACT Journal on Video and Image Processing, Volume 6, Issue 2, pp. 1127-1132, November 2015

12. Anoop T R, **Mini M G**, 'Altered FP matching using Ridge texture and Ridge frequency in the unaltered Region',Bonfring International Journal of Advances in Image Processing IF 0.245, ISI, 5(2), pp 6-9, 2015.

13. Arya Devi. P S and **M G Mini**, "Mammoraphic Image Enhancement using SWT and High Boost Filtering", *International Journal of Computer Theory and Engineering* vol 7, No.5 pp 374-378 2015

14. Anoop T R, **Mini M G**, "Two Stage Framework for Altered Fingerprint Matching", *ICTACT journal on Video and Image Processing*, IF 0.651, GIF, 5(4), pp1024 – 29, 2015.

15. Anoop T R, **Mini M G**, Comparison of Ridge Discontinuity Analysis Methods of Altered FP, *International Journal of Innovative Trends in Engineering* IF 0.672, GIF, 5(1), pp 44-46,2015.

16. P Jagadeesh Kumar, **M G Mini** "An Analog Integrated Circuit sensor for detecting the Negative Bias Temperature Instability effect in Deep Sub Micron MOS Devices", Advances in Information Technology and Power Electronics, McGraw Hill Education (India) Private Limited, ISBN(13):978-93-392-2161-4

17. Anoop T R, **Mini M G, "**Fingerprint alteration detection using Scars, Minutiae density, and Ridge Discontinuity" , *International Journal of Scientific and Engineering Research* IF 3.2 Science watch , ISSN 2229-5518, 4(8), 2013.

18. Arya Devi P S, **M G Mini**, "Compression of Medical Images by Prediction on Wavelet Transform Coefficients", *Bonfring International Journal of Advances in Image Processing*, Vol. 2, No. 4, pp 09-16 December 2012.

19. Aryadevi P.S, **M.G.Mini**, "Gray scale Image Compression based on Wavelet Transform and Linear Prediction", *International Journal of Multimedia and Applications*, 2012.

20. T Ashok Kumar**,** S Priya and **M.G Mini**," Fast Optic Disc Localisation and Detection in Retinal Fundus Image Using Bit Plane Decomposition and

Mathematical Morphology"-*CIIT International Journal of Digital Image processing*, Vol 3,no:3,March 2011 pp149-156 .

21. **M.G. Mini**, V.P. Devassia and Tessamma Thomas, "Low-Memory Block Discrete Wavelet Transform for Image Processing," *AMSE   Journal on Signal Processing and Pattern Recognition*,   Vol.47, no.2, pp 47-64,2004

22. **M.G. Mini,** V.P. Devassia and T. Thomas, "Block Discrete Wavelet Transform for Real-

    time Processing of One-Dimensional signals," *AMSE   Journal on Signal Processing and Pattern Recognition*. Vol.47, no.2, pp 65-76,2004

23. **M.G. Mini,** V.P. Devassia and T. Thomas, "Multiplexed Wavelet Transform Technique forDetection of Microcalcification in Digitized Mammograms", *Journal of Digital Imaging. Vol 17, No.4, pp 281-293, Dec.2004*

24. **M.G. Mini,** V.P. Devassia and Tessamma Thomas, "Detection of Microcalcification in Digitized Mammograms using wavelet Transform Local Extrema" *Journal of Digital Imaging,* Vol 16, Supplement1, pp 8-10, July 2003.

25. V.P.Devassia, **M.G.Mini** , Tessamma Thomas, "A Novel Parallel Structure for Computation of Discrete Wavelet Transform of images" , *AMSE   Journal on Computer Science and Statistics*   vol. 7, no.3, pp 25-40, 2002.

National Journal

1. **M.G Mini**, V.P Devassia and Tessamma Thomas, "In-Place Computation of Block DiscreteWavelet   Transform", *IETE journal of Education*, vol.43, No.2 pp 79-82 April-June 2002.

2. V.P.Devassia, **M.G.Mini** & Tessamma Thomas, " Instrument –Dependent Noise Suppression Using PSWT", *J. Acoust. Soc. of India*, vol. 30,   pp 164-167, 2002.

3. V.P.Devassia, **M.G.Mini** & Tessamma Thomas, "Application of Pitch-Synchronous Wavelet Transform In The Analysis Of Guitar Music*," J. Acoust. Soc. of India*, vol. 29, No 2-4,   pp 296-302, 2001.

