Dr. Varun Bajaj

Associate Professor of Electronics and Communication Discipline
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SMIEEE20, MIEEE15, Subject Editor-in-Chief (Electronics Letters) June 2020
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Research Interests: Signal Processing Application in Biomedical, Time-Frequency analysis, Artificial Intelligence, Brain Computer Intreface.

Experience

July 2021–Till now **Associate Professor**, *Discipline of Electronics and Communication, PDPM Indian Institute of Information Technology, Design and Manufacturing Jabalpur*, India.

29 May 2017–July 2021 **Assistant Professor Grade-I**, *Discipline of Electronics and Communication, PDPM Indian Institute of Information Technology, Design and Manufacturing Jabalpur*, India.

March 2014–June 2017 **Assistant Professor Grade-II**, *Discipline of Electronics and Communication, PDPM Indian Institute of Information Technology, Design and Manufacturing Jabalpur*, India.

Sep 2013–March 2014 **Visiting faculty**, *Discipline of Electronics and Communication, PDPM Indian Institute of Information Technology, Design and Manufacturing Jabalpur*, India.

July 2009–July 2010 **Assistant Professor**, *Department of Electronics and Instrumentation, Shri Vaishnav Institute of Technology and Science, Indore*, India.

Education

Aug 2010–10 Feb 2014 **PhD**, *Discipline of Electrical Engineering, Indian Institute of Technology, Indore*, India, *CPI–9.3*.
Thesis Topic: Analysis and classification of EEG signals using novel features based on non-stationary signal decompositions.

August 2007-July 2009 **M. Tech.**, *Microelectronics and VLSI Design, Shri Govindram Seksaria Institute of Technology and Science Indore*, India, *78 %*.
Thesis Topic:Study and design of single stage CMOS voltage controlled oscillator in 0.18μm Technology.

2002-July 2006 **B.E.**, *Electronics and Communication Engineering, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal*, India, *72.22 %*.

Journal Publications (100)

IEEE= 27; Elsevier=32; Springer= 23; IET= 13; Others= 5 (Publisher wise) Before 2015=5; 2016=8; 2017=9; 2018=15; 2019=14; 2020=23; 2021=11; 2022= 09, 2023=06 (Years wise) SCI/SCIE/Scopus=96; Others=4 (Indexing wise)

1. Kapil Gupta, Varun Bajaj and Irshad A Anasari, Integrated S-transform-based learning system for detection of arrhythmic fetus IEEE Transactions on Instrumentation & Measurement, Accepted 11 April 2023.
2. Nakul Kishor Pathak and Varun Bajaj, Automatic Modulation Classification using Bimodal Parallel Multichannel Deep Learning Framework for Spatial Multiplexing MIMO System, Physical Communication, Accepted 3 April 2023.
3. Smith Khare, Varun Bajaj, U. Rajendra Acharya SchizoNET: A robust and accurate Margenau-Hill time-frequency distribution based deep neural network model for schizophrenia detection using EEG signals, Physiological Measurement, IOP, Feb 2023.
4. Kapil Gupta, Varun Bajaj A Robust Framework for Automated Screening of Diabetic Patient Using ECG Signals, IEEE Sensors Journal, 24 (22), 24222-24229, SCI, 2022, Q1, 2022, 4.325
5. Kapil Gupta, Varun Bajaj and Irshad A Anasari A support system for automatic classification of hypertension using BCG signals Expert Systems With Applications Volume 214, 119058 SCI Q1 2023 8.65
6. Kapil Gupta, Varun Bajaj Deep Learning Models-Based CT-Scan Image Classification for Automated Screening of Covid-19 o Biomedical Signal Processing and Control. 80,(1) 104268 SCI Q1 2022 5.076
7. Anurodh Kumar, Varun Bajaj, Amit Vishwakarma Classification of Colorectal Tissue Histopathological Images Using Improved Deep Convolutional Neural Network, Biomedical Signal Processing and Control. 79 (2) 104172 SCI Q1 2023 5.076
8. Smith Khare, Nikhil B. Gaikwad, Varun Bajaj VHERS: A novel Variational Mode Decomposition and Hilbert Transform based EEG rhythm separation for automatic ADHD detection IEEE Transactions on Instrumentation & Measurement 71 4008310 SCI Q1 2022 5.332
9. Kapil Gupta, Varun Bajaj, Irshad A Anasari, and U. Rajendra Acharya Hyp-Net: Automated detection of hypertension using deep convolutional neural network and Gabor transform techniques with ballistocardiogram signals Biocybernetics and Biomedical Engineering 784-796 42 SCI Q1 2022 4.314
10. Kapil Gupta, Varun Bajaj and Irshad A Anasari An Improved Deep Learning Model for Automated Detection of BBB Using S-T Spectrograms of smoothed VCG Signal IEEE Sensors Journal Vol 22 Issue 9 8830-8837, SCI Q1 2022 4.325
11. Santhos Kumar A., Anil Kumar, Varun Bajaj, and G. K. Singh A Compact Fuzzy Min Max Network with Novel Trimming Strategy for Pattern Classification Knowledge-Based Systems Volume 246, 21 June 2022, 108620 SCI Q1 2022 8.038
12. Rishi Sinhal, Sachin Sharma, Irshad Ahmad Ansari and Varun Bajaj Multipurpose medical image watermarking for effective security solutions Multimedia Tools and Applications 81(10): 14045-14063 SCI Q1 2022 2.7
13. Kapil Gupta, Varun Bajaj, Irshad A Anasari, U. Rajendra Acharya Automated Classification of Sleep Apnea using Deep Learning Model and Smoothed Gabor Spectrograms of ECG Signal IEEE Transactions on Instrumentation & Measurement 71 4002109 SCI Q1 2022 4.016
14. Smith K. Khare, Varun Bajaj A hybrid decision support system for automatic detection of Schizophrenia using EEG signals Computers in Biology and Medicine 141 105028 SCI Q1 2022 4.589

