

Faculty Profile

Brief Profile (Few Paragraphs)

Faculty Photo

Personal Information

- **Name:** B. Roja Reddy
- **Designation:** Associate Professor
- **Department:** Electronics and Telecommunication Engineering]
- **Email:** rojareddyb@rvce.edu.in
- **Phone:** +919886390275

Google Scholar / ResearchGate / LinkedIn: [Link if applicable]/ **ORCID:** [Link]

https://scholar.google.com/citations?hl=en&user=ZHBluD4AAAAJ&view_op=list_works&sortby=pubdate

<https://www.linkedin.com/in/roja-reddy-085bb2106/>

<https://orcid.org/0000-0003-0748-9753>

Domain of Expertise

Research Focus

- **Primary Area:** MIMO Radar Signal Processing, Synthetic aperture Radar based classifications using AI.
- **Allied Areas:**
 - Autonomous Vehicles sensor fusion algorithms, Object tracking algorithms

Academic Qualifications

- **Ph.D.:** [Electrical Engineering], [Visvesvaraya Technological University], [2016]
- **M.Tech:** [Electronics], [Visvesvaraya Technological University], [2004]
- **B.E.:** [Electronics and Communication Engineering], [Gulbarga University] [1998]

Professional Experience

Experience

S.No	Institute/College/Industry	Job Title	Duration (From- To)
1.	Atria Institute of Technology	Lecturer	2004 to 2007
2.	R V College of Engineering	Associate Professor	2007 to till date

Publications & Patents

Journal Publications

1. Rachana P Rao, B Roja Reddy, M Ultra Kumari, "PDE BASED PHYSICS GUIDED NEURAL NETWORK FOR SAR IMAGE in IEEE Access, PP> 12682 - 12691 DOI:10.1109/ACCESS.2025.3531208, 17 January 2025.
2. Meghana S. and Dr. B. Roja Reddy., "Implementation of ANFIS Algorithm for Efficient Spectrum Hand-offs in Cognitive Radio Network", International Journal of Electrical Engineering and Technology (IJEET), Vol. 11, (4), pp. 30-44, June 2020,
3. Sharada N S, Dr. B. Roja Reddy., "Design and Optimization of Orthogonal Polyphase waveform using Artificial Bee Colony algorithm", International Journal of Advanced Research Engineering and Technology, (IJARET), vol 11, issue 7, pp. 11-18 July 2020.
4. Pooja Dayananda. K and Dr. B. Roja Reddy, "Analysis of Uplink Detection Methods for MIMO Systems", International Research Journal of Engineering and Technology (IRJET), vol. 7, (6), pp. 1653-1661, June 2020.
5. Ankita Khandre, Dr. B. Roja Reddy and Pratik Mewada "Design and analysis of Compact MIMO Antenna with Enhanced Isolation Techniques for Wireless LAN applications", International Research Journal of Engineering and Technology (IRJET), vol. 7, (5), pp. 8035-8041, May 2020.
6. Khanure, D., Roja Reddy, B.R., " Automation of switching in COADM using machine learning algorithm" International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8, Issue-12, October, 2019.
7. Anjali L Kathare and Dr B Roja Reddy, "A Design of Fuzzy Logic based Routing Algorithm for Lifetime Enhancement of WSN network" in A Journal of Composition Theory, Volume XII Issue VI, pp No. 57-61, JUNE 2019.
8. B. Roja Reddy, M Uttarakumari, "Optimization of orthogonal adaptive waveform design in presence of compound Gaussian clutter for MIMO radar" in Springer Plus 2016, Open access.
9. M Jayant, B. Roja Reddy, "Speak identification based on GFCC using GMM-UBM", International Journal of Engineering Science Invention, Vol 5, Issue 5, PP. NO. 62-65, May 2016.
10. Likhith Kumar .T.R, Manoj Thomas, Roja Reddy B, "Virtualized Tool for Service Performance Validation of Middleware Components Used In Telco Network Elements", International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, vol 4, issue 4, 2015.
11. Sooraj R Shanbhag, Dr. H V Kumarswamy, B. Roja Reddy, "Analysis of Multiple Target Detectors-Review" International Journal of Emerging Trends in Engineering and Development, Issue 4, Vol.4 , pp. No.92-99, 2014.
12. Raturaj P Inchal, Dr. H V Kumarswamy, B. Roja Reddy, "MIMO Radar Waveform Comparison Using Ambiguity Function" in International Journal of

Electronics, Communication & Instrumentation Engineering Research and Development (IJEIERD) Vol. 4, Issue 3, Jun 2014, pp no.157-165.

