



Dr. SUPRIYA OMPRAKASH RAJANKAR

Professor, Department of E & TC



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OVERVIEW:

Qualifications: Ph.D.(E&TC), ME (Electronics), BE (Ind. Electronics)
Experience: Teaching -31 years
Date of Joining STES: 01/07/1994
Memberships of Professional Societies: LMISTE, MIETE
Skills and Proficiencies: Python, Machine Learning, Deep Learning, MATLAB, C

SIGNIFICANT ACHIEVEMENTS:

- Published 6 articles in top-tier journals such as Springer Nature and Inderscience with Scopus as well as Web of Science indexing in the area of Signal and Image Processing.
- International conference on Pervasive Computing (ICPC 2020) as a Technical Chair (BCUD TEQIP funded)
- National Conference on Pervasive Computing (NCPC 2018) as a Coordinator (BCUD TEQIP funded)
- Assisted Mr. Soorya Dev member central research lab, SKN Medical College and General hospital for his research on a pilot study analyzing EEG signal.

AREA OF EXPERTISE /RESEARCH INTERESTS:

- Signal Processing, Image Processing, Artificial Intelligence, Machine Learning

NUMBER OF STUDENTS GUIDED:

- Ph D(pursuing) – 02; P.G. – 35+, U.G.- 60 +

RESEARCH PULICATIONS:

Publication Summary:

Scopus and SCI – 05
Scopus - 16
International Journals - 54
International Conference – 12
National Conference- 49
Book Chapters 02
Books- 04
H index - 08
i10 Index -05
Citations- 193

Google scholar id-

<https://scholar.google.co.in/citations?user=JxdOsF4AAAAJ&hl=en>

Orchid id - 0000-0002-0461-4195

FUNDED RESEARCH PROJECT:

BCUD, Pune funded research project, “Comparative Study of ECG Signal Compression Techniques”, completed during 2008-2010.

RESEARCH WORK:

Phd Research Work:

As ECG is a biomedical signal, the clinical information is paramount for diagnosis. Hence, the primary goal of ECG compression algorithm is to minimize the storage space and transmission time without losing clinically relevant information in the signal. To fulfill this goal following were the objectives of the research achieved.

1. Noise-Insensitive Signal Adaptive Thresholding: This innovative approach overcomes the limitations of existing noise-sensitive thresholding techniques. The False Discovery Rate-based threshold dynamically adjusts to different ECG signal characteristics, including noise levels, making it suitable for diverse clinical data. The threshold is determined from the inherent characteristics of the signal itself, reducing reliance on subjective or predetermined values. Signals with higher noise content resulted in stricter thresholds, leading to greater suppression of noise-related coefficients.
2. Implemented high-speed, low bit rate modified 1-D set partitioning in hierarchical tree (SPIHT) algorithm and memory efficient listless 1-D SPIHT algorithms called as modified SPIHT (mSPIHT) and listless SPIHT (LSPIHT) respectively

RESOURCE PERSON TO JOURNALS :

• Reviewer for reputed international journals:

- IEEE Journal of Biomedical and Health Informatics
- Inderscience International Journal of Medical Engineering and Informatics
- Springer ALOG
- BMC Bioinformatics
- Scientific Reports
- Journal of Applied Science and Technology
- Taylor and Francis, Computer Methods in Biomechanics and Biomedical Engineering
- Research in Biomedical Engineering
- International Journal of Digital Electronics
- International Journal of VLSI design and technology
- Journal of Integrated Science and Technology

• Editor for International journals of Journal PUB publisher:

- International Journal of Digital Electronics
- International Journal of VLSI design and technology
- International Journal of Telecommunications and emerging technology

• Guest Editor:

- Journal of Integrated Science and Technology

RESOURCE PERSON TO INDUSTRY/ACADEMIA:

- Active participation in Syllabus reformation of SE/TE/ME subjects of Pune University in 2000, 2005, 2010 and 2014.
- Expert session on second year subject Network theory on topic Filters and Attenuators for Pune University teachers in PVG CoEP.
- Delivered expert sessions on Artificial intelligence and applications in Sou Venutai Chavan Polytechnic in STP sponsored by DTE.
- Expert sessions on Smith Chart and application, Digital Filter design in SCSCOE, Bhor and DPCOE, Pune.
- Subject expert for “Train the Trainer” initiative of STEs for Teachers Training Program for the subjects: Network Synthesis and Filter Design Electromagnetics, Antenna and Propagation, Control System, Digital signal Processing.