15. Smith Khare, Varun Bajaj, Optimized Tunable Q Wavelet Transform based Drowsiness Detection from Electroencephalogram Signals Innovation and Research in Bio-Medical Engineering (IRBM) 43,(1) 13-21 SCIE Q3 2022 1.856
16. Smith K. Khare, Varun Bajaj, A Self-Learned Decomposition and Classification Model for Schizophrenia Diagnosis Computer Methods and Programs in Biomedicine 211 106480 SCI Q1 2021 5.428
17. Smith K. Khare, Varun Bajaj, U. Rajendra Acharya PDCNNet: An automatic framework for the detection of Parkinson's Disease using EEG signals IEEE Sensor Journal 22(15) 17017-17024 SCI Q1 2021 4.325
18. Sachin Sharma, Smith K. Khare, Varun Bajaj, Irshad A. Ansari Improving the separability of drowsiness and alert EEG signals using Analytic form of wavelet transform Applied Acoustics 181 (2021) 108164 108164 SCI Q1 2021 2.639
19. Smith K. Khare, Varun Bajaj, U. Rajendra Acharya Detection of Parkinson's disease using automated tunable Q wavelet transform technique with EEG signals Biocybernetics and Biomedical Engineering. 41, 2 679-689 SCIE Q2 2021 4.314
20. Sachin Taran, Varun Bajaj, GR Sinha and Kamal Polat Detection of Sleep Apnea Events using Electroencephalogram signals Applied Acoustics 181, 108137 108137 SCI Q1 2021 2.639
21. Smith K. Khare, Varun Bajaj, U. Rajendra Acharya SPWVD-CNN for automated detection of Schizophrenia patients using EEG signals IEEE Transactions on Instrumentation and Measurement, 70 2507409 SCI Q1 2021 4.016
22. Himanshu Singh, Sethu Venkata Raghavendra Kommuri, Anil Kumar, Varun Bajaj A new technique for Guided Filter based Image Denoising using Modified Cuckoo Search Optimization Expert Systems With Applications 176, 114884 114884 SCIE Q1 2021 6.954
23. Santhos Kumar A., Anil Kumar, Varun Bajaj, and G. K. Singh Class Label Altering Fuzzy Min-Max Network and its Application to Histopathology Image database Expert Systems With Applications 176, 114880 114880 SCIE Q1 2021 6.954
24. Smith Khare, Varun Bajaj, Time-Frequency Representation and Convolutional Neural Network based Emotion Recognition, IEEE Transactions on Neural Networks and Learning Systems, 32, (7) 2901 - 2909 SCI Q1 2021 10.451
25. Smith K. Khare, Varun Bajaj Entropy based Drowsiness Detection using Adaptive Variational Mode Decomposition IEEE Sensor Journal 21, 5, 6421-6428 SCI Q1 2021 3.301
26. N Agrawal, A Kumar, Varun Bajaj, GK Singh Design of digital IIR filter: A research survey Applied Acoustics 172 107669 SCIE Q1 2021 2.639
27. Smith K. Khare, Varun Bajaj, G. R. Sinha, Adaptive Tunable Q Wavelet Transform based Emotion Identification, IEEE Transactions on Instrumentation and Measurement, vol. 69, no. 12 9609-9617, SCI Q1 2020 4.016
28. Samrudhi Mohdiwale, Mridu Sahu, G R Sinha, Varun Bajaj, Automated Cognitive Workload Assessment using Logical Teaching Learning based Optimization and PROMETHEE Multi-Criteria Decision Making Approach, IEEE Sensor Journal, 20(22) 13629 - 13637 SCI Q1 2020 4.325
29. Sachin Taran, Prakash Chandra Sharma, Varun Bajaj, Automatic Sleep Stages Classification using Optimize Flexible AnalyticWavelet Transform Knowledge-Based Systems 192, 105367 1–8 SCI Q1 2020 8.038
30. Varun Bajaj, G R Sinha, Siuly Siuly, Abdulkadir Şengur, Current Trends in Cognitive Science and Brain Computing Research and Applications, Guest Editorial, Electronics Letters Volume 56, Issue 25, 1354 – 1355 SCI Q2 2020 1.316
31. Santhos Kumar A., Anil Kumar, Varun Bajaj, and G. K. Singh An Improved Fuzzy Min-Max

Neural Network for Data Classification IEEE Transactions on Fuzzy Systems vol. 28, no. 9, pp. 1910-1924 SCI Q1 2020 12.029

32. Siuly Siuly, Smith K. Khare, Varun Bajaj, Hua Wang and Yanchun Zhang, A Computerized Method for Automatic Detection of Schizophrenia Using EEG Signals, IEEE Transactions on Neural Systems and Rehabilitation Engineering, 28(11) 2390-2400 SCI Q1 2020 3.802
33. Anurag Nishad, Abhay Upadhyay*, G. Ravi Shankar Reddy, Varun Bajaj Classification of epileptic EEG signals using sparse spectrum based empirical wavelet transform Electronics Letters. Vol. 56 No. 25 1370–1372 SCI Q2 2020 1.316
34. Smith K. Khare, and Varun Bajaj, An Evolutionary Optimized Variational Mode Decomposition for Emotion Recognition, IEEE Sensors Journal, 21(2), 2035-2042 SCI Q1 2020 4.325
35. Smith K. Khare, Anurag Nishad, Abhay Upadhyay, and Varun Bajaj, Classification of emotions from EEG signals using time-order representation based on the S-transform and convolutional neural network, Electronics Letters. Vol. 56 No. 25 1370–1372 SCI Q2 2020 1.316
36. M Murugappan, W Alshuaib, AK Bourisly, SK Khare, S Sruthi, Varun Bajaj Tunable Q wavelet transform based emotion classification in Parkinson's disease using Electroencephalography PLoS ONE 15(11): e0242014. Jan-17 Scopus Q1 2020
37. Smith Khare, Varun Bajaj, A Facile and Flexible Motor Imagery Classification using Electroencephalogram Signals, Computer Methods and Programs in Biomedicine, Volume 197, December 2020, 105722 SCI Q1 2020 5.428
38. Silvia Liberata Ullo, Smith K. Khare , Varun Bajaj , and G. R. Sinha, Hybrid Computerized Method for Environmental Sound Classification, IEEE Access, VOLUME 8, 124055-65 SCI Q1 2020 3.367
39. Santhos Kumar A., A. Kumar, V. Bajaj, G. K. Singh, McCulloch Algorithm inspired Cuckoo Search Optimizer based Mammographic Image Segmentation Multimedia Tools and Applications, 79 30453–30488 SCI Q1 2020 2.757
40. Sethu Venkata Raghavendra Kommuri; HIMANSHU SINGH; Anil Kumar; Varun Bajaj, Bidimensional Empirical Mode Decomposition Based Diffusion Filtering For Image Denoising Circuits, Systems, and Signal Processing, 39, 5127–5147 SCIE Q2 2020 2.225
41. Smith Khare, Varun Bajaj Constrained based Tunable Q Wavelet Transform for Efficient Decomposition of EEG Signals Applied Acoustics 163 107234 SCIE Q1 2020 2.639
42. Varun Bajaj, Sachin Taran, Smith K. Khare, and Abdulkadir Sengur Feature Extraction Method for Classification of Alertness and Drowsiness States EEG Signals Applied Acoustics 163 107224 SCIE Q1 2020 2.639
43. Shalu Chaudhary, Sachin Taran, Varun Bajaj, Siuly Siuly A Flexible Analytic Wavelet Transform Based Approach for Motor-Imagery Tasks Classification in BCI Applications Computer Methods and Programs in Biomedicine 187 105325 SCI Q1 2020 5.428
44. Nikhil Agrawal, Anil Kumar; Varun Bajaj, Design of Infinite impulse response filter uisng fractional derivative constraints and hybrid particle swarn optimization, Circuits, Systems, and Signal Processing, 33 6162–6190 SCIE Q2 2020 2.225
45. Nikhil Agrawal, Anil Kumar; Varun Bajaj, A New Design Approach for Nearly Linear Phase Stable IIR Filter using Fractional Derivative IEEE/CAA Journal of Automatica Sinica 7(2) 527 - 538 SCIE Q1 2020 6.171
46. Sachin Taran, Varun Bajaj Sleep Apnea Detection Using Artificial Bee Colony Optimize Hermite Basis Functions for EEG Signals IEEE Transactions on Instrumentation and Measurement 69(02) 608-616 SCI Q1 2020 4.016
47. Zafer Comert, Abdulkadir engr, Yaman Akbulut, mit Budak, Adnan Fatih Kocamaz, Varun Bajaj,

Efficient approach for digitization of the cardiotocography signals Physica A: Statistical Mechanics and its Applications 537 1–9 Scopus Q2 2020 3.263

