

POONAM NIRAJ SONAR



Ph. D Electronics & Telecommunication, Mumbai University
M. Tech. Electronics & Telecommunication, Mumbai University
B.E. Electronics & Telecommunication, Mumbai University

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Designation : Associate Professor in Electronics & Telecommunication Department.
Experience : Educational- 16 Years
: Research and Development on DRDO Sponsored Project at IIT Bombay -2.3 Years
Date of Joining : 21st July 2008

Areas of Interest : Signal Processing Image Processing, Machine Learning

Publications: Journal:

Journal Publications:

1. **Poonam Sonar, Udhav Bhosle** “Optimization of association Rule mining for mammogram classification” International Journal of image processing (IJIP), Vol. 11, Issue 3,2017.
2. **Poonam Sonar, Udhav Bhosle**, Chandrajit Choudhury, “Comparative Study of Different Machine Learning Classifiers for Mammograms and Brain MRI Images”, International Journal of Image Mining, Inderscience Publishers Ltd., Feb 2018

Conference Publications:

1. **Poonam Sonar, Udhav Bhosle,**” Optimized Association Rules for MRI Brain Tumor Classification”, at 3rd 2016 International Conference on “Computing for Sustainable Global Development”, 16th– 18th March, 2016, Bharati Vidyapeeth’s Institute of Computer Applications and Management (BVICAM), New Delhi (INDIA)
2. **Poonam Sonar, Udhav Bhosle,** ,” Mammogram Classification with Optimized Association rules using Multi Objective Genetic Algorithm with Adaptive Mutation and Crossover, ICCSP,july-2016
3. Poonam Sonar, Deepti Jadhav, Udhav Bhosle, “Optimization of Association rules using objective function for mammography image classification”, IEEE International Conference on Communication and Signal Processing, Chennai (ICCS2016), 6-8 April 2016.
4. **Poonam Sonar, Udhav Bhosle**, Chandrajit Choudhury, “Mammography Classification using modified Hybrid SVM_KNN”, is selected for presentation and publication in,” IEEE International Conference on Signal Processing and Communication (ICSPC’17)
5. **Poonam sonar, Udhav Bhosle**, “Transform Domain Mammogram Classification Using Optimum Wavelet Decomposition and Optimized Association Rule Mining” is selected for

publication in, “Springer Advances in Intelligent systems and Computing (AISC) Series”, 2017

6. Poonam sonar, Udhav Bhosle, “Hierarchical Approach for Image Registration: Best Choice for Image Registration”, International Conference on Image Processing and Pattern Recognition (ICICPR)”, Las Vegas, Nevada, USA, July 2008, pages 564-569.
7. Akshay Thokale, Poonam Sonar, “Review on Vision Based Fire Flame Detection”, International Journal of Innovative Research in Science Engineering and Technology – Volume 4, Issue 9, September 2015.
8. Akshay Thokale, Poonam Sonar, “Hybrid Approach to Detect a Fire Based on Motion, Color and Edge”, CIIT International Journal of Digital Image Processing – Volume 7, No 09, October-November 2015. Pages: 273-277
9. Ravindra Sonawane, Poonam Sonar, “Classification and Segmentation of Brain Tumor Using Adaboost Classifier” International Conference on Global Trends in Signal Processing, Information Computing and Communication (ICSPICC 2016) during 22 – 24 December 2016.
10. Ravindra Sonawane “Classification of Brain MRI using SVM and KNN classifier”, IEEE International Conference on Sensing, Signal Processing and security (ICSSS 2017),4th-5th May 2017, Chennai.
11. Ravindra Sonawane “Classification of MRI Brain Tumor and Mammogram Images Using Learning Vector Quantization Neural Network “International Conference on Sensing, Signal Processing and security (ICSSS 2017),4th-5th May 2017, Chennai.
12. Ahmad M., Ghawale M., Sonar P. (2021) GigaHertz: Gesture Sensing Using Microwave Radar and IR Sensor with Machine Learning Algorithms, Published in Scopus index Springer Nature Book, Switzerland AG 2021 J. I.-Z. Chen et al. (Eds.): ICIPCN 2020, Advances in Intelligent system and Computing SC 1200, pp. 1–13, 2021. https://doi.org/10.1007/978-3-030-51859-2_39
13. A. Karmokar, N. Jani, A. Kalla, H. Harlalka and P. Sonar, “Inspection of Concrete Structures by a Computer Vision Technique and an Unmanned Aerial Vehicle”, IEEE Conference on Computational Performance Evaluation, Dept of Biomedical Engineering, North Eastern Hill University Shillong, Meghalaya, International Conference on Computational Performance Evaluation (ComPE),2020, Pages:338-343, Publisher IEEE
14. Arpit Singh, Rahul Pandya, Ashish Sharma, Tarush Singh, Dr. P. N. Sonar, “Effect Of Learning Rates On Adaptive Filter Algorithms And Implementation Of Kernel Adaptive Filters, International Journal of Creative Research Thoughts (IJCRT), ISSN:2320-2882, Volume.9, Issue 4, pp.341-350, April 2021,

Interaction with Professional Institutions:

STTP/FDP/ Workshops

- One week FDP on 'Engineering Education and the Industry: A post COVID-19 organized by RGIT, (1st June -5th June)
- Online FDP on" Data Science", organized by Department of Information Technology, Fr. Conceicao Rodrigues College of Engineering, Mumbai 26-5-2020 to 31-5-2020.