International Conference Papers

1. Sajitha S, Minimol Balakrishnan , **Mini M G** (2019) A Computational model of Autonomic Nervous System for Heart Rate Variability presented in the International Conference in Computing in Cardiology 2019 (CinC 2019) Singapore 8-11 September 2019.

2. Simi Zerine Sleeba**,** John Jose, Maurizio Palesi, Rekha James, **Mini M.G.** (2018). Traffic Aware Deflection Re-routing Mechanism for Mesh Network on Chip in Proceedings of the 26th IFIP/IEEE/AICA International Conference on Very Large Scale Integration, VLSI-SoC, Verona, Italy, October, 2018.

3. P Jagadeesh Kumar, **M G Mini** " An NBTI Aware Real Time Scheduler for Multi Core Processors", Second International Conference on Science, Technology & Management (ICSTM-2017).

4. Aiswarya Suresh, **Mini M.G.,** "Detection of Breast cancer based on Bilateral Asymmetry in Mammograms", Proceedings of the International Conference on Signal Processing And Advanced Communications SPAAC 2016, 9-10 August 2016.

5. Geethy Ann Babu, **Mini M.G.,** "Companding Algorithm for HDR Mammography images with Improved Contrast", Proceedings of the International Conference on Signal Processing And Advanced Communications SPAAC 2016, 9-10 August 2016.

6. Swapna P.P, **Mini M.G**, "A Regression Neural Network based Glaucoma Detection System using Texture Features, " Proceedings of Int'l Conference on Computing, Techniques & Mechanical Engg. (ICTME-2016) June 8-9 ,2016, New Jersey, USA pp 8-35.

7. Anoop T. R., **Mini M. G**., "Hough Accumulator Threshold Based Method for Fingerprint alteration Detection and Classification" Proceedings of ICETTAS, Bonfring International Journal of Advances in Image Processing. April-2015.

8. Simi Zerine Sleeba**,** John Jose, **Mini M.G.** (2015). HiPAD: High Performance Adaptive Deflection Router for On Chip Mesh Networks In Proceeding of the 5th

International Conference on Advances in Computing and Communications, Kochi, India, IEEE Xplore, September, 2015, pp. 16-19.

9. Aparna Devi P.S & **M.G. Mini**, "An Iris Texture feature based Radial Basis Neural network Classifier with enhanced performance ", Proceedings of International Conference on Electronics, Signal Processing and Communication Engineering (E-SPACE 2015), 9-11 Dec 2015, GEC Thrissur.

10. Jibi John & **M.G. Mini**, " Multilevel Thresholding based Segmentation and Feature Extraction for Pulmonary Nodule Detection ", Proceedings of International Conference on Electronics, Signal Processing and Communication Engineering (E-SPACE 2015), 9-11 Dec 2015, GEC Thrissur.

11. Anoop T R, **Mini M G**, "Hough Accumulator Threshold Based Method for Fingerprint alteration Detection and Classification" Proceedings of ICETTAS, Bonfring nternational Journal of Advances in Image Processing. April-2015.

12. Michael George, Jagadeeshkumar P, **M.G.Mini, "**'Implementation of Digital Stimulus Generation System for a Passive Programmable Medical Implant' Accepted at IEEE SPICES 2015 19-21 February 2015 at National Institute of Technology (NIT) Calicut, Kozhikode, Kerala, India.

13. P Jagadeesh Kumar, **M G Mini** "An Analog Integrated Circuit sensor for detecting the Negative Bias Temperature Instability effect in Deep Sub Micron MOS Devices", Fifth International Conference on Advances in Computer Engineering – ACE 2014.

14. Simi Zerine Sleeba, John Jose, **Mini M.G**.(2014). WeDBless: Weighted Deflection Buffer-less Router for Mesh NoCs. In Proceedings of Great Lakes Symposium on VLSI (GLSVLSI) , Houston, USA, ACM Digital Library, May, 2014, pp. 77-78.

15. Arya Devi. P S and **M G Mini**, "Mammoraphic Image Enhancement using SWT and HighBoost Filtering", presented at ICCDE 2014(4th International Conference on Computer, Design and Engineering 2014) at Dubai on 22-23 August 2014

16. Simi Zerine Sleeba; John Jose; **Mini M.G.** ," WeDBless : Weighted Deflection Bufferless Router for Mesh NoCs", GLSVLSI '14: Proceedings of the 2014 Great Lakes Symposium on VLSI.