13. B.Roja Reddy, M. Uttara Kumari, "Orthogonal MIMO Radar Waveform Performance Analysis with Ambiguity Function" in International Journal of Engineering and Advanced Technology (IJEAT), Volume-3, Issue-4, April 2014, pp no. 168-173.
14. B.Roja Reddy, M. Uttara Kumari, "MIMO Radar Detection in Compound Gaussian Clutter using Orthogonal Discrete Frequency Coding Space Time Waveform" in the International Journal of Multimedia & Its Applications (IJMA) Vol.6, No.4, August 2014, pp no. 39-47.
15. B.Roja Reddy, M. Uttara Kumari, "Target Detection Using Orthogonal Polyphase MIMO Radar Waveform against Compound Gaussian Clutter", Elsevier Procedia Engineering Journal, vol. 64, pp. no.331-340, 2013.
16. B.Roja Reddy, M. Uttara Kumari, "Performance Analysis of MIMO Radar waveform using accelerated particle swarm optimization algorithm" in Signal & Image Processing: An International Journal (SIPIJ) Vol.3, No.4, August 2012.
17. Avidhan Shetty C S, B. Roja Reddy, "Moving Target Estimation in Non-Homogeneous Clutter for MIMO Radar" in International Journal of Engineering Research and Development Volume 3, Issue 9 (September 2012), PP. 30-37.

Conference Papers

1. Prajwal R, Pranav Sharma N, Tejasvi P C, T. P. Mithun and B Roja Reddy, "Implementation of Radar-camera fusion for Efficient Object Detection and Distance Estimation in Autonomous Vehicles" in International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (ICIITCEE 2025) is organized and hosted by BNM Institute of Technology, Bengaluru, India on 16 and 17 January 2025.
2. M Santhosh Kumar, Sreelakshmi k, Roja Reddy B," Conditional Gaussian Models for Channel Estimation in Quantized Environments:, IEEE ARIIA 2024 in st International Conference on Augmented Reality, Intelligent Systems, and Industrial Automation" from 20-21 December 2024, organized bt Manipal Institute of Technology, Manipal, Karnataka, India.
3. Vaishnavi S, Roja Reddy B, "Implementation of Machine Learning Algorithms to Detect DoS Attack in WSN", IEEE 2024 5th International Conference on Circuits, Control, Communication and Computing (I4C), 4-5 October 2024.
4. Sai Shrushti S, H V Kumaraswamy, M Uttara kumari, B Roja Reddy, Tunna Baitha, "Implementation of Object Detection for Autonomous Vehicles by LiDAR and Camera Fusion". Communicated to IEEE Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI), 14-16 March 2024.
5. B. Roja Reddy, M Uttara kumari, Tunna Baitha, Akshitha S, Anjali M. "Implementation of Lane Detection Algorithms for Autonomous Vehicle using Lidar Point Cloud Data" in 7th International Conference on Computational Systems and Information Technology for Sustainable Solutions, 2nd - 4th November 2023, Benagluru, 2023.
6. Rachana P Rao;Risha Ram;B. Roja Reddy," Implementation and Analysis of Various Kalman Filtering Techniques for Target Tracking", 2023 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), 2003.
7. B. Roja Reddy, M Uttarakumari, Sai Shrushti S, Maria Bency, Shreya D,Kaveri Patil, Priyanka Holla, "Machine Learning based VoalNet and LUNet architecture for object detection using Lidar Cloud Points" in the Maiden Edition of IEEE Delhi Section International Conference on Electrical, Electronics and Computer Engineering - IEEE DELCON-2022 ,during 11th -13th February 2022.
8. B. Roja Reddy, B. Hema Priya, "Machine Learning based U – Net Algorithm for SAR Image

Classification” in the Maiden Edition of IEEE Delhi Section International Conference on Electrical, Electronics and Computer Engineering - IEEE DELCON-2022 ,during 11th -13th February 2022.