- One-week National FDP and Online Training on 'Moodle Learning Management System' organized by KJSIEIT in association with Spoken Tutorial Project, IIT Bombay ,26th May -30th May 2020
- Three days FDP on 'e learning: Managing online class and Creating E Contents organized by ' IQAC and Department of IT, RGIT. (5th July – 7th July).
- Three Days Faculty Development Program on “Academic Transformation with Secrets of Empowerment” organized by Dept of EXTC, RGIT,; 23rdJuly 2020 – 25
- Coordinated and attended Two week AICTE Sponsored FDP on “School of Design Thinking” 25th NOV to 6th DEC 2019 2.
- Two Days National Workshop on “Trends in Cyber Security” Organized by “IQAC and Department of Information Technology” of MCT’s Rajiv Gandhi Institute of Technology, Mumbai held on 13th & 14th June 2020.
- Webinar on “NAAC: Systematic Data Organization and Presentation”, organized by IQAC, Vidyalankar Institute of Technology, Mumbai,16th May 2020.
- One Day Symposium (Online Panel Discussion)) on “BEYOND THE PANDEMIC: Knowledge, Recession and Much More.” organized by Dept of EXTC, RGIT 9th August, 2020.
- Five-day QIP Short Term Course on “Introduction to Geographic Information systems and Applications” Conducted by IIT Bombay during May 25-29, 2009.
- Five day QIP Short Term Course on “Matlab and its applications” conducted by PVPCOE during Jan13-17 2010
- Five day QIP Short Term Course on” SCILAB” conducted by IIT, Bombay during Jan3-7 2012
- Attended a National workshop on Digital Signal Processing and its application to communication (July 2006) organized by RAIT, Nerul, Navi Mumbai.
- Successfully completed a National workshop organized by Wipro on “High Impact Teaching Skills” at SPIT, during 24-25 Nov 2008.
- Coordinated and attained three days National Workshop on “Advances in Signal Processing & Applications” at Rajiv Gandhi Institute of Technology, Versova, Andheri(W), Mumbai, during 19-21 January 2011.
- Participated in Research Scholars and alumni symposium at IIT Bombay during 7th and 8th March 2014.

Responsibilities

- Teaching: Subjects Taught: Signals and System, Principle of communication, Discrete time signal Processing, Digital Image and video Processing, Image Processing and Machine Vision
- Administrative
 - ❖ Associate Head of Department
 - ❖ Project Coordinator
 - ❖ PG Coordinator till 15th July 2020
 - ❖ WDC Secretary
 - ❖ Member of Discipline Committee
 - ❖ Member of Purchase Committee
 - ❖ Coordinator for Advisory Committee Meet
 - ❖ Class Advisor
 - ❖ Lab Incharge: Signal Processing Lab
 - ❖ Parent teacher Meet organizing Committee Member
- Syllabus Setting committee Member for Signal and System (R 19 Sem IV EXTC) , Image Processing and Machine Vision(R 19 SEM VI EXTC)
- Convener and Paper setter for Image Processing and Machine Vision, Image and Video Processing, Discrete Time signal Processing, Digital signal Processing
- Department NBA Coordinator
- Institute level Coordinator for NAAC criteria No 6:
- Grants Received

Minor Research Proposal: Concrete Structures Inspection Using Convolutional Neural Network and Machine Learning, accepted by University of Mumbai and received grant of Rs 20000 and its Completed and funds are utilized.

- **Coordinator for Two-week AICTE Sponsored FDP** on “School of Design Thinking”
- Co-coordinator for National workshop on “Advances in signal Processing and Applications (NWASPA Additional -2011)”, January 2011.
- Coordinator for Orientation Program for Signals and Systems, Sem (IV) CBSGS course on EXTC, organized by Board of Studies in EXTC engineering, University of Mumbai at RGIT, on January 3rd 2014.
- Coordinator for Orientation Program for Digital image and Video Processing, Sem(VII) CBSGS course on EXTC ,organized by Board of Studies in EXTC engineering ,University of Mumbai at RGIT, on July 3rd 2015.

- Awards/Recognition

- PG Teacher
- Ph.D. Guide in Mumbai University
- Received best paper award for “Mammography Classification hybrid SVM KNN classifier” “IEEE International conference on IEEE International Conference on Signal Processing and Communication (ICSPC'17)

- References

- Dr. S.N. Merchant, Electrical Department, IIT Bombay.

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