48. Chada Sravani, Varun Bajaj, Sachin Taran, Abdulkadir Sengur, Flexible analytic wavelet transform based features for physical action identification using sEMG signals, IRBM, Innovation and Research in BioMedical Engineering, 41 (2020) 18–22 SCIE Q3 2020 1.856
49. Saad Ahmad, Shubham Agrawal, Samta Joshi, Sachin Taran, Varun Bajaj, Fatih Demir, and Abdulkadir Sengur Environmental Sound Classification using Optimum Allocation Sampling based Empirical Mode Decomposition Physica A: Statistical Mechanics and its Applications 537 1–11 Scopus Q2 2020 3.263
50. Sravani Chada, Sachin Taran, Varun Bajaj, An efficient approach for physical actions classification using surface EMG signals Health Information Science and Systems, 8(03) 1–7 SCIE Q1 2019
51. Fatih Demir, Abdulkadir Sengur, Varun Bajaj and Kemal Polat, Towards the classification of heart sounds based on convolutional deep neural network, Health Information Science and Systems, 07(16) 1–9 SCIE Q1 2019
52. Fatih Demir, Varun Bajaj, Melih C. Ince, Sachin Taran, Abdulkadir Sengur, Surface EMG signals and deep transfer learning based physical action classification Neural Computing and Applications 31 8455–8462 SCIE Q1 2019 5.606
53. Santhos Kumar A., Anil Kumar, Varun Bajaj, and G. K. Singh, A novel pectoral muscle segmentation from scanned mammograms using EMO algorithm, Biomedical Engineering Letters, 9(4) 481–496 Scopus Q2 2019
54. Umit Budak, Varun Bajaj, Yaman Akbulut, Orhan Atilla, Abdulkadir Sengur, An Effective Hybrid Model for EEG-Based Drowsiness Detection IEEE Sensor Journal 19(17) 7624-7631 SCI Q1 2019 4.325
55. Varun Bajaj, Sachin Taran, Erkan Tanyildizi, and Abdulkadir Sengur, Robust Approach based on Convolutional Neural Networks for Identification of Focal Eeg signals IEEE Sensors Letters 2019, 03//05 2475-1472 Scopus Q1 2019
56. Sachin Taran, Varun Bajaj Emotion recognition from single-channel EEG signals using a two-stage correlation and instantaneous frequency-based filtering method Computer Methods and Programs in Biomedicine 173 157-165 SCI Q1 2019 5.428
57. Siuly Siuly, Varun Bajaj, Abdulkadir Sengur, Yanchun Zhang An advanced analysis system for identifying alcoholic brain state through EEG signals International Journal of Automation and Computing 16(06) 737-747 Scopus Q2 2019
58. Shalu Chaudhary, Sachin Taran, Varun Bajaj, Abdulkadir Sengur Convolutional Neural Network Based Approach Towards Motor Imagery Tasks EEG Signals Classification IEEE Sensors Journal 19(12) 4494- 4500 SCI Q1 2019 4.325
59. Shreya Pare, Anil Kumar, Varun Bajaj, Girish Kumar Singh A context sensitive multilevel thresholding using swarm based algorithms IEEE/CAA Journal of Automatica Sinica 6(6) 1471 - 1486 SCIE Q1 2019 6.171
60. Siuly SIULY, Omer F Alcin, Varun Bajaj, A sengur, Yanchun Zhang, Exploring Hermite transformation in brain signal analysis for the detection of epileptic seizure IET Science, Measurement Technology 13(1) 35-41 SCI Q2 2019 1.975
61. Anala Hari Krishna, Aravapalli Bhavya Sri, KYVS Priyanka, Sachin Taran, and Varun Bajaj Emotion classification using EEG signals based on tunable-Q wavelet transform IET Science, Measurement and Technology 13(3) 375-380 SCI Q2 2019 1.975
62. N. Agrawal, A. Kumar, Varun Bajaj, and GK Singh Design of bandpass and bandstop infinite impulse response filters using fractional derivative IEEE Transactions on Industrial Electronics

66(2) 1285-1295, SCI Q1 2019 8.236

63. Nikhil Agrawal, Anil Kumar; Varun Bajaj A New Method for Designing of Stable Digital IIR Filter using Hybrid Method Circuits, Systems, and Signal Processing 38(5) 2187–2226 SCIE Q2 2019 2.225
64. Sachin Taran, and Varun Bajaj, Clustering Variational Mode Decomposition for Identication of Focal EEG Signals IEEE Sensors Letters 2//4 01—04 Scopus Q1 2018
65. Sachin Taran, and Varun Bajaj Drowsiness Detection Using Adaptive Hermite Decomposition and Extreme Learning Machine for Electroencephalogram Signals IEEE Sensors Journal 18(21) 8855-8862 SCI Q1 2018 4.325
66. S. Pare, A. Kumar, Varun Bajaj, and GK Singh Image Segmentation Using Multilevel Thresholding: A Research Review Iranian Journal of Science and Technology, Transactions of Electrical Engineering NA 1–29 SCIE Q3 2018 1.376
67. Erkan Deniz, Abdulkadir engur, Zehra Kadiroglu, Yanhui Guo, Varun Bajaj, and Umit Budak Transfer Learning Based Histopathologic Image Classification for Breast Cancer Detection Health Information Science and Systems 06(18) 1–7 SCIE Q1 2018
68. Varun Bajaj, Sachin Taran and Abdulkadir Sengur, Emotion classification uing exible analytic wavelet transform for electroencephalogram signals Health Information Science and Systems 06:12 1–7 SCIE Q1 2018
69. Sukumar Nagineni, Sachin Taran, and Varun Bajaj, Features based on variational mode decomposition for identification of neuromuscular disorder using EMG signals Health Information Science and Systems 06:13 1–10 SCIE Q1 2018
70. Sachin Taran, Varun Bajaj Motor Imagery Tasks based EEG Signals Classification using Tunable-Q Wavelet Transform Neural Computing and Applications 31 6925–6932 SCIE Q1 2018 5.606
71. Podugu Uday Kiran, Nunna Abhiram, Sachin Taran and Varun Bajaj TQWT based features for classi cation of ALS and healthy EMG signals, American Journal of Computer Science and Information Technology 6 (2:19) 1–7 2018
72. Shweta Jain, Varun Bajaj, and Anil Kumar, Effective denoising of ECG by optimized adaptive thresholding on noisy modes IET Science, Measurement Technology 12(5) 640-644. SCI Q1 2018 1.975
73. Shweta Jain, Varun Bajaj, and Anil Kumar Riemann Liouvelle Fractional Integral based Empirical Mode Decomposition for ECG Denoising IEEE Journal of Biomedical and Health Informatics 22–4 1133–1139 SCI Q1 2018 5.772
74. Anchala Priya, Pooja Yadav, Shweta Jain, Varun Bajaj An efficient method for classi cation of alcoholic and normal EEG signals using EMD IET The Journal of Engineering 2018(3) 166-172 Emerging SCI 2018
75. Sachin Taran, Varun Bajaj Rhythm based identification of alcohol EEG signals IET Science, Measurement and Technology 12(3) 343-349 SCI Q2 2018 1.975
76. Sachin Taran, Varun Bajaj, D Sharma, S Siuly, A Sengur Features based on analytic IMF for classifying motor imagery EEG signals in BCI applications Measurement 116 68-76 SCIE Q1 2018 3.927
77. S. Pare, A. K. Bhandari, A. Kumar, and Varun Bajaj Backtracking search algorithm for color image multilevel thresholding Signal, Image and Video Processing 12
    2 385-392 SCIE Q2 2018 2.157
78. Varun Bajaj, Mayank Pawar, Vinod Kumar Meena, Mukesh Kumar, Abdulkadir Sengur, and Yanhui Guo Computer Aided Diagnosis of Breast Cancer using Bidimensional Empirical Mode Decomposition Neural Computing and Applications 31