17. Anoop T. R., **Mini M. G**., "Fingerprint obliteration detection using Minutiae density, Ridge Discontinuity and Scar" Proceedings of International Conference on Global Innovation in Technology and Science , April-2013.

18. Anoop.T. R, **Mini.M.G** "Detection of fingerprint obliteration using Scars, Minutiae Density and Ridge Discontinuity" Proceedings of International Conference on Global Innovation in Technology and Science , (ICGITS) , April 2 to 6, 2013, Saintgits College of Engineering.

19. Arya Devi P S, **M G Mini**, " Compression of Computed Radiographic Images Using Linear Prediction on Wavelet Coefficients", Advances in Computing and Communications, International Conference (ICACC), 2012, Kochi, August 9-11 2012, IEEE Xplore.

20. Aryadevi P.S, **M.G.Mini**, Compression of Gray scale Image using Linear Prediction on Wavelet Coefficients, Advances in Computer Science and Information Technology,, Computer Science and IT, 2nd International Conference CCSIT 2012, Bangalore , January 02-04,2012, Proceedings, PAT III, LNICST, Vol 86, Springer, pp 49-58.

21. Arya Devi P S, **M G Mini**, "Compression of Computed Radiographic Images Using Linear Prediction on Wavelet Coefficients", Advances in Computing and Communications, International Conference (ICACC), 2012, Kochi, August 9-11 2012, IEEE Xplore, pp 130 – 133.

22. B. Samuvel, V. Thomas, **M.G. Mini**, J. Renjith Kumar, " A Mask Based Segmentation Algorithm for Automatic Measurement of Cobb Angle from Scoliosis X-Ray Image*"*,Advances in Computing and Communications (ICACC), 2012 International Conference ,January 2012

23. T ashok Kumar, S Priya and **M.G Mini**, Optic Disc Localisation in Ocular Fundus Images- IJCA PROC.on Int.conf.on ICVCI (5):20-23,2011.

24. **Mini M.G., 2011,** Neural Network based Classification of Digitized Mammograms', presented in the Second Kuwait Conference on e- systems and services Kcess'11 , at Kuwait University 4-6 April 2011.

25. Smitha P. , Shaji L, **Mini M.G.** ,A Review of Medical Image Classification Techniques, Proceedings of the International Conference on VLSI, Communication

& Instrumentation (ICVCI) 2011 published by International Journal of Computer Applications® (IJCA) pp 34 -39

26. Anitta Thomas, Jagadeesh Kumar P., **M.G.Mini**, **2010**, Implementation of a Low-power, Reliable, Crosstalk Avoidance Coding Scheme for SoC Communication, CNC '10 Proceedings of the 2010 International Conference on Advances in Communication, Network, and Computing.

27. Simi Zerine Sleeba, Binesh T, **M.G.Mini**, **2010**, An Embedded Hands Free Computing Application using Speech Recognition CNC '10 Proceedings of the 2010 International Conference on Advances in Communication, Network, and Computing.

28. Reenu Aliyamma Cherian, Jibi John, **M.G.Mini**, **2010**, Custom Processor Implementation of a Forward Error Correction Scheme for Low Power RF Communications, Recognition CNC '10 Proceedings of the 2010 International Conference on Advances in Communication, Network, and Computing.

29. **Mini M.G**, Devassia V.P, Tessemma Thomas, " Neural network based classification of digitized mammograms" Proceedings of 2nd International conference on Biomedical informatics and signal processing, ICBMSP 09 held at SSN college of Engg, Chennai 13-14th March , 2009.

30. **Mini M.G** , Devassia V.P " wavelet transform based microcalcification detection", Proceedings of 2nd International conference on Biomedical informatics and signal processing, ICBMSP 09 held at SSN college of Engg, Chennai 13-14th March , 2009.

31. Dinesh Kumar V.P., Devassia V.P., **Mini M.G**. and Tessamma Thomas, "A Parallel Multiple Subsequence Structure for Wavelet Packet Transform on MPPs, Proc. of the International Conference on Emerging Technologies and Applications in Engineering, Technology and Sciences, (ICETAETS -2008), pp.733-737, 2008.

