

RNS Institute of Technology, Channasandra, Bangalore-560098
ECE Dept | RESUME - Faculty

Name	Dr. Vipula Singh		
Date of Birth			
Address	Contact Address: Professor, Department of ECE, RNSIT, Bangalore-98 E-mail: vipulasingh@yahoo.com		
Subject / Discipline/ Major	Electronics and Communication Engineering		
Educational Qualifications	Exam Passed	Institution University	Year
	Degree: BE (Electronics Engineering)	NIT Bhopal	1992
	PG: M.Tech (Electronics Engineering)	NIT Nagpur	2003
	Higher: Ph.D	Guru Gobind Singh Indra Prastha University New Delhi	2009
Experience	Nature of Experience	No. of Years	
	Teaching	26	
	Industry/Research	2	
	Total No. of years of Experience	28	
Experience Details	Designation	Institution/ Organization	Duration
	Professor & Head	RNS Institute of Technology	April 2011-Til date
	Professor & Head	Geethanjali College of Engineering & Technology Hyderabad	June 2010 - March 2011
	Associate professor	VNRVJIET Hyderabad	Nov 2008 - May 2010
	Associate professor	PES Institute of Technology (PESIT) Bangalore	Aug 2004-October 2008
	Assistant professor	Apperjay College of Eng. Gurgaon Haryana	May 2003-July 2004
	Assistant professor	Institute of Integral Technology, Lucknow Uttar Pradesh	April 2002-April 2003
	Assistant professor	Sri Ram Dev Baba Kamla Nehru Engineering College, Nagpur, Maharashtra	Aug 2000-March 2001
	Assistant professor	Institute of Engineering and Technology, Indore, Madhya Pradesh	Aug 1998-April 2000
	Assistant professor	Madhav Instiyute of Technology and Science, Gwalior, Madya Pradesh	June 1995-June 1998
Professional bodies Membership details	IEEE, IEEE Signal Processing, ISTE, IEICE		
Other Professional Experiences	<ul style="list-style-type: none"> Design engineer in R&D department in Punjab Communications Ltd. (Govt Undertaking) Mohali, Punjab from Jan 1993 to Dec 1994 		
Areas of Research Interest & Guidance	<ul style="list-style-type: none"> Image compression, Image Processing, Medical Image processing, GPR, Pattern Recognition, Machine learning 		
National/ International Work Shops/ Seminars /	<p style="text-align: center;">International Conferences</p> <ul style="list-style-type: none"> A Neuro Fuzzy Model for Image Compression in Wavelet Domain”, International conference on Image and signal processing, ICISP 08, July 2008. Published in LNCS vol no 5099, pp 46-58. available on line http://portal.acm.org/citation.cfm?id=1426613 		

