

Dr. Rajani S. Pujar

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Curriculum Vitae

Qualification	Ph.D. Visvesvaraya Technological University, Belgaum Department: Electronics & Communication Engineering Year: 2020
	M. Tech. (Digital Communications) Basaveshwar Engineering College, Bagalkot Visvesvaraya Technological University, Belgaum Year: 2006
	B. E. (Electronics and Communication Engineering) Basaveshwar Engineering College, Bagalkot Karnataka University, Dharwad Year: 2001
Ph.D. Thesis Title	Effect of Noise Reduction Algorithms in Improving Speech Perception for Monaural and Binaural Hearing Aids
M. Tech. Project Title	Agent based service discovery and negotiation in virtual organizations
B.E. Project Title	Simulation and graphical representation of CPU scheduling algorithms
Areas of Interest	Speech Processing, Error Control Codes, Optical Fiber Communication, Internet of Things, Wireless Networks

Academic Data:

Exam Passed	University/ Board	Year	Branch/Specialization
Ph.D.	Visvesvaraya Technological University, Belgaum	DEC-2020	Research Title: Effect of Noise Reduction Algorithms in Improving Speech Perception for Monaural and Binaural Hearing Aids
M. Tech.	Visvesvaraya Technological University, Belgaum	OCT-2006	Digital Communications
B. E.	Karnataka University, Dharwad	OCT-2001	Electronics & Communication Engineering
P.U.C.	Department of Pre-University Education, Karnataka	JUN-1996	-----
S.S.L.C.	Karnataka Secondary Education Examination Board	APR-1994	-----

Ph.D. Students:

Ongoing

- 1) Artificial Intelligence based Resource Management Techniques for Edge Computing – Mr. Shrishail Chamatagoudar, 2BA22PEC02 (AYoR: 2023-204)

Award:

- 1) Letter of Appreciation as "Engineer on par Excellence" on the occasion of Engineer's Day-2023 by Lions Club of Bagalkot on 24.09.2023

Patents:

- 1) Patent published, title "Preventing Center Median Accidents on Highways using nRF Module Communication between the Car and Medians", Application No. 202341029502 A, Publication Date: 26.05.2023
- 2) Patent published, title "Biometric based Vehicle Ignition System", Application No. 202341050242 A, Publication Date: 01.09.2023

Publications:

Book Chapters:

- 1) C. L. Chayalakshmi, Rajani S. Pujar, Mahabaleshwar S. Kakkasageri, "Machine Learning Fundamentals", Contributed chapter in book titled, "AI and Blockchain in Smart Grids: Fundamentals, Methods, and Applications", CRC press, 2024
- 2) C. L. Chayalakshmi, Mahabaleshwar S. Kakkasageri, Rajani S. Pujar, Nayana Hegde, "IoT

Sensors for Smart Automation: A Systematic Review”, Chapter 6, pp. 141-170, Contributed chapter in book titled, “AI and Blockchain Applications in Industrial Robotics”, Dr Rajashekhar C. Biradar, et. al., (Edts.), IGI Global publishers, 2023

Journals:

- 1) Ramesh B. Koti, Mahabaleshwar S. Kakkasageri, Rajani S. Pujar, “Artificial Neural Network Based Safety Information Dissemination in Vehicle to Internet”, *Journal of Electronics and Telecommunications Research Institute (ETRI)*, DOI: 10.4218/etrij.2022-0203
- 2) Rajani S. Pujar, “ Random Forest Algorithm based Security in IoT”, *International Journal of Research in Engineering and Science (IJRES)*, pp. 94-100, Vol. 11, No. 3, March 2023
- 3) Rajani S. Pujar, “Combined Effect of Adaptive Wiener Filter and Spectral Splitting of Speech Signal in Improving Speech Intelligibility for Hearing Impaired People”, *International Journal of Future Computer and Communication (IJFCC)*, pp. 61-66, Vol. 11, No. 3, September 2022
- 4) Rajani S. Pujar, P. N. Kulkarni, “Wiener Filter Based Noise Reduction Algorithm with Perceptual Post Filtering for Hearing Aids”, *International Journal of Image, Graphics and Signal Processing (IJIGSP)*, pp. 69-81, Vol. 11, No. 7, July 2019

International Conferences:

- 1) Rajani S. Pujar, Chayalakshmi C. L., Mahabaleshwar S. K., “Adaptive LMS Algorithm for Effective Noise Suppression”, *Proc. IEEE North Karnataka Subsection Flagship International Conference (NKCon - 2024)*, Bagalkote, India, 21 – 22 September 2024
- 2) Mamata J. Sataraddi, Rajani S. Pujar, Mahabaleshwar S. Kakkasageri, “A Data Integrity Framework for IoT Leveraging the Blowfish Encryption Algorithm”, *Proc. IEEE North Karnataka Subsection Flagship International Conference (NKCon - 2024)*, Bagalkote, India, 21 – 22 September 2024
- 3) Preetam Kanal, Akshata Dhagade, Bhagyashree Belagali, Darini Budihal, Rajani S. Pujar, “Integrating Block Chain in EV Charging Systems for Secure and Efficient Infrastructure”, *Proc. International Conference on Sustainable Solutions in Engineering and Technology (SSET-2024)*, Bagalkote, India, 29 – 30 August 2024
- 4) Shrishail N. Chamatagoudar, Rajani S. Pujar, Mahabaleshwar S. Kakkasageri, Chayalakshmi C. L., “A Comprehensive Review of Resource Management Techniques in Edge Computing”, *Proc. International Conference on Sustainable Solutions in Engineering and Technology (SSET-2024)*, Bagalkote, India, 29 – 30 August 2024
- 5) Piyusha Shetgar, Chayalakshmi C.L., Mahabaleshwar S. Kakkasageri, Rajani Pujar, “Data Management in Edge Computing: Opportunities and Challenges”, *Proc. International Conference on Sustainable Solutions in Engineering and Technology (SSET-2024)*, Bagalkote, India, 29 – 30 August 2024
- 6) Sadashiv Badiger, Chayalakshmi C. L., Mahabaleshwar S. Kakkasageri, Rajani S. Pujar, “Edge Computing based Smart Health Care System”, *Proc. International Conference on Sustainable Solutions in Engineering and Technology (SSET-2024)*, Bagalkote, India, 29 – 30 August 2024
- 7) Gururaj S. Kori, Mahabaleshwar Kakkasageri, Vijaykumar Hiremath, Poornima M Chanal, Rajani S Pujar, “Cognitive Swarm Drones Attack Model: A Grey Wolf Optimization Approach”, *Proc. IEEE International conference on Electronics, Computing and Communication Technologies (CONECCT-2024)*, Indian Institute of Science, Bengaluru, India, 12 – 14 July 2024
- 8) Rajani S Pujar, Chayalakshmi C. L., Mahabaleshwar Kakkasageri, “Machine Learning based Dynamic Resource Allocation in 6G Networks”, *Proc. IEEE International Conference for Intelligent Technologies (CONIT-2024)*, Hubballi, India, 21 – 23 June 2024
- 9) Rajani S. Pujar, P. N. Kulkarni, “Speech Intelligibility Improvement based on Noise Reduction and Frequency Compression Technique”, *Proc. 18th IEEE India Council International Conference (INDICON 2021)*, Indian Institute of Technology, Guwahati, India, 19 – 21 December 2021

- 10) Rajani S. Pujar, P. N. Kulkarni, "Cascaded Structure of Noise Reduction and Multiband Frequency Compression of Speech Signal to improve Speech Perception of Monaural Hearing Aids", *Proc. 16th IEEE India Council International Conference (INDICON 2019)*, Marwadi University, Rajkot, Gujarat, 13 – 15 December 2019
- 11) Rajani S. Pujar, P. N. Kulkarni, "Cascaded Structure of Wiener Filter with FBS Based Spectral Splitting and Dynamic Range Compression for Listeners with Sensorineural Hearing Loss", *Proc. 15th IEEE India Council International Conference (INDICON 2018)*, Amrita Vishwa Vidyapeetham, Coimbatore, 16 - 18 December 2018
- 12) Rajani S. Pujar, P. N. Kulkarni, "Effect of Noise Reduction Algorithms on Temporal Splitting of Speech Signal to Improve Speech Perception for Binaural Hearing Aids", *Proc. 13th Western Pacific Conference on Acoustics (WESPAC-2018)*, CSIR-NPL, New Delhi, 11 – 15 November 2018
- 13) Rajani S. Pujar, P. N. Kulkarni, "Frequency Compression of Speech for Improving Speech Perception in Sensorineural Hearing loss: FBS Approach", *Proc. International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET 2017)*, 22 – 24 March 2017, SSN College of Engineering, Chennai, India
- 14) S. S. Manvi, G. K. Chandrayya, J. D. Mallapur, Rajani S. Pujar, "A multimedia synchronization scheme for mobile wireless networks", *Proc. National Conference on Emerging trends in Electronics and Communication Engg.*, pp. 01 - 04, Padre Conceição College of Engineering, Verna, Goa, 14 - 15 Sept. 2006
- 15) Rajani S. Pujar, S. S. Manvi, "An agent-based web services in virtual organizations", *Proc. National Conference on Emerging trends in Electronics and Communication Engg.*, pp. 274 - 278, Padre Conceição College of Engineering, Verna, Goa, 14 - 15 Sept. 2006
- 16) Rajani S. Pujar, S. S. Manvi, "Multi-agent system based online shopping model for virtual organization", *Proc. World Science Congress Conference*, Los Veagas, USA, pp. 132 - 138, June 2007