8 3307–3315 SCIE Q1 2018 5.606

79. Sachin Taran, Varun Bajaj, Siuly SIULY An optimum allocation sampling based feature extraction scheme for distinguishing seizure and non-seizure EEG Health Information Science and Systems 5:7 1–7 SCIE Q1 2017
80. Abdulkadir Sengur, Yaman Akbulut, Yanhui Guo, Varun Bajaj, Classification of Amyotrophic Lateral Sclerosis Disease Based on Convolutional Neural Network and Reinforcement Sample Learning Algorithm Health Information Science and Systems 5:9 1–7 SCIE Q1 2017
81. N. Agrawal, A. Kumar, and Varun Bajaj A new design method for stable IIR filters with nearly linear-phase response based on fractional derivative and swarm intelligence IEEE Transactions on Emerging Topics in Computational Intelligence 1(6) 464-477. Q1 2017
82. S. Pare, A. Kumar, Varun Bajaj, GK Singh An efficient method for multilevel color image thresholding using Cuckoo search algorithm based on minimum cross entropy Applied Soft Computing 61 570- 592 SCIE Q1 2017 6.725
83. Sachin Taran, Varun Bajaj, and D Sharma Robust Hermite decomposition algorithm for classification of sleep apnea EEG signals IET Electronics Letters 53, 1182-1184 SCI Q2 2017 1.316
84. Varun Bajaj, K Rai, A Kumar, D Sharma, GK Singh, Rhythm based features for classification of focal and non-focal EEG signals IET Signal Processing 11(6) 743-748 SCI Q2 2017 1.692
85. N. Agrwal, A. Kumar, and Varun Bajaj Design of Digital IIR Filter with Low Quantization Error using Hybrid Optimization Technique Soft Computing Jan-17 SCIE Q2 2017 3.643
86. Vipin K Mishra, Varun Bajaj, Anil Kumar, Dheeraj Sharma, and G. K. Singh An efficient method for analysis of EMG signals using improved empirical mode decomposition Int. J. Electron. Commun. (AEÜ) 72 200-209 SCI Q2 2017 3.183
87. Varun Bajaj, Khushnandan Rai, Anil Kumar, and Dheeraj Sharma, Time-frequency image based features for classi cation of epileptic seizure from EEG signals, Biomedical Physics & Engineering Express 3(1) 1–12 Q3 2017
88. S. Jain, Mitul Kumar Ahirwal, Anil Kumar, Varun BAJAJ, and G. K. Singh QRS detection using adaptive filters: A comparative study ISA Transactions 66 362-375 SCI Q1 2016 5.468
89. Nikhil Agrawal, A. Kumar, Varun Bajaj, G. K. Singh High Order Stable Infinite Impulse Response Filter Design using Cuckoo Search Algorithm International Journal of Automation and Computing 14(5) 589-602. Scopus Q2 2016
90. Vipin K Mishra, Varun Bajaj, Anil Kumar, and G. K. Singh Analysis of ALS and normal EMG signals based on empirical mode decomposition IET Science, Measurement and Technology 10(8) 963- 971 SCI Q2 2016 1.975
91. S Jain, Varun Bajaj, and A. Kumar An efficient algorithm for classification of ECG beats based on ABC-LSSVM classifier IET Electronics Letters 52(14) 1198–1200 SCI Q2 2016 1.316
92. S Jain, A. Kumar, and Varun Bajaj Technique for QRS complex detection using particle swarm optimization (PSO) IET Science, Measurement and Technology 10(6) 626 - 636 SCI Q2 2016 1.975
93. Omer F. ALCIN, Siuly SIULY, Varun BAJAJ, Yanhui Guo, Abdulkadir SENGR, Yanchun Zhang Multi-category EEG signal classification developing Time- Frequency Texture Features based Fisher Vector encoding method Neurocomputing 218 SCIE Q1 2016 5.719
94. Varun Bajaj, Y. GUO, A. SENGUR, S. SIULY, O. F. ALCIN A hybrid method based on Time-Frequency images for classification of alcohol and control EEG signals Neural Computing and Applications 28(12) 3717-3723 SCIE Q1 2016 5.606
95. S. Pare, A. Kumar, V. Bajaj, G. K. Singh A multilevel color image segmentation technique based on cuckoo search algorithm and energy curve Applied Soft Computing 47 76-102 SCIE Q1 2016

6.725

96. V. Bajaj and A. Kumar Features based on intrinsic mode functions for classification of EMG signals International Journal of Biomedical Engineering and Technology 18(2) 156-167 Scopus Q4 2015 1.01
97. V. Bajaj and R.B. Pachori, Automatic classification of sleep stages based on the time-frequency image of EEG signals, Computer Methods and Programs in Biomedicine 112(3) 320-328 SCI Q1 2013 5.428
98. V. Bajaj and R.B. Pachori Epileptic seizure detection based on the instantaneous area of analytic intrinsic mode functions of EEG signals Biomedical Engineering Letters 3(1) 17-21 Scopus Q2 2013
99. V. Bajaj and R.B. Pachori, Classification of seizure and nonseizure EEG signals using empirical mode decomposition IEEE Transactions on Information Technology in Biomedicine 16(6) 1135-1142 SCI Q1 2012 2.493
100. R.B. Pachori and V. Bajaj Analysis of normal and epileptic seizure EEG signals using empirical mode decomposition Computer Methods and Programs in Biomedicine 104(3) 373-381 SCI Q1 2011 5.428

Conference Publications (34)

1. A. Kumar, A. Vishwakarma, V. Bajaj, Automatic Classification of Multi-Class Skin Lesions Dermoscopy Images Using an Efficient Convolutional Neural Network. In 2023 IEEE International Students' Conference on Electrical, Electronics and Computer Science (SCEECS), pp. 1-5. IEEE, 2023.
2. A. Kumar, A. Vishwakarma, V. Bajaj An efficient convolutional neural network for classification of multi-class colorectal tissue using histopathological images, 2023 IEEE 6th International Conference on Information and Communication Technology (CICT-2022).
3. Abhishek Singh, Kapil Gupta, Varun Bajaj, Discrimination of Normal and Abnormal Knee Joint VAG Signals Using EMD, 2nd International Conference on Computational Electronics for Wireless Communication (Springer), Best Paper Award 9-10 June 2022. NITK
4. Smith K Khare, Varun Bajaj, A CACDSS for automatic detection of Parkinson disease using EEG signals, "International Conference on Control, Automation, Power and Signal processing (CAPS-2021), Accepted from 10th to 12th December 2021" India
5. Anurodh Kumar, Amit Vishwakarma, Varun Bajaj, Avinash Sharma and Chirag Thakur, Colon Cancer Classification of Histopathological Images Using Data Augmentation, International Conference on Control, Automation, Power and Signal processing (CAPS-2021), Accepted from 10th to 12th December 2021 India
6. Anugya Pareta, Sachin Taran, Varun Bajaj, Abdulkadir Sengur, "Automatic Environment Sounds Classification using Optimum Allocation Sampling" "IEEE 4th International Conference on Robotics and Automation Engineering," Singapore 69-73. November 22-24, 2019
7. Santhos Kumar A., A. Kumar, V. Bajaj, G. K. Singh and B. Kuldeep, "A Fuzzy Min-Max Neural Network based Classification of Histopathology Images," 5th International Conference On Signal Processing And Communication (ICSC-2019) Noida, India 143-146 March 7th-9th, 2019
8. Santhos Kumar A., A. Kumar, V. Bajaj, G. K. Singh and B. Kuldeep, K-highest Fuzzy Min-Max Network to Classify Histopathological Images 2019 International Conference on Communication and Signal Processing (ICCSP) Chennai, India 240-244 4-6 April 2019
9. Nagineni Sukumar ; Sachin Taran ; Varun Bajaj Physical Actions Classification of Surface EMG Signals Using VMD 2018 International Conference on Communication and Signal Processing