Conferences Attended

- “An algorithmic approach based on Fuzzy Vector Quantization and Wavelet decomposition for Image Compression”, International conference on Artificial intelligence and Pattern recognition, (AIPR 08), July 2008, pp 43-49.
- “Scalar Quantization and Vector Quantization based Wavelet model for Image Compression – A Comparative Study”, International conference on content based image retrieval, ICBBIR 08, July 2008, pp 200-206.
- “Neuro wavelet approach for image compression”, IEEE International Conference on Computer Graphics Imaging & Visualization CGIV 2007, August 2007, pp 280-285, published by IEEE computer society. Available on line http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=4293685
- “Data Compression using non uniform sampling”, IEEE International Conference on Signal Processing, Communications & Networking, ICSCN 2007, Feb 2007, pp 603-607. Available on line http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=4156695
- “Efficient Representation of 2-D Contour by Non-Uniform Sampling”, IEEE International Conference on Signal Processing and Communication, (SPCOM), Dec 2004, pp 37-40. Available on line http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=1458352
- “Efficient and fully Automatic ECG Abnormality Diagnostic System” The International Conference on Multimedia and Content Based Information Retrieval (ICMCBIR) July 2012
- “Low-Complexity Image Compression Algorithm for Onboard Satellite” The International Conference on Multimedia and Content Based Information Retrieval (ICMCBIR) July 2012
- “Automatic Detection of Diabetic Retinopathy in Non-detailed RGB Retinal Fundus Images” ICMCBIR, July 2012
- “Near Lossless Image Compression System” Microelectronics and Electronics (PrimeAsia), 2012 Asia Pacific Conference on Postgraduate Research 5-7 Dec. 2012
- "ECG Signal Processing for Remote Healthcare System", International Conference on Circuits, Controls and Communication (CCUBE), 978-1-4799-1601:2013, IEEE.
- "FPGA Implementation of Log Multiplier based on Fusion of OD and Mitchell for Image Processing Applications", 2013 International Conference on Circuits, Controls & Communications, Bengaluru, 27-28th Dec 2013.
- "Lossless Hyperspectral Image Compression based on Prediction", RAICS, 2013. DOI: 10.1109/RAICS2013.6745472.
- “Lossless Hyperspectral Image Compression Using Inband and Interband Predictors”, Paper presented at International Conference on Advances in Computing, Communications and Informatics (ICACCI), 2014, pp. 332-337. Available in the IEEE Xplore Digital library, DOI: [10.1109/ICACCI.2014.6968457](https://doi.org/10.1109/ICACCI.2014.6968457)
- “ECG Signal Analysis”, International conference on Research in Business Management and Information Technology, Published in ELK Asia Pacific Journals, ISBN: 978-81-930411-5-4, April 22nd 2015.
- “Low Complexity Distributed Approach to Hyperspectral Image Compression”. IEEE TENCON 2015, Nov 1st to 4th, Macau.
- “Clutter Reduction using Background subtraction of Ground penetrating radar for landmine detection”, 2015 IEEE Asia Pacific Conference on Postgraduate Research in Microelectronics and Electronics (Prime Asia)
- Electromagnetic wave propagation modeling of soil for GPR”, International Conference Research in Business management and Information Technology, ICRBIT 2015
- Clutter reduction techniques of ground penetrating radar for detecting subsurface explosive objects”, 5th IEEE International Conference on Information, Communication & Embedded Systems, ICICES 2016
- ” An Efficient Algorithm for Peak Detection on B-Scan data generated using GPR”, IEEE International conference on Computer Communication and Informatics, ICCCI 2016
- “Lossy Image Compression using SVD Coding Algorithm”, IEEE WiSPNET 2016, pp 1427-1432.
- “Pyramidal horn antenna for ground penetrating radar application” INDICON 2016
- “Extraction and description of tumour region from the brain MRI image using segmentation techniques”, Recent Trends in Electronics, Information & Communication Technology (RTEICT), IEEE International Conference on, PP 1571-1576, 2016
- “Through-wall imaging system using horn antennas”, *International conference on "Advanced Computing and Communication Systems - ICACCS 2017*
- ” Horn antenna for GPR application”, INDICON, 2017, IEEE conference
- Joint Source Channel Coding for Hyperspectral Imagery”, INDICON 2017 IEEE Conference.
- “Detection of targets using Neural Network Classifier for GPR data”, Third International conference on Electrical, Electronics, Communication, Computer Technologies and Optimization Technologies (ICECCOT), pp. 1136-1141, Dec 2018.

- “Morphological approach for Retinal Microaneurysm detection”, Proceedings of 2018 2nd International Conference on Advances in Electronics, Computers and Communications, ICAECC 2018, 2018, 8479500
- “Brain Tumor Extraction from MRI Using Clustering Methods and Evaluation of Their Performance”, Proceedings - 2018 4th International Conference on Computing, Communication Control and Automation, ICCUBEA 2018, 2018, 8697675
- “ECG denoising using wavelet transform and filters”, Proceedings of the 2017 International Conference on Wireless Communications, Signal Processing and Networking, WiSPNET 2017, 2018, 2018-January, pp. 2395–2400

