

2022 International Conference on Signal and Information Processing (IConSIP 2022)

**Pune, India
26-27 August 2022**



**IEEE Catalog Number: CFP2295L-POD
ISBN: 978-1-7281-6886-9**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***** *This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP2295L-POD
ISBN (Print-On-Demand):	978-1-7281-6886-9
ISBN (Online):	978-1-7281-6885-2

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Audio Processing for Tones Validation Using Deep Learning	1
<i>Padmini Arun Pandhare, Vaishali Ingale</i>	
Effective Generation of Visual Questions	6
<i>Charulata Patil, Aditya Abhyankar</i>	
Real-Time EAR Based Drowsiness Detection Model for Driver Assistant System.....	11
<i>Parakram Singh, Shivanshu Mahim, Surya Prakash</i>	
Elicitation of Intracerebral Hemorrhage Using Deep Learning.....	15
<i>Saraswati Patil, Sangita M. Jaybhaye, Ashwini Mamulwar, Ayush Rambhad, Mihir Prajapati, Suresh Mante</i>	
Underwater Image Enhancement Using Color Constancy Via Homomorphic Filtering and Depth Estimation.....	22
<i>Vaithiyanathan Dhandapani, Manigandan Muniraj, Manju I</i>	
Drone Detection Using YOLO and SSD a Comparative Study	28
<i>Atharva Pansare, Nidhi Sabu, Himanshi Kushwaha, Vedika Srivastava, Nitin Thakur, Kanishk Jamgaonkar, Md. Zeeshan Faiz</i>	
Prediction of COVID-19 & Pneumonia Using Machine Learning & Deep Learning Model.....	34
<i>Prajakta Mhatre, Kalyani Bhole</i>	
Fusion Based Underwater Image Enhancement and Detail Preserving.....	40
<i>Vaithiyanathan Dhandapani, Manigandan Muniraj, Manju I</i>	
Deep Learning Based BCI for Enhancing Quality of Life of Senior Citizens.....	46
<i>Rupali Pawar, Prachi Mukherji</i>	
FPGA Based Feature Extraction in Real Time Computer Vision-A Comprehensive Survey	52
<i>Isha Gupta, Deepti Prit Kaur</i>	
Enhancement of Liver Ultrasound Images by Guided Image Filtering Technique	59
<i>Anjna Kumari, Nishant Jain, Vinod Kumar</i>	
Exploration of Horizontal and Vertical Components in Polarimetric Decomposition Based on Volume Scattering.....	64
<i>Dipanjan Dutta, Tamesh Halder, Arindam Basak, Arundhati Mishra Ray, Debashish Chakravarty</i>	
Audio Source Count Estimation Using Deep Learning.....	68
<i>Shrinivas Mahajan, Swapnil Mali, Majeed Mulla, Vyankatesh Goski, Gaurav Vyas</i>	
Detection of Pneumonia from X-Ray Images Using Eigen Decomposition and Machine Learning Techniques.....	74
<i>Subrat Kabi, Dipti Patra, Ganapati Panda</i>	
Effective Segmentation and Classification of Brain Tumor Using SVM Classifier in MR Images	79
<i>Vaidehi Sunil Satushe, Vibha Vyas</i>	
Implementation of Reduct and Core Features of Rough Set Theory on FPGA.....	84
<i>Shubhangee Kishan Varma, Chinmay Dhole, Vibha Vyas, Vanita Agarwal</i>	