(ICCSP) Chennai, India 705-709 3-5 April 2018

10. Sachin Taran, and Varun Bajaj, Drowsiness Detection using Instantaneous Frequency based Rhythms Separation for EEG Signals 2018 Conference on Information and Communication Technology (CICT) Jabalpur, India 1-6 26-28 Oct. 2018
11. S. V. Raghavendra Kommuri, H. Singh, A. Kumar and V. Bajaj Bidimensional Empirical Mode Decomposition based Intrinsically Augmented Gamma Correction for Quality Restoration of Textural Images 2019 Conference on Information and Communication Technology (CICT) Jabalpur, India 1-6 26-28 Oct. 2019
12. Abdulkadir Sengur, Mehmet Gedikpinar, Yaman Akbulut, Erkan Deniz, Varun Bajaj, Yanhui Guo DeepEMGNet: An Application for Efficient Discrimination of ALS and Normal EMG Signals 12th International Conference Mechatronics 2017 Brno, Czech Republic, 619-625 6-8 September, 2017.
13. Sachin Taran, and Varun Bajaj, Dheeraj Sharma TEO Separated AM-FM Components Used for Identification of Apnea EEG Signals 2017 IEEE 2nd International Conference on Signal and Image Processing Singapore 391-395 4-6 Aug. 2017
14. S. Jain ; A. Kumar ; V. Bajaj QRS Complex Detection using Cuckoo Search Optimization Algorithm, 2017 International Conference on Communication and Signal Processing (ICCSP) Chennai, India 91-95 6-8 April 2017
15. Pooja Yadav, Anchala Priya, Sachin Taran, V. Bajaj, Dheeraj Sharma, Discrimination of alcohol and normal EEG signal using EMD 2017 4th International Conference on Signal Processing and Integrated Networks (SPIN) Noida, India 410-413 2-3 Feb. 2017
16. S. Jain ; A. Kumar ; V. Bajaj Real-time Detection of Electrocardiograph Peaks: A Genetic Algorithm based Approach 2017 4th International Conference on Signal Processing and Integrated Networks (SPIN) Noida, India 262-266 2-3 Feb. 2017
17. Swati Walde, Pragati Rani, Varun Bajaj, and Dheeraj Sharma "Time Frequency Image based Features for detection of Focal EEG Signals" 2016 International Conference on Signal Processing and Communication (ICSC) Noida, India 358-362 26-28 Dec 2016
18. Vipin K Mishra, Varun Bajaj, and Anil Kumar, and Dheeraj Sharma. "Discrimination between Myopathy and Normal EMG Signals using Intrinsic Mode Functions" "4th IEEE International Conference on Communication and Signal Processing-ICCSP'16," Melmaruvathur, Tamilnadu, India. 299-303 6-8 April 2016
19. Vipin K Mishra, Varun Bajaj, and Anil Kumar "Classification of Normal, ALS and Myopathy EMG signals using ELM classifier" "Second IEEE International Conference on Advances in Electrical, Electronics, Information, Communication and Bio-Informatics (AEEICB -16)" Chennai, India 455-459 "27th Feb, 2016"
20. A.R. Dwivedi, H. Bari, S. Nath, Varun Bajaj, Dheeraj Sharma and Anil Kumar Analysis of focal and non-focal EEG signals using bivariate empirical mode decomposition "IEEE Student conference on Elecrical, Electronics and Computer Science (SCEECS-2016)" Bhopal, India 1-3 5-6 March 2016
21. N. Agrawal, A. Kumar, and Varun Bajaj Controlled Ripple Based Design of Digital IIR Filter 21st International Conference on Digital Signal Processing (DSP) "Beijing China" 627-631 16-18 Oct 2016
22. N. Agrawal, A. Kumar, and Varun Bajaj "Digital IIR Filter Design With Controlled Ripple Using Cuckoo Search Algorithm" "International Conference on Signal and Information Processing (IConSIP-2016)" Nanded, Maharashtra, India. 1-5 6th to 8th October, 2016.
23. K. Rai, V. Bajaj, and A. Kumar "Novel Feature for Identification of Focal EEG Signals with K-Means and Fuzzy C-Means Algorithms" 20th IEEE International Conference on Digital Signal

Processing (DSP) Singapore 412-416 July 21-24, 2015

24. K. Rai, V. Bajaj, and A. Kumar "Hilbert-Huang transform based classification of sleep and wake EEG signals using fuzzy C-means algorithm" 2015 International Conference on Communications and Signal Processing (ICCSP) Melmaruvathur, Tamilnadu, India. 460-464 2-4 April 2015
25. K. Rai, V. Bajaj, and A. Kumar "Features extraction for classification of focal and non-focal EEG signals" Information Science and Applications Lecture Notes in Electrical Engineering Pattaya, Thailand 599-605 339
26. G. Sahu, N. Chaurasia, P. P. Suwalka, V. Bajaj and A. Kumar "HHT based features for discrimination of EMG signals" "Proceedings of Second International Conference Information Systems Design and Intelligent Applications" Kalyani, India 95-103 January 8-9, 2015,
27. M. Gehlot, Y. Kumar, H. Meena, V. Bajaj, and A. Kumar "EMD based features for discrimination of focal and non-focal EEG signals" "Proceedings of Second International Conference Information Systems Design and Intelligent Applications" Kalyani, India 85-93 January 8-9, 2015,
28. N. Agrawal, A. Kumar and V. Bajaj Optimized design of digital IIR filter using artificial bee colony algorithm 2015 International Conference on Signal Processing, Computing and Control (ISPCC) Noida, India 316-321 24-26 Sept. 2015
29. N. Agrawal, A. Kumar and V. Bajaj Hybrid method based optimized design of digital IIR filter 4th IEEE International Conference on Communication and Signal Processing-ICCSP'15 Melmaruvathur, Tamilnadu, India. 1568-1573 2-4 April 2015
30. V. Bajaj and R.B. Pachori, "Human emotion classification from EEG signals using multiwavelet transform" IEEE International Conference on Medical Biometrics Shenzhen, Cjhina 125-130 30 May-01 June, 2014
31. V. Bajaj and R.B. Pachori "Separation of rhythms of EEG signals based on Hilbert-Huang transformation with application to seizure detection" International Conference on Convergence and Hybrid Information Technology, LNCS 7425 "Daejeon, South Korea." 493-500 23-25 August, 2012
32. V. Bajaj and R.B. Pachori "EEG signal classification using empirical mode decomposition and support vector machine" International Conference on Soft Computing for Problem Solving, AISC 131 Roorkee, India 623-635 20-22 December, 2011
33. V. Bajaj and R.B. Pachori "Application of the sample entropy for discrimination between seizure and seizure-free EEG signals" 5th Indian International Conference on Artificial Intelligence Tumkur, India. 1232-1247 14-16 December, 2011
34. D.K. Mishra, and V. Bajaj A single stage source couple CMOS VCO in 0.18um CMOS technologies with low power consumption 2009 International Conference on Control, Automation, Communication and Energy Conservation (INCACEC 2009) Erode, India 584-586 05-Jun-09

Edited Books (14)

1. Varun Bajaj and GR Sinha (Eds), Modelling and Analysis of Active Biopotential Signals in Healthcare Volume-1, IOP Series in Physics and Engineering in Medicine and Biology, 382pp, Auguest 2020. iopscience.iop.org/book/978-0-7503-3279-8
2. Varun Bajaj and GR Sinha (Eds), Modelling and Analysis of Active Biopotential Signals in Healthcare Volume-2, IOP Series in Physics and Engineering in Medicine and Biology, Inpress, 2020- 21. 10.1088/978-0-7503-3411-2, iopscience.iop.org/book/978-0-7503-3411-2
3. Varun Bajaj and GR Sinha (Eds), Computer-aided Design and Diagnosis Methods for Biomedical Applications, CRC Taylor & Francis Group 2020-21. 978-0-367-63883-2/410018. www.routledge.com/Computer-aided-Design-and-Diagnosis-Methods-for-Biomedical-Applications/Bajaj-Sinha/p/book/9780367638832