National Conferences

- “Image Compression”, Proceedings of National Conference on Recent Trends and Emerging Technologies in Electrical Systems, Elcon 05, October 05, pp 186-196.
- “Image Compression Using Wavelets: A Tutorial”, Proceedings of National Conference on Signal Processing, VLSI and Communications, NCSVC 06, March 06, pp 57-64.
- “Image Compression using neural networks”, Proceedings of National Conference on Recent Trends and Emerging Technologies in Electrical Systems, Elcon 06, October 06, pp 110-117.
- “Image Analysis for Diabetic Retinopathy”, Proceedings of National Conference on Advances in Communication Technologies NCACT'12, Jan 2012, pp 382- 388.
- “Tera Hertz Technology and its Applications”, Proceedings of National Conference on Emerging Trends In Signal Processing and Embedded Systems SPES'12, Feb 2012.
- “Automatic ECG Abnormality Diagnostic System“, Proceedings of National Conference on Computational Intelligence & Applications NCCIA'12, 9 & 10 Feb 2012.
- “Satellite Image Compression Techniques”, Proceedings of National Conference on Computational Intelligence & Applications NCCIA'12, 9 & 10 Feb 2012.
- “Image Analysis for Diabetic Retinopathy”, Proceedings of National Conference on Advances in Communication Technologies NCACT'12, Jan 2012, pp 382- 388.
- “Tera Hertz Technology and its Applications”, Proceedings of National Conference on Emerging Trends In Signal Processing and Embedded Systems SPES'12, Feb 2012.
- “Automatic ECG Abnormality Diagnostic System“, Proceedings of National Conference on Computational Intelligence & Applications NCCIA'12, 9 & 10 Feb 2012.
- “Satellite Image Compression Techniques”, Proceedings of National Conference on Computational Intelligence & Applications NCCIA'12, 9 & 10 Feb 2012.
- “Video surveillance using motion detection”, National conference on recent advances in electronics and communication engineering, Bengaluru, 3rd May 2013 NCRAECE 2013
- Murthy "Design and Implementation of Log Multiplier based on fusion of OD and Mitchell Algorithm", National Conference on recent Advances in Communication Networks, Bengaluru, 21-22nd march 2014
- “ECG Data Compression Methods for Telecardiology Application”, National Conference- KSHITIJ, May 12th 2015.
- “Hyperspectral Image Compression Based on Distributed Source Coding”, National Conference, KSHITIJ- 2015 at SJGIT, 30th April, Chickballapur.
- “Lossless Hyperspectral Image Compression Using Two-Stage Prediction”, National Conference on Recent Advance in Communication Networks, NCRACN'14.

Papers Presented /Books Published

International Journals

- “A Neuro-Wavelet model using Fuzzy vector Quantization for efficient Image Compression”, International Journal of Image and Graphics (IJIG), World scientific publishing company, vol 9, no 2, 2009, pp 299-320 available on line <http://www.worldscinet.com/ijig/09/0902/S0219467809003447.html>
- “Development of Image Compression algorithm using Wavelet feature and a Neuro-Fuzzy Model” International Journal of Systemics, Cybernetics and Informatics (IJSCI).
- “Recent Patents on Image Compression – A Survey” International Journal on Recent Patents on Signal Processing vol 2 pp 47-62 2010. available on line <http://www.bentham.org/open/rptsp/openaccess2.htm>