SUBJECTS TAUGHT:

- Artificial Intelligence
- Machine Learning
- Digital Electronics
- Digital Signal Processing
- Multi-rate Signal Processing
- Advance Digital Signal Processing
- Signal Compression
- Embedded Signal Processing
- Electromagnetics
- Control Systems
- Antenna and Wave Theory
- Network Theory
- Network Analysis and Synthesis

FDP/STTP/SDP/WORKSHOPS ORGANIZED AS A COORDINATOR:

- One day workshop on “Virtual Labs: hands on Online Workshop” on 02th December 2022, 10th December 2021, 24th December 2020.
- Value Addition Program on Antenna Design Thinking 2.0’ (ADT 2.0’) on 5th-29th Sept 2019.
- Workshop on Antenna Design Technology (ADT) on 22nd -23rd March 2019.
- Workshop on “Matrix-Reloaded” under IEEE Student Chapter on 18th-19th Feb. 2012.
- Panel discussion under Discrimination against Women Pakhwada on “Women Sexual Harassment” on 30th November 2022.
- One month Internship program on Antenna Design Thinking 2.0’ (ADT 3.0’) on 26th Dec - 17th Jan 2021.

CONFERENCES ATTENDED:

- National Conference on Communication, Computing and Networking Technologies, NCCCNT 2013 organized by S. G.G.S.I.E.&T., Nanded, under TEQIP-II, 15th- 16th Mar 2013.
- National Conference on Recent Advancements in Engineering (NCRAE-12), organized by Sanjeevan Engineering and Technology Institute, Kolhapur, 22-23 June 2012.
- National Conference Innovation 12 organized by University of Pune organized by M.A.E.Alandi, April 2012.
- National Conference on Signal and Image Processing Applications organized by The IET (UK), Mumbai Network and Govt. College of Engineering., Pune, September 2009
- National Conference on Engineering Applications of Mathematics organized by Maharashtra Academy of Engineering, Alandi, Pune, May 2009.
- National level conference Innovation 08 organized by University of Pune organized by Sinhgad College of Engineering, November 2008.
- National Conference on Emerging Trends in Signal Processing & Communication ETSPC 07 organized by Maharashtra Academy of Engineering, Alandi, Pune in December 2007.
- National Level Conference on Signal Processing and Automation NCSPA-07 organized by Pad. Dr. D.Y. Patil Institute of Engineering & Technology, Pune, September 2007.
- ISTE approved National Level Conference, Technobuzz 07 organized by Sou. Venutai Chavan Polytechnic, Pune, February 2007.

FDP/STTP/SDP ATTENDED:

- NPTEL-AICTE FDP
 - Digital Image Processing (Sep-Dec 2020)
 - Fundamentals of Artificial Intelligence (Sep-Dec 2020)
 - Discrete Time Signal Processing (Jul-Oct 18)
- NPTEL FDP
 - Control Engineering (Jan-Mar 2019)
- Two-week FDP/STP/STTP-08
- One week FDP/STP/STTP-23
- Three days Seminars/Workshops-08
- Two days Seminars/Workshops-09
- One day Seminars/Workshops-14

RESPONSIBILITIES HANDLED AT STES/SCOE/DEPT:

Society Level

- Working as member of Taluka coordinator for Mission 2021 Admission Counseling Cell.
- Worked as faculty In charge of E&T/C for Sinhgad Student Association (SSC)

Institute Level (SCOE)

- Nodal coordinator of NCID- 227 for Virtual Lab IIT Bombay
- Worked as Senior supervisor for SPPU exam
- Worked as Insem CAP coordinator
- Worked as Information Brochure committee incharge
- Srujan magazine incharge
- Worked as active member of Annual college gathering Ensemble 2001-2007

Department Level (E&TC)

- NAAC/NBA/IQAC department coordinator
- Mentor NBA Criterion 2 and 3
- ISF Faculty coordinator
- Worked as IEEE branch counselor (2003-2007)
- Worked as Electronics Student's Association (ETESA) (2007-2015)
- Worked as faculty in charge of SSC (2015-2021)
- Worked as PG coordinator of M.E. (Digital Systems)
- Worked Second year academic coordinator in Academic Monitoring Committee (AMC)
- Lab in-charge for Project Laboratory, Teacher Guardian, Class Teacher.
- Recognized Ph. D. research guide in E&T/C of Savitribai Phule Pune University
- Project Guide for BE, ME and Ph.D.
- Worked as Coordinator of various committees such as Timetable, Training and Placement, Industrial Visit, Purchase, etc.

DECLARATION:

I hereby declare that all the above information furnished by me are true to the best of my knowledge.

Date: 09 / 12 / 2024

Signature