4. Varun Bajaj and GR Sinha (Eds), Analysis of medical modalities for improved diagnosis in modern healthcare, CRC Taylor & Francis Group 2021. 9780367705367, https://www.routledge.com/Analysis-of-Medical-Modalities-for-Improved-Diagnosis-in-Modern-Healthcare/Bajaj-Sinha/p/book/9780367705367
5. Varun Bajaj, GR Sinha and Chinmay Chakraborty (Eds), Biomedical Signal Processing for Healthcare Applications, Series: Emerging Trends in Biomedical Technologies and Health informatics CRC Taylor & Francis Group 2021. 9780367705879. https://www.routledge.com/Biomedical-Signal-Processing-for-Healthcare-Applications/Bajaj-Sinha-Chakraborty/p/book/9780367705879
6. Varun Bajaj and Irshad Ahmad Ansari (Eds), High performance computing for Intelligent Medical Systems, https://iopscience.iop.org/book/978-0-7503-3815-8 IOP Books 2021.
7. Irshad Ahmad Ansari, and Varun Bajaj (Eds), Advanced Security Solutions for Multimedia, https://iopscience.iop.org/book/978-0-7503-3735-9 2021.
8. Varun Bajaj and GR Sinha (Eds), Artificial Intelligence based Brain Computer Interface (BCI), https://www.elsevier.com/books/artificial-intelligence-based-brain-computer-interface/bajaj/978-0-323-91197-9 Elsevier , 2022.
9. Varun Bajaj and Irshad Ahmad Ansari (Eds), Computational Intelligence based solutions for Vision Systems, IOP May 2022. https://iopscience.iop.org/book/978-0-7503-4821-8.pdf
10. GR Sinha and Varun Bajaj (Eds), Cognitive Sensors, Volume 1: Intelligent Sensing, Sensor Data Analysis and Applications IOP Submitted 2022, https://iopscience.iop.org/book/edit/978-0-7503-5326-7
11. GR Sinha and Varun Bajaj (Eds), Cognitive Sensors, Volume 2: Applications in Smart Healthcare, IOP under preparation 2023, https://doi.org/10.1088/978-0-7503-5346-5.
12. Varun Bajaj and Irshad Ahmad Ansari (Eds), IoT in Biomedical Sciences: Challenges and Applications' IOP Submitted 2023
13. Irshad Ahmad Ansari and Varun Bajaj (Eds), Advanced Signal Processing for Industry 4.0, Volume 1: Evolution, communication protocols, and applications in manufacturing systems; IOP under preparation 2023
14. Irshad Ahmad Ansari and Varun Bajaj (Eds), Advanced Signal Processing for Industry 4.0, Volume 2: Security issues, management and future opportunities. IOP under preparation 2023

Book Chapters (12)

1. Ankit Charan Janbandhu, Ankit and Sharma, Sachin and Ansari, Irshad Ahmad and Bajaj, Varun, Drone-based vision system: surveillance during calamities, In Computational Intelligence Based Solutions for Vision Systems, IOP Publishing, 2022, Book Chapter, 1-19, https://dx.doi.org/10.1088/978-0-7503-4821-8ch1.
2. S. K. Khare, V. Bajaj, Sachin Taran, and G. R. Sinha. "Multiclass sleep stage classification using artificial intelligence based time-frequency distribution and CNN." In Artificial Intelligence-Based Brain-Computer Interface, pp. 1-21. Academic Press, 2022. https://doi.org/10.1016/B978-0-323-91197-9.00012-6
3. S. K. Khare, V. Bajaj, A. Sengur, and G. R. Sinha, 2022. Classification of mental states from rational dilation wavelet transform and bagged tree classifier using EEG signals. In Artificial Intelligence-Based Brain-Computer Interface (pp. 217-235). Academic Press. https://doi.org/10.1016/B978-0-323-91197-9.00014-X
4. R. Sinhal, T K Sharma, I A Ansari and V Bajaj, Blind image watermarking with efficient dual restoration feature, I A Ansari and V Bajaj (Eds) Advanced Security Solutions for Multimedia, IOP Publishing, 2021, Book Chapter,1-20, http://dx.doi.org/10.1088/978-0-7503-3735-9ch1.
5. K. Gupta, S K Khare, and Varun Bajaj, and I A Ansari, Automatic detection of hypertension by

flexible analytic wavelet transform using electrocardiogram signals, High Performance Computing for Intelligent Medical Systems, IOP Publishing, 2021, 1-18, http://dx.doi.org/10.1088/978-0-7503-3815-8ch1

6. Sachin Taran, Smith K. Khare, Ravi, Varun Bajaj, and G. R. Sinha, Classification of Alertness and Drowsiness States using the Complex Wavelet Transform based Approach for EEG Records Analysis of medical modalities for improved diagnosis in modern healthcare CRC Taylor & Francis 2021
7. M Murugappan, Smith K. Khare, Waleed Alshuaib, Ali K Bourisly, Varun Bajaj, G. R. Sinha, Electroencephalogram Signals based Emotion Classification in Parkinson's Disease using Recurrence Quantification Analysis and Nonlinear Classifiers, Computer-aided Design and Diagnosis Methods for Biomedical Applications CRC Taylor & Francis 2021
8. G R Sinha, Varun Bajaj, Data Deduplication Applications in Cognitive Science and Computer Vision Research, Data Deduplication Approaches: Concepts, Strategies, and Challenges (Elsevier) 2020.
9. Sachin Taran, Smith K. Khare, Varun Bajaj, and G. R. Sinha, Classification of Motor-Imagery Tasks from EEG Signals using Rational Dilation Wavelet Transform, Modelling and Analysis of Active Biopotential Signals in Healthcare Volume-2 2021
10. Smith K. Khare, Varun Bajaj, Siuly Siuly, G R Sinha Classification of schizophrenia patients through empirical wavelet transformation using electroencephalogram signals, Modelling and Analysis of Active Biopotential Signals in Healthcare Volume-1 2020; 1.1-1.26 doi:10.1088/978-0-7503-3279-8ch1.
11. Smith K Khare, Varun Bajaj, GR Sinha, Automatic drowsiness detection based on variational non-linear chirp mode decomposition using electroencephalogram signals, Modelling and Analysis of Active Biopotential Signals in Healthcare Volume-1 2020; 5.1-5.25 doi:10.1088/978-0-7503-3279-8ch5.
12. V. Bajaj and R.B. Pachori, Detection of human emotions using features based on the multiwavelet transform of EEG signals, In: A.E. Hassanien and A.T. Azar (Eds.) Brain-Computer Interfaces: Current Trends and Applications, Intelligent Systems Reference Library by Springer-Verlag, Germany, 2015, Vol. 74, pp.215-240.

Consultancy Project

1. As a consultant from Siya consultancy, Jabalpur for project implementation of Honeywell Automation India Limited (signal processing based solution), amount 10000Rs Dec-2016 to Feb 2017.
2. Navjeet Bagga and Varun Bajaj, AI and ML based data analytics algorithm for Medtech system Humors Tech 20000 Jan 2022-Nov 2022
3. Varun Bajaj and Irshad Ahmad Anasari, Implementation of signal and image processing algorithm for related application from Jagadish Chandra Bose Research Organization UP amount 1 Lakh Rs 13-07-2020 for 2 years.

Research Project

1. V. Bajaj(PI), Computer Aided Design for Development of Hardware prototype for Diagnosis of Diabetes using ECG Signals, CSIR EMR-II, 2021-2024.
2. V. Bajaj(PI) and Sraban K Mohnati (Co-PI), FPGA prototype of non-recursive key based cryptosystem for secure transmission of real-time privacy signal, DST/ICPS-Individual/2018/819(G), 14-12-2018, PI nominated 10-02-2020.

3. V. Bajaj(PI) Brain computer interface for classification of human emotions, Research Initiation Grant In IIITDM Jabalpur, Completed 4-10-2016 to 4-12-2018.