9. Poornima, B. Roja Reddy, “Design and Simulation of Two-Chain Monopulse Receiver for IIF Radar Application”, in 3rd IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology, Vol 2, PP 1114-1118, May 2018.
10. Meghana M N, Dr. B. Roja Reddy and B.Krishnam Prasad, “Comparative Analysis of Channel Coding Using BPSK Modulation ,” 2nd IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT-2017), ISBN: 978-1-5090-3704-9, held on May 21, 2017 at Sri Venkateshwara College of Engineering , Bengaluru,2017.
11. Sandhyalakshmi, Veena S, B. Roja Reddy, “Development of Continuous Automatic Speech Recognition System for Controlling of MAVs Through Natural Speech”, in International Conference on Recent Advances in Electronics and Communication Technology(ICRAECT-2017) which will be held on 16th & 17th March 2017.
12. Sandhyalakshmi, Veena S, B. Roja Reddy, “A Review on Speech Feature Extraction Techniques” in National Conference on ICT and Society (WTISD-2017), 15-17 May 2017, held at RVCE, Bengaluru.
13. Sandhyalakshmi, Veena S, B. Roja Reddy, “ Development of Language Models for Voice Controlled Micro Air Vehicle (MAV)” is accepted for pre”senting in International Conference on Signal, Image Processing, Communication & Automation (ICSIPCA-2017), 6th and 7th July 2017 to be held in JSSCE, Bengaluru.
14. Sahana Murthy, Jayanta Kurumathur, Roja Reddy B “Design and Implementation of Paper Currency Recognition with Counterfeit Detection” in IEEE Sponsored 3rd International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS- held on 17th and 18th March, 2016 organised by the Department of Electronics and Communication Engineering, Karpagam College of Engineering, Coimbatore, Tamil Nadu, India.
15. Raghavendra Patil, Manjunath R K, Roja Reddy B, Nagababu Maniakala, Karthik K S , “ Impact of Ground Plane on Capacitive Fed Patch Antenna for Wideband Application”, in IEEE Sponsored 3rd International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS-16) held on 17th and 18th March, 2016 organized by the Department of Electronics and Communication Engineering, Karpagam College of Engineering, Coimbatore, Tamil Nadu, India.
16. Bhavana Potturi, B. Roja Reddy, “Design of Array feeding power chopper for Space borne SAR payloads”, in National Conference on Information and Communication Technologies, May 16-18 2016, Bangalore.
17. Poornima, B. Roja Reddy,” Design and Simulation of Two-Chain Monopulse Receiver for IIF Radar Application”, in 3rd IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology, Vol 2, PP 1114-1118, May 2018.
18. Meghana M N, Dr. B. Roja Reddy and B.Krishnam Prasad, "Comparative Analysis of Channel Coding Using BPSK Modulation ,” 2nd IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT-2017), ISBN: 978-1-5090-3704-9, held on May 21, 2017 at Sri Venkateshwara College of Engineering , Bengaluru,2017.
19. Yathindra S, “TR-069 CPE WAN Management Protocol”, International Conference on networks information and communications, SVCE, Bangalore, 2015.
20. Sameera P, B. Roja Reddy, “Detection of point target in passive MIMO radar network”, National Conference on 'Research Challenges in Power, Control, Communication and Instrumentation Leading to Sustainable Technologies [NCPCCI-15], R V College of Engineering, May 2015.
21. B.Roja Reddy, M. Uttara Kumari, “orthogonal Discrete Frequency Coding Frequency Coding Space Time Waveform for MIMO Radar Detection in Compound Gaussian Clutter” in