- “An Algorithmic Approach for Efficient Image Compression using Neuro-Wavelet Model and Fuzzy Vector Quantization Technique”, International Journal on Computer Science and Engineering (IJCSE) Vol. 02, No. 07, 2010, pp 2366-2374.
- “Digital Watermarking: A Tutorial”, Cyber Journals: Multi disciplinary Journals in Science and Technology, Journal of Selected Areas in Telecommunications (JSAT), January Edition, 2011 pp 11-21.
- “Patents on Image/video Compression”, Recent Patents on Signal Processing, pp 101-115, vol 1, 2011.
- “Low-Complexity and High-Quality Image Compression Algorithm for Onboard Satellite”, International Journal of Computer Applications (IJCA) June 2012.
- “Automatic Diagnostic System for Long-term ECG Data from Holter Monitor” International Journal of Computer Applications (IJCA) June 2012.
- “Automatic Detection of Diabetic Retinopathy in Non-dilated RGB Retinal Fundus Images”, International Journal of Computer Applications (IJCA) June 2012.
- “A Survey Paper on ECG Data Compression techniques and Proposing a New Method to achieve a Low PRD Value”, *International Journal of Advanced Computer Research (ISSN 2277-7970)*, Dec 2012
- “A survey on Hyperspectral Image Compression Techniques”, International Journal of Engineering and Technology IJERT 2013 pp 187-193.
- “Kirchhoff and FK migration to focus Ground Penetrating Radar Images”, International journal of Geo Engineering, 2016 7:4 DOI 10.1186/s40703-016-0019-6 available on line <http://link.springer.com/article/10.1186/s40703-016-0019-6> [Springer Singapore](http://www.springer.com), H index 7 issn 20929196, 21982783 Q2
- “Effect of Ground Undulation and Variation in velocity of vehicle on Migration of SFCW GPR data for landmine detection”, Exploration Geophysics Journal (CSIRO), Vol. 49, No. 1, pp. 81-88, 2018, <http://www.publish.csiro.au/eg#OnlineEarly> IF 0.758
- “Significance of pre-processing and its impact on lossless hyperspectral image compression”, The Imaging Science Journal, May 2017 <http://dx.doi.org/10.1080/13682199.2017.1329791>
- “Analysis of lossy to near-lossless compression of hyperspectral imagery using prediction and multistage vector quantisation”, The Imaging Science Journal, April 2017. <http://dx.doi.org/10.1080/13682199.2017.1312770> IF 1.023
- “*Decluttering using wavelet based higher order statistics and target detection of GPR images*”, *Sensing and Imaging*, Vol. 20:2, pp 1-21 [Springer Science and Business Media Deutschland GmbH](http://www.springer.com), H index 18 , issn 15572064, Q2
- “Target detection using supervised machine learning algorithms for GPR data” , *Sensing and Imaging*, Vol, 21 (1), pp 1-15,2020 [Springer Science and Business Media Deutschland GmbH](http://www.springer.com), H index 18 , issn 15572064, Q2
- “U-Net Model-Based Classification and Description of Brain Tumor in MRI Images”, International Journal of Image and Graphics, 2021 [World Scientific Publishing Co. Pvt Ltd](http://www.worldscientific.com) h index 20 issn 02194678, 17936756 Q4
- “Extraction of Tumor in Brain MRI using Support Vector Machine and Performance Evaluation”, VTU journal of engineering sciences and management 2019, 1(3) pp 1-8
- “Compression of MRI brain images based on automatic extraction of tumor region”, International Journal of Electrical and Computer Engineering, Accepted for publication, (Q2)

National Journals

- “A Neuro-Wavelet model using Vector Quantization for Image Compression”, Computer Society of India vol 38, Jan-March 2008 pages 10-19.
- “Design of a Neuro-Fuzzy Model for Image Compression in Wavelet domain”, published by Journal of Indian Society of Remote Sensing (ISRS), Volume 37 No 2 June 2009 pp 185-199

Books Published

- “Development of Image Compression Algorithms using soft computing approaches”, Lambert Academic publishing Germany 2011
- “Digital Image Processing with matlab and LabView” Phillip Learning, Elsevier India Pvt Ltd

Additional Information (if any)

Patents Published:

- “Atm cash withdrawal with smart phone based authentication”, application no : 2020410425-68 A, date of filing : 30/09/2020, Publication date : 09/10/2020.
- “Safe on-off switch circuit for power tools”, application no : 202041043605, date of filing : 07/10/2020, Publication date : 16/10/2020

- 'load balancing delivery box for motorcycles' application no : 202111029733 Date of filing 2 July 2021

Academic Achievements:

- Topped in the university in MTech Electronics.
- Received National Scholarships from GOVT. OF INDIA from 5th to 12 th std.
- Received State Merit Scholarship from GOVT. of Himachal Pradesh from 5th to 12th std.
- Awarded with Bronze Medal by Govt. of Himachal Pradesh for securing 3rd position in state in 10+2.

Other Achievements

- Received funding of Rs 10 Lakh from LRDE under CARS scheme in the year 2014.
- Received a funding of Rs. 20,17,000 from AICTE under Research promotion scheme (RPS) in the year 2013.
- Received a funding of Rs 4,00,000 and Rs 2,00,000 from AICTE for conducting Faculty development program and National conference.
- Organized an international conference CCUBE2013 and CCUBE2017 in association with IEEE Bangalore section