4. Priya Ranjan Muduli and Varun Bajaj (Co-PI), Development of wearable internet of medical things for continous health monitortg of astronau R&D/SA/IS/RO/ECE/22-23/02/387,

Patent

1. Kapil Gupta, Varun Bajaj and Irshad A Anasari, A Vibration Recording Device For Controlling The Ambient Temperature And A Method Thereof, INDIAN Filed 202221077132, 30/12/2022
2. Deevesh Chaudhary, Prakash Chandra Sharma, Dinesh Kumar Saini, Varun Bajaj, Vijay Prakash Sharma, 2021105073 Alarm Buzzer For Baby Fall Protector Bed, IP Australia Filed 2021-08-06, 20-04-2022 2022
3. Harshit Garg, Siddhant Lohia, Kuhu Pyasi & Varun Bajaj, System And Method For Assisting In Parking Of a vehicle, INDIAN Filed 202121001774, 14/01/2021
4. Deepak. Ch, Arjun Choudhary, Abhishek Sharma, Arun Kumar, Sinha, Sulabh Bansal, Prakash Chandra Sharma, Varun Bajaj, Sanjiv, Sharma, Rohit Raja 2020103853 Dynamic Digital Twin System And A Method Of Operating Thereof, IP Australia Granted 2-12-2020, 27-Jan 2021 2021

Research Supervision

1. Ph.D Supervision -
   (1) Dr. Shweta Jain (1420264), New Framework for De-noising and Classification of Electrocardiogram Beats using Evolutionary Techniques, Completed Dec 2018 (with Dr Anil Kumar)
   (2) Dr. Sachin Taran (1520265), Adaptive Framework for Analysis and Classification of Electroencephalogram Signals, Completed 15 July 2019
   (3) Dr. Nikhil Agrawal (Dual Degree) 1310208, Design of Nearly Linear Phase Infinite Impose Response Filters using Evolutionary Techniques, Completed 15 July 2019 (with Dr Anil Kumar)
   (4) Dr. Santhos Kumar A. (Jointly), Fuzzy Min-Max Neural Networks for Pattern and Image Classification Submitted (18-11-2020) (with Dr Anil Kumar)
   (5) Dr. Smith Kashiram Khare (1822608), Robust Techniques for the Classification of Neurological States using EEG Signals Jan 2019 - May 2022
   (6) Kapil Gupta, Deep Learning frameworks for automated classification of Heart-related signals, submitted July 2020-March 2023
   (7) Anurodh Kumar (1912602) In Progress July 2019
   (8) Nakul Kishor Pathak, In Progress July 2020
2. M. Tech Supervision -
   (1) Khushnandan Rai (MTech-1310206) New Features for Classification of EEG Signals 18-08-2015 With Dr. Anil Kumar
   (2) Vipin Kumar Mishra (MTech-1410217) New methodologies for analysis and classification of EMG signals 2016 With Dr. Anil Kumar
   (3) Sumit Kumar Yadav (MTech-1510211) New algorithms based classification and analysis of EEG signals 12-05-2017 With Dr. Anil Kumar
   (4) Nagineni Sukumar (1612105) Method based on variational mode decomposition for classification of electromyogram signals 02-07-2018
   (5) S. V. Raghavendra Kommuri A new framework for image denosing using guided and diffusion filtering 15 july 2019, With Dr. Anil Kumar.
   (6)Mohammed Hasrat Mohani (1812204), Classification of motor imagery EEG signal for Brain-

Computer Interface application 2020 With Dr. Prabin Padhy.

3. B.Tech Supervision -
   (1)Gaurav Sahu, Nishant Chaurasia, Prem Prakash Suwalka (2011108) Time frequency analysis for classification of non-stationary signals 2014
   (2) P. B. Shruti, Line of sight and viewshed analsyis for radio links using digital geographical data 2014 (Coguide- Ajaze P. Khan)
   (3) Harshita Meena, Manish Gehlot, Yogit Kumar, Classification of EEG signals 2014.
   (4) A.R. Dwivedi, H. Bari, S. Nath, Analysis of focal and non-focal EEG signals using bivariate empirical mode decomposition 2015
   (5) Anchala Priya, Pooja Yadav Discrimination of alcoholic and normal EEG signal using EMD method 2016
   (6) Mayank Pawar, Mukesh Kumar, Vinod Kumar Meena, Breast cancer detection 2016.
   (7) Pragati Rani, Swati Walde Time Frequency Image based Features for Detection of Focal EEG signals 2016
   (8) M Divya Prakash (2014094) An Effective Brain MRI Image Segmentation Methodology 2017
   (9) P Uday Kiran (2014234) and N Abhiram (2014118) Tunable-Q Factor Wavelet Transform based Classification of ALS and Normal EMG signals 2017
   (10) Saad Ahmad (Roll no. 2014148) Shubham Agrawal (Roll no. 2014171) and Samta Joshi (Roll no. 2014242) Optimum Allocation Sampling - Empirical Mode Decomposition based classification of Environmental Sound 2017.
   (11) P J Sudharshan (Roll No. 2014120) Statistical Machine Learning - Application on Medical Imagery 2017
   (12) K Y V S PRIYANKA (2014224), ARAVAPALLI BHAVYA SRI (2014031), and ANALA HARI KRISHNA (2014022), TQWT Based Innovative Approach for Emotion Classification Using EEG Signals 2017
   (13) Yakshvender Pundir Study of PCB Assembly and Image Processing using MATLAB 2017
   (14)Anugya Pareta (2015038) Automatic Environment Sounds Classification Using Optimum Allocation Sampling 2018.
   (15)Shalu Chaudhary (2015229) A New Approach Towards Motor Imagery Tasks Based EEG Signal Classification 2018
   (16)MOGILI MANISHA (2015149) ECG signals and discovery of Arrhythmia using convolutional neural network. 2018
   (17) MAMTA SINGH (2015143) Noise Reduction in Imaging with Deep Convolutional Neural Networks (Co-guide Mr. Vijay B. Goudar) 2018
   (18)Chada Sravani (2015069) Physical action classification of surface EMG signals 2018

Administrative Responsibilities

1. Co-Coordinator of JOSAA and CSAB Sep 2022
2. Prof In Charge Communication Cell 19-08-2021-Till now
3. QIP Coordinator: All administrative works related to QIP 19-08-2021-Till now
4. Nodal Officer NKN 02-09-2021-Till now
5. Member of Institute Library Committee 1 July 2021- 30 june 2022
6. Faculty In-charge of Central Mess of IIITDM Jabalpur Since June 2016-Sep 2017.
7. Co-coordinator of Time table committee of IIITDM Jabalpur Since Jan 2016-July 2018.
8. Industry Cell committee of IIITDM Jabalpur Since Nov 2016-2018.

9. PBI Co-coordinator Committee member for PBI activities for students. IIITDM Jabalpur Feb 2017 to Feb 2019.
10. GEM Buyer for ECE Department IIITDM Jabalpur Since Nov 2019 to 20-09-2021.
11. Coordinator of Athletics in Gusto inter IIIT meet 29-02-2020 to 03-03-2020.

PROFESSIONAL SERVICE

Associate Editor: IEEE Sensors Journal Since 1 August 2020
Subject Editor-in-Chief: IET Electronics Letters 12 June 2020-till now
Subject Editor: IET Electronics Letters nov 2018-11 June 2020
Senior Member IEEE June 2020
Member IEEE 2018-June 2020
Special Issue: Current Trends in Cognitive Science and Brain Computing Research and Applications In Electronics Letters 2020
Referee Service: IEEE Signal Processing Letters, IEEE Transactions on Biomedical Engineering IEEE Trans on Information Technology in Biomedicine, Biomedical Signal Processing and control Journal of Medical Engineering and Physics, Computer Methods and Programs in Biomedicine, Applied Soft Computing, KSII Transactions on Internet and Information Systems, Health Information Science and Systems etc.