- third International Conference on Signal, Image Processing and Pattern Recognition-2014, Chennai, July 26-27, pp no. 59-66, 2014.
22. B.Roja Reddy, M. Uttara Kumari, "Optimization of Discrete Frequency Coding Waveform for MIMO Radar using Modified Ant Colony Optimization Algorithm" in IEEE International Conference on Networks & soft Computing, 19-20 Aug, 2014. Guntur. PP No 15-19.
 23. B.Roja Reddy, M. Uttara Kumari, "Design of orthogonal waveform for MIMO radar using Modified Ant Colony Optimization Algorithm" in International Conference on Advances in Computing, Communications and Informatics (ICACCI), PP No. 2554 – 2559, 2014.
 24. B.Roja Reddy, M. Uttara Kumari, "Target Detection Using Orthogonal Polyphase MIMO Radar Waveform against Compound Gaussian Clutter" in International Conference Design & manufacturing (ICONDM2013) in Chennai 18-20 July 2013.
 25. Avinash Puranik, B.Roja Reddy, "Case Study of Elegant Termination for Maintenance of Base Station" in SJBIT National Conference Recent trends in electronics and communication Engineering on 4/05/2013.
 26. Ravi Gatti, B. Roja Reddy, "Study of Track Before Detect algorithm for multiple target detection" at International Conference on Recent Trends in Computer Science and Engineering(ICRTCS-2013).
 27. Vijaylaxmi, B.Roja Reddy, "Optimization of multisite MIMO Radar System for target detection" in BMS National Conference" in BMS College of Engineering,2013.
 28. B.Roja Reddy, M. Uttara Kumari, "Polyphase orthogonal Wave Form using Modified particle swarm optimization algorithm for MIMO Radar", "IEEE International Conference on Signal Processing Computing and Control at WAKNAGHAT-SHIMLA from March 15-17th -2012.
 29. B.Roja Reddy, M. Uttara Kumari, "Generation of Orthogonal Discrete Frequency coded wave form using Accelerated Particle Swarm Optimization Algorithm for MIMO-Radar", International Conference on Signal, Image Processing and Pattern Recognition-2012 at at New Delhi. Springer Conference(SPPR-2012), from 25-27th May-2012.
 30. B.Roja Reddy, Pradeep G. B, "GLRT Design of MIMO Radar in Spherically invariant vector Clutter " in International Conference on Computer Science & Information Technology-CSIT-2012, conducted by IRNet-bangalore on 19 May 2012.
 31. B.Roja Reddy, M. Uttara Kumari, "Polyphase orthogonal Wave Form using particle swarm optimization algorithm for MIMO Radar".in 4th IETE Conference on RF & Wireless (ICON-RFW-11) at RVCE, Bangalore, 14-16th –October-2011.
 32. B.Roja Reddy, M. Uttara Kumari , Aparna Girithar, Rahul Mattew, Aditya Srikant, "Optimization of orthogonal discrete frequency – coding waveform using ACO algorithm", International Radar Symposium India at Bangalore from 08-11 Dec 2009, pp No-250-254, Bangalore.

Books/Book Chapters

1. Viswavardhan Reddy K., B. Hemapriya, B. Roja Reddy, Premananda B. S, Performance evaluation of ML Algorithms for disease prediction using DWT and EMD techniques,Bentham Science Book: Computational intelligence and Machine Learning approaches in Biomedical Engineering and Health Care Systems, 2022.

Patents **[Filed / Published / Granted]. NA**

1. [Patent Title], [Patent No.], [Year].

R & Grants & Consultancy Projects

Ongoing & Completed Research Projects - NA

- **[Project Title]** – Funding Agency: [Name], Duration: [Year-Year], Role: [PI/Co-PI].
- **[Project Title]** – Funding Agency: [Name], Duration: [Year-Year], Role: [PI/Co-PI].

Ongoing & Completed Consultancy Projects

- **MODERNISATION & REMOVAL OF OBSOLESCENCE** - Wireless Communication Laboratory – Agency: AICTE, Duration: 16th Feb 2022-2024, Role: Co-PI-2.

Professional Memberships [Life member – LM]

- **IEEE Senior Member** **Membership No:** 94817651 -Annual
- **IETE Fellow Member** **Membership No:** 112897230094 - LM
- **ISTE Member No:** **Membership No:** LM 100039 - LM

Awards & Recognitions

- [Appreciation letter received, felicitated from RSST Trust for publishing papers International conferences in 2009.
- Appreciation letter received, felicitated from RSST Trust for the award of the PhD Degree in Jan, 2017.

• Student Supervision

- **Ph.D. Candidates:** 01
- **M.Tech/M.Sc. Students:** 40
- **Undergraduate Research Mentees:** 24

Professional Roles

- **Editorial Board:** [International Journal of Satellite-Based Communication and Wireless Networks System](#),

Teaching

Core Courses: [Current semester]

- Radar Systems
- Microcontroller and Programming

- Network Analysis

Advanced/Lab Courses:

- Radar System Lab
- Microcontroller and Programming lab
- AI & ML programming lab [M.Tech]

Professional Roles

Responsibilities

- **Academic:** BOE Coordinator
- **Administrative:** Lab In-charge

External Connect

- Member of BoE