32. V.K.Jayasree, **M.G.Mini**, V.P.N Nampoori , P.Radhakrishnan, "Wavelet based denoising
of Photoplethysmographic signals", *Procedings of the International Conference Photonics 2006,*   Hyderabad, India., **December 13 – 16, 2006** .

32 **M.G. Mini** and Tessamma Thomas, "A Neural Network Method for Normal / Abnormal
Classification of Digitized Mammograms"' *Proceedings of IASTED Int.Conf on Neural Network and Computational Intelligence* (NCI 2004), Grindelwald, Switzerland ,Feb. 22 - 25, 2004.

33. **M.G. Mini** and Tessamma Thomas, "A Neural Network Method for Mammogram Analysis Based on Statistical Features" *Proc. of the IEEE TENCON-2003*, Bangalore, Oct.2003.

34. **M.G. Mini,** V.P. Devassia and Tessamma Thomas "Detection of Microcalcification in Digitized Mammograms using wavelet Transform Local Extrema", *Proceedings of SCAR-2003*, Boston, June 2003.

35. **M.G. Mini**,V.P. Devassia and Tessamma Thomas, " One-Dimensional processing for edge detection in Biomedical Images using Pitch-Synchronous Wavelet Transform." Accepted in the *Int. Conf METMBS-02*, Las Vegas USA, June 24-27, 2002.

36. **M.G. Mini**,V.P. Devassia and Tessamma Thomas, "Block Discrete Wavelet Transform for Real-time Processing of One-Dimensional signals," Proceedings of the International *Conference on Business Decision &Technology, BDT-02*, Kuwait vol.1, pp 155-162, March 18-20, 2002.

37. Deepa J., **M.G. Mi**ni, Tessamma Thomas , 'A Robust Method for Blind Digital Image Watermarking using Wavelet Techniques' Accepted for presentation in the IEEE Int . Conference ITPC_03, Nepal, May 2003.

38. V.P. Devassia, **M.G. Mini** & Tessamma Thomas, 'Novel computational structure for real time wavelet analysis' *Proceedings of the SPIE 2003 Conference in Modeling, Signal Processing, and Control* , San Diego, March 2003.

39. V.P. Devassia, **M.G. Mini** & Tessamma Thomas, ' Efficient Parallel Structure for Wavelet Transform Based Processing of Biomedical Images', Proceedings of the *Int. Conf METMBS-02*, Las Vegas USA,June 2002.

40. V.P. Devassia, **M.G. Mini** & Tessamma Thomas, ' PSWT Based Predictive Coding and Compression of ECG Signals' Proceedings of *the Int. Conf METMBS-02*, Las Vegas USA,June 2002.

41. V.P. Devassia, **M.G. Mini** & Tessamma Thomas, ' Wavelet Transform Based Classification Of Vocal Music Into Voiced, Unvoiced, Silent And Transition Regions 'Proceedings of the *Int. Conf   MS-02*,Spain, June 2002.

42. V.P.Devassia, **M.G.Mini**& Tessamma Thomas, "Feature Enhancement Using PSWT Techniques:A Study On Instrumental Music", *Proceedings of the International Workshop on Linear Algebra , Numerical Functional analysis, and Wavelet Analysis*, Eds. S.H.Kulkarni,M.N.N. Namboodiri, India, pp. 65-77, Aug.6-15, 2001.

43. V.P.Devassia, **M.G.Mini** & Tessamma Thomas, 'An Efficient Algorithm for Time-Domain Computation of Discrete Wavelet Transform,' Accepted for presentation in the *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Utah, May 7-11, 2001.

National Conference Papers

1. Arya Devi P S, **M G Mini** , "Segmentation of Mammographic Images by Eccentricity and Contrast difference ", Proceedings of National Conference on VLSI, Optoelectronics & Communication and Signal Processing NCVOS 2015 pp 87-90.

2. **M.G. Mini**,V.P. Devassia and Tessamma Thomas, "A comparative study on the application of wavelet based techniques for microcalcification detection in mammograms', Proceedings of *Nat. Conf. On Communications (NCC-2003*), IIT, Chennai,pp 601-605, Feb.2003.

3. **M.G.Mini**, V.P.Devassia and Tessamma Thomas, 'Block Discrete Wavelet Transform for Real-Time Processing of Speech Signals,' Proc. of the *Nat. Conf. On Communications (NCC-2002)*, pp 374-378, Jan.2002.