Workshops/Seminars Etc. Organized & Participated

1. Expert Talk Artificial Intelligence based healthcare systems, One Week High-End Workshop On Wearable Intelligent Devices: Next-Generation Technology (SERB Sponsored), SMart and Innovative Laboratory for Energy devices (SMILE), Indian Institute of Information Technology, Design and Manufacturing (IIITDM) Kancheepuram, Chennai, India 16-02-2023
2. Expart Talk on Signal processing and machine learning applications in healthcare system, Department of Electronics and Communication Engineering, Muthayammal Engineering College, Rasipuram (An Autonomous Institution) India 14-02-2023
3. Expert lecture on Internet of things in medical field in faculty Development Programme on Internet of things (IOT) organized by Sagar Institute of Research & Technology, Bhopal 26-28 Dec 2022
4. Expert Talk Recent Trends and Advancements in Computer Science & Engineering" (21st-25th November, 2022) AI Based Healthcare System wami Keshvanand Institute of Technology, Management & Gramothan (SKIT), Ramnagaria, Jagatpura, Jaipur, Rajasthan, India-302017 21 Nov. 2022
5. Expert Talk "International Conference on One Health and Translation Research in Neurosciences (SNCI-CON 2022) and the 36th Annual Meeting of Society for Neurochemistry India (SNCI)", from 10th -12th November, 2022, AI Based Healthcare System IIIT Nagpur 11 Nov. 2022
6. Session Chair on Biomedical Signal and Image Processing, 11th International Conference on Health Information Science (HIS 2021) Biarritz 28-30 nov 2022
7. Principle Coordinator in Joint FDP on Smart Healthcare Technologies: Opportunities & Challenges" from 25 July – 5 Aug, 2022 EICT Online Joint 25-7 to 5-8-2022.
8. Expert Talk, EICT, Join FDP, NITJ, IIIDMJ, NITP 02-8 Jan, 2022, AI Based Healthcare System, Online, 31 Jul. 2022
9. Expert Talk, EICT, Join FDP, NITJ, IIIDMJ, NITP 02-8 Jan, 2022, IOT Based Healthcare System, Online, 30 Jul. 2022
10. Keynote Speaker, Artificial Intelligence Application in Biomedical System, International Multidisciplinary Conference "International Conference on Emerging Trends in Multidisciplinary Research

and Innovation: ICETMRI- 2022" Organized by LCIT Group of Institute Bilaspur Chhattisgarh, India 19-20 April 2022

11. Expert Talk "Machine Learning in Biomedical Signals" Winter FDP on "Machine Learning Application in Signal Processing and Communication Engineering" EICT, IIT Guwahati 02-8 Jan, 2022
12. Expert Talk "Signal processing and machine learning applications in healthcare system, Deep Learning Model Application in healthcare system", AICTE Training and Learning (ATAL) FDP on "Deep Learning and Computer Vision" Manipal University 03-07 Jan. 2022
13. Expert talk Signal Processing and Machine learning application in healthcare 1 week workshop "Machine learning for signal processing and wireless networking" Delhi Technical University Delhi 24 Dec 2021.
14. Expert talk in Role of signal processing in IOT based healthcare systems ATAL FDP on "IoT in Healthcare" at the Indian Institute of Information Technology, Nagpur 15 Dec 2021.
15. Session Chair on signal processing, 10th International Conference on Health Information Science (HIS 2021) Melbourne, Australia, 25-10-2021
16. Session Chair on signal processing, IEEE International Conference on International Conference on Control, Automation, Power and Signal Processing (CAPS - 2021), 11 Dec 2021, IIITDM Jabalpur.
17. Expert talk Advances in Electrical and Electronics Engineering for Healthcare System Development "Adani Institute of Infrastructure Engineering, Ahmedabad, Sponsored by GUCOST on August 27, 2021 and August 28, 2021.
18. Expert talk on Machine learning Algorithm and it's Application in Biomedical, G. H. Raisoni College of Engineering, Nagpur 22-01-2021
19. Expert talk on Artificial Intelligence Application in Biomedical System, AICTE Training and Learning (ATAL) Academy Sponsored Online Faculty Development Programm, Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT), Ramnagaria, Jagatpura, Jaipur 04-Jan to 8 Jan 2021.
20. Expert talk AICTE sponsored STTP on Applications of AI in Electrical & Electronics Artificial Intelligence Application in Biomedical System LNCT Bhopal 4-5 Nov 2020
21. Expert talk ECE andCS Machine Leaning application in healthcare G. H. Raisoni College of Engineering, nagpur 24-Oct-20
22. Session Chair on signal processing, IEEE International Conference on Adnvanced Communication Technologies and Signal Processing (ACTS -2020), 4-6 Dec 2020, NIT Silchar.
23. Expert talk on Signal Processing, webinar Short Term Training Program (STTP) under RGPV TEQIP III, IGEC Sagar 1-2 September, 2020
24. Expert talk on Recent Trends of Signal Processing and Machine Learning with Biomedical Application, Short Term Training Program (STTP) under RGPV TEQIP, IIST Indore July 4-5, 2020
25. Expert talk on Non-stationary signal processing for Computer aided design, under RGPV TEQIP III, BU Jhansi June 16, 2020
26. Expert talk on Identification of neurological disorders using EEG signals, in Sagar Institute Bhopal 30-04-2020
27. Coordinator of AICTE (QIP) Sponsored Short term course on, ARTIFICIAL INTELLIGENCE TECHNIQUES: NEURAL NETWORKS, SUPPORT VECTOR MACHINES and OPTIMIZATION ALGORITHMS, IIITDM Jabalpur 26-03-2020 to 30-03-2020.
28. Coordinator of AICTE (QIP) Sponsored Short term course on, EMERGING TRENDS OF SIGNAL

AND IMAGE PROCESSING, IIITDM Jabalpur 21-02-2020 to 26-02-2020.

29. Keynote Speaker International Conference On Access To Recent Advances In Engineering And Digitalization March 5-7, 2020, Kayseri, Turkey
30. Expert talk on Evoluationary technique in research and its application with MATLAB in Faculty Development Programme sponsored by ICT in GGITS Jabalpur 17-21 DEC 2019.
31. Expert talk on signal processing under TEQIP III in Shri Shankaracharya College of Engg & Tech, Bhilai 14 Jan 2019
32. Coordinator of MEITY Govt of India Sponsored faculty Training on DSP & Sensor under ICT Academy, IIIT Jabalpur 10-12-2018 to 15-12-2018.
33. Coordinator of AICTE (QIP) Sponsored Short term course on Emerging nano-electronics devices modelling, simulation and applications, IIITDM Jabalpur 26-06-2017 to 30-06-2017.
34. Expert Lecture: Signal Processing techniques for 5G ISRO Sponsored National Workshop on Different channel coding techniques for 5G network and future implementation, IES College of Technology, Bhopal 19-08-2017 2017
35. Expert lecture on Computer Aided Design based Recent Trends for Diagnosis of Diseases, in National Pharmacy Week 2016 on K.N Polytechinque
36. Co-coordinated national conference Recent Trends in Instrumentation, Communication and Microelectronics, at Shri Vaishnav Institute of Technology and Science, Indore 2010
37. Co-coordinated national conference Recent Trends in Instrumentation, Communication and Microelectronics, at Shri Vaishnav Institute of Technology and Science, Indore 2010
38. Organized one day Workshop on MATLAB application in signal processing, at Department of Electronics and Communication, Sushila Devi Bansal College of Technology Indore, on Feb 2014.
39. Guest lecture on Recent trend of biomedical signal processing, at Department of Electronics and Communication, IPS Academy Indore, on Feb 2014.
40. Participated as a active member of IIT Indore team in "Paniit Global Conference 2012,"at Science City Auditorium, Kolkata, India from December 7-9, 2012.
41. Participated in international workshop on Joint Indo-Canadian meeting on "Development of Low-Cost Lab-on-a Chip Medical Devices for Health Monitoring,"held under the department Electrical Engineering at Indian Institute of Technology, Bombay from January 9-11, 2011.
42. Participated in workshop on "MATLAB Application in Modeling and Simulation of Engineering Systems,"held under the department EC at S.V.C.E. Indore from 19/02/10 to 21/02/10.
43. Participated in workshop on "National Workshop on Enhancing Effectiveness of Classroom Teaching in Engineering and Management Education,"sponsored by AICTE new Delhi at Shri Vaishnav Institute of Technology and Science, Indore on 6-7 Nov.2009.
44. Participated in workshop on "Introduction to MATLAB and Simulink," held under the department EEE at L.N.C.T. Indore from 7/10/09 to 10/10/09.
45. Participated in workshop on "MATLAB,"ATHENA held at SIRT Bhopal (M.P) on 24 and 25 Apr.2009.