In Progress/Under Review:

- 1) Gururaj S Kori, Mahabaleshwar S Kakkasageri, Poornima M. Chanal, Rajani S. Pujar, Vinayak A. Telsang, "Wireless Sensor Networks and Machine Learning Centric Resource Management Schemes: A Survey", *Ad Hoc Networks*, Elsevier (Under Review)
- 2) Mamata J. Sataraddi, Mahabaleshwar S. Kakkasageri, Ajay Bandi, Rajani S. Pujar, "Multi-agent Approach for Vehicle-to-Infrastructure Routing in VANETs: A Machine Learning Framework" *Wireless Personal Communications*, Springer (Submitted)
- 3) Poornima M. Chanal, Mahabaleshwar S. Kakkasageri, Rajani S. Pujar "Cognitive Agent based Context Aware Authentication Scheme for IoT Devices: Regression Approach", *Wireless Personal Communications*, Springer (Submitted)

Academics:

Subjects taught at Postgraduate Level

Optical Networks, Cryptography and Network Security, Error Control Codes

Subjects taught at Undergraduate Level

Optical Fiber Communication, Information Theory and Coding, Wireless Networks, Digital Communication, Electrical Circuits, Operating Systems

Projects Guided at PG Level - 05

Projects Guided at UG Level – 35

Online Courses Completed:

- 1) AICTE-AQIS Sponsored STTP on “Enabling wireless Technology: Software Defined Radio Applications on SISO Packet based Communication”, November 23-28, 2020
- 2) AICTE Training And Learning (ATAL) Academy, “Internet of Things (IoT)”, October 29 – November 2, 2020
- 3) AICTE Training And Learning (ATAL) Academy, “Cyber Security”, October 19-23, 2020
- 4) AICTE approved FDP course on “Introduction to Internet of Things (SWAYAM)” conducted by Sudip Misra, IIT Kharagpur, 14 September 2020 - 04 December 2020
- 5) FDP on “Research Aspects in Modern Analytics and Cyber Security” Conducted by Jaypee Institute of Information Technology, Noida, July 20-24, 2020
- 6) FDP on “Six Sigma”, July 6 – 10, 2020, BEC Bagalkot
- 7) AICTE Training And Learning (ATAL) Academy, “Block Chain”, June 22- 26, 2020
- 8) Virtual FDP on “Neural Networks and Deep Learning using Python”, organized by REVA University, Bangalore, June 1-5, 2020
- 9) International FDP on “Innovative Trends in Engineering and Technology, organized by SLRT College of Engineering Thane, Mumbai, May 25-29, 2020
- 10) Online FDP on “Research, Funding Projects and IPR”, organized by K. C. College of Engineering and Management Studies and Research, Thane, Mumbai, May 7-10, 2020
- 11) FDP on “Digital Transformation in Teaching Learning Process” (SWAYAM) conducted by IIT Mumbai
- 12) AICTE approved FDP course on “Computer Networks and Internet Protocol (SWAYAM)” conducted by Prof. Soumya Kanti Ghosh and Prof. Sandip Chakraborty, IIT Kharagpur, 27 January 2020 - 17 April 2020

Invited Talks:

- 1) Resource person for HRD training programme for First Year Engineering students, Basaveshwar Engineering College, Bagalkot, 16.09.2023 to 17.09.2023
- 2) Invited talk presented and handled lab session at Faculty Development Programme, “Computer Network Simulation (CNS-08)”, Basaveshwar Engineering College, Bagalkot – 587102, February 21 - 23, 2008
- 3) Invited talk presented and handled lab sessions at Short Term Training Programme, “Internet Protocols”, Basaveshwar Engineering College, Bagalkot - 587102 on “Communication Networks; Overview”, August 21 - 26, 2006
- 4) Invited talks presented at Short Term Training Programme on “Data Communication and Networks”, B.V.V.S. Polytechnic, Bagalkot-587101, January 2 – 6, 2006

Events Organized:

- 1) Coordinator for Skilling Program on “Drone Technology”, 24 – 26 May 2024, Basaveshwar Engineering College, Bagalkot-587102
- 2) Coordinator for one day workshop on “Stress, Diet, and Disease Management” on 27.09.2023, Basaveshwar Engineering College, Bagalkot-587102
- 3) Coordinator for “AVISHKAAR” (Project Exhibition) organized by BEC AICTE-IDEA Lab on 26.09.2023
- 4) Coordinator for “Open Day for Class XI-XII Students”, AICTE Idea Development, Evaluation & Application (IDEA) Laboratory, Basaveshwar Engineering College, Bagalkot-587102, 08/10/2022
- 5) Coordinator for Skilling Programme on “Embedded Systems and Robotics”, Basaveshwar Engineering College, Bagalkot-587102, 19th – 24th September 2022
- 6) Coordinator for a workshop on “Importance of Basic Life Support Techniques” at BEC, Bagalkot

on 9/5/ 2022

- 7) Coordinator for technical seminar on “Applications of Intelligent Transport System (ITS)” under ACME at BEC, Bagalkot on 2/12/2021
- 8) Organized talk on “COVID-19 Disease in children –What Parents Need to Know?” by Dr. Raghavendra Vanaki, Professor, Department of Pediatrics, S. N. Medical College & Hospital, Bagalkot On 24/05/2021
- 9) Organized talks on “Women Empowerment – Lessons Learnt from Kerala” by Dr. Leyanna S. George, Amruta Institute of Medical Science, Cochin, Kerala and “Women Autonomy in Health Care Decision Making” by Dr. Ayesha S. Nawaz, Piramal Swasthya Management and Research, Hyderabad were organized on 12.12.2020 under Equity Action Plan of TEQIP-III
- 10) Coordinator for TEQIP-III Sponsored EAP on “Attitudinal Change and Team Building” and “Interview Techniques and Mock Interview” at BEC, Bagalkot on 5th April 2019 by Bhuvaneshwari I. Shurpali, freelance trainer, Pune

College assignments:

- 1) Member, Internal Quality Audit Cell (IQAC), Basaveshwar Engineering College, Bagalkot-587102 (2021 to 2023)
- 2) Member, AICTE Idea Development, Evaluation & Application (IDEA) Laboratory, Basaveshwar Engineering College, Bagalkot-587102 (2021 to till date)
- 3) B.O.E., Coordinator ECE Department Basaveshwar Engineering College, Bagalkot. (2020 to till date).
- 4) B. O. S. Member of E & C Engg. Department, Basaveshwar Engineering College, Bagalkot- 587102 (2022 to till date)

Conferences/ Symposiums/ Workshops/ Training Programs Attended:

- 1) Attended Three Days Workshop on “Strategic Planning”, Basaveshwar Engineering College, Bagalkot, 23 – 25, January 2024
- 2) Attended Two Days Workshop on “Outcome Based Education (OBE)”, Basaveshwar Engineering College, Bagalkot, 30th September – 01st October 2023
- 3) Attended Two Days Workshop on “Outcome Based Education (OBE)”, Basaveshwar Engineering College, Bagalkot, 01-02, February 2023
- 4) AICTE approved FDP course on “Computer Networks and Internet Protocol (SWAYAM)” conducted by Prof. Soumya Kanti Ghosh and Prof. Sandip Chakraborty, IIT Kharagpur, 27th January 2020 – 17th April 2020
- 5) AICTE approved online FDP course on “Introduction to Internet of Things (SWAYAM)” conducted by Sudip Misra, IIT Kharagpur, 14th September 2020 – 04th December 2020
- 6) AICTE Training and Learning (ATAL) FDP on “Cyber Security” organized by National Institute of Technology, Nagaland, October 19-23, 2020
- 7) Online FDP on “Research Aspects in Modern Analytics and Cyber Security” Conducted by Jaypee Institute of Information Technology, Noida, July 20-24, 2020
- 8) Online FDP on “Six Sigma”, BEC Bagalkot, 6 - 10 July 2020
- 9) E – Workshop on “Awareness and Prevention of Sexual Harassment at Workplaces”, organized by BEC, Bagalkot, June 27, 2020
- 10) AICTE Training and Learning (ATAL) FDP on, “Block Chain”, organized by National Institute of Technology, Nagaland, June 22- 26, 2020
- 11) Online Webinar series on “Recent Trends in Electronics and Communication Engineering” BEC, Bagalkot, June 11-12, 2020
- 12) Virtual FDP on “Neural Networks and Deep Learning using Python”, organized by REVA University, Bangalore, June 1-5,2020

- 13) Online International FDP on “Innovative Trends in Engineering and Technology, organized by SLRT College of Engineering Thane, Mumbai, May 25-29, 2020
- 14) Online FDP on “Research, Funding Projects and IPR”, organized by K. C. College of Engineering and Management Studies and Research, Thane, Mumbai, May 7-10, 2020
- 15) FDP on “Digital Transformation in Teaching Learning Process” (SWAYAM) conducted by IIT Mumbai, April 6-22, 2020
- 16) Workshop on “AICTE Examination Reform Policy”, BEC Bagalkot, February 14-15, 2020
- 17) NPTEL Workshop, BEC Bagalkot, November 29, 2019
- 18) Workshop on “Sensor Networks”, BEC Bagalkot, January 08-09, 2018
- 19) International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET 2017), at SSN College of Engineering, Chennai, India, March 22-24, 2017
- 20) Faculty Development Programme on “Recent Advances in Signal Processing and Communication Networks”, at Basaveshwar Engineering College, Bagalkot, 17th – 19th March, 2017
- 21) International symposium on “Green Technologies for Sustainable Development”, BEC Bagalkot, January 24-25, 2017
- 22) One day workshop on “Research Methodology” organized by Basaveshwar Engineering College, Bagalkot on 19/12/2015
- 23) One day workshop on “Outcome Based Education” organized by Basaveshwar Engineering College, Bagalkot on 18/12/2015
- 24) Workshop on Image and Speech Processing, at Indian Institute of Technology, Guwahati, December 13-14, 2013
- 25) Workshop on “Quality Enhancement in Engineering Education (QEEE) at Indian Institute of Technology, Chennai, December 6-7, 2013
- 26) FDP on “Soft Computing and Evolutionary Techniques” May 30 – June 1, 2013, BEC Bagalkot
- 27) Three days faculty development programme on “Computer Network Simulation (CNS-08)”, at Basaveshwar Engineering College, Bagalkot, February 21-23, 2008
- 28) Faculty development programme on “Real Time Operating System”, at Basaveshwar Engineering College, Bagalkot, Mar 26-31, 2007
- 29) Faculty development programme on “Advanced Microcontroller”, at Basaveshwar Engineering College, Bagalkot, Feb 15-17, 2007
- 30) Faculty development programme on “Embedded Systems”, at Basaveshwar Engineering College, Bagalkot, Feb 05-10, 2007
- 31) Faculty development programme on “Digital Signal Processor and its applications”, at Basaveshwar Engineering College, Bagalkot, Sep 25-30, 2006
- 32) State level post graduate technical symposium (PRAGATI-06), at B. V. Bhoomaraddi College of Engineering and Technology, Hubli, Sep 09, 2006
- 33) Short-term training programme on “Internet Protocols” at Basaveshwar Engineering College, Bagalkot, Aug 21-26, 2006
- 34) Faculty development programme on “C# & .NET”, at Basaveshwar Engineering College, Bagalkot, June 01-06, 2006
- 35) Short term course on “Instructional Design and Delivery”, at Basaveshwar Engineering College, Bagalkot – 587102, Aug. 08 -13, 2005
- 36) National level seminar on “Recent Trends in Computer Communications and Networking”, at Basaveshwar Engineering College, Bagalkot-587102, Mar. 15-16, 2005
- 37) Short Term Training Programme on “Semiconductor Physics and VLSI Design “, at Basaveshwar Engineering College, Bagalkot -587102, Feb. 07-19, 2005