Audio Based Detection of Saw Blade Sharpness Using Machine Learning.....	89
<i>Preeti M Bankar, S. M. Kakade, Piyush Shukla, Abhishek Gupta, Milind Bagewadi, R. S. Kulkarni</i>	
Performance Analysis and Evaluation of Estimator for RF Cavity Detuning Measurement.....	94
<i>Rajesh T. Keshwani, S. Mukhopadhyay, Ravindra D. Gudi, Gopal Joshi</i>	
Machine Learning Based Melanoma Skin Cancer Identification Using Feature Fusion of Thepade's TSBTC and Bernsen Thresholding.....	100
<i>Sudeep D. Thepade, Amruta Aher</i>	
Machine Learning-Based Melanoma Skin Cancer Identification Using Feature Fusion of Thepade's SBTC (TSBTC) and Niblack Thresholding	106
<i>Sudeep D. Thepade, Amruta Aher</i>	
How Can Emotions Be Classified with ECG Sensors, AI Techniques and IoT Setup?	112
<i>Varsha K. Patil, Vijaya R Pawar</i>	
RBFF: Rocker Bogie Fire-Fighter.....	118
<i>Kunal Desarda, Yash Oza, Shibiludheen, Priyanka Bagul</i>	
Speaker Identification and Verification Using Deep Learning.....	123
<i>Naveen R, Jeevan Reddy C, Rishik Tanguturu, Anand Kumar M</i>	
Smart and Lucrative Waste Segregation.....	129
<i>Atharva Deshpande, Isha Birla, Sharvari Deshpande, Yashodhara Haribhakta, Deepalaxmi Niture</i>	
The EEG Study of Whole Body Vibration Model in Mining Industry.....	134
<i>Tamesh Halder, Dipanjan Dutta, Arindam Basak, Debashish Chakravarty</i>	
Sensitivity Enhancement of SPR Based Sensor for Detection of Urine Glucose	138
<i>Anamika Kumari, Kirti Waybase, Vibha Vyas, Rajshri Mahajan</i>	
Skin Cancer Detection from RGB Images Using the LBP and HOG Texture Feature Descriptors with Help of Machine Learning Algorithm.....	142
<i>Divyesh Khanvilkar, Abhishek Bhatt</i>	
Comparative Analysis of OFDM Signal on the Basis of Different Modulation Techniques	147
<i>Yogita Dinkar Kapse, Shripad P. Mohani</i>	
Motor Imagery Based EEG Signal Classification Using Multi-Scale CNN Architecture	152
<i>Katta Pratyusha, Kshetrimayum Shalu Devi, Samit Ari</i>	
Adversarial Synthesis Based Data Augmentation for Speech Classification	157
<i>Parth Shastri, Chirag Patil, Poorval Wanere, Srinivas Mahajan, Abhishek Bhatt</i>	
Human Activity Recognition Using 1D-CNN and Stacked LSTM.....	163
<i>Sheetal Waghchaware, Radhika D. Joshi</i>	
Image Processing Based ML Framework for Leaf Classification and Disease Detection.....	168
<i>Abhinav Venkatadri, Akhila Jagarlapudi, Pranjal Ranjan, Rizwan Ahmed Ansari</i>	
Determining Tree Height and Width Using GPS-Enabled UAV Imagery	172
<i>Tamesh Halder, Arnab Dutta, Kousik Biswas, Rintu Kumar Gayen, Arundhati Mishra Ray, Debashish Chakravarty</i>	

MGF Based Analysis of Interference Limited System Over Fisher-Snedecor Fading Channels	177
<i>Anjali Singh, Hari Shankar</i>	
Design of a New Floating Memristance Based on Current Feedback Opamps Using the Commercially Available IC's	181
<i>Divya Dhama, Shivam Saini</i>	
Free Space Optical Communication System: Impact of Weather Conditions	186
<i>Issak Hassan, Anup Mandpura</i>	
Artificial Intelligence and Internet of Things Analysis of Solar-Based Internet of Energy Battery Management System Electric Vehicles	191
<i>Sukhmeet Singh, L. Manjunath, C. Sandhya, Deepiti Khubalkar, Shilpa Sharma, G. Ramachandran, G. Sureshkumar</i>	
Modeling & Simulation of Electric Vehicle Using Drive Cycle Signals	195
<i>Shubham Madhavi, Radhika D. Joshi</i>	
Ocular Disease Recognition Using Deep Learning	200
<i>Kuldeep Vayadande, Varad Ingale, Vivek Verma, Abhishek Yeole, Sahil Zawar, Zoya Jamadar</i>	
Credit Card Fraud Detection Using Bagging and Boosting Algorithm	207
<i>Kanishka R. Deogade, Dhanashree B. Thorat, Snehal V. Kale, Seema Rajput, Harjeet Kaur</i>	
Optimization of Task Offloading for Smart Cities Using IoT with Fog Computing- A Survey	211
<i>Ch Rajendra Prasad, Sandeep Kumar V, P Ramchandar Rao, Sreedhar Kollem, Srikanth Yalabaka, Srinivas Samala</i>	
Ensemble Classification Model for Prediction of Heart Disease.....	216
<i>Asawari Anant Badkundri, Supriya Kelkar</i>	
Covid-19 Detection Using Deep Learning	222
<i>Chitra Chandrashekhar Patgar, Diksha Dinesh Patil, Shweta Hemant Rahate, Santosh Randive</i>	
Foreign Object Detection and Classification Using AI and ML for Radio Images	227
<i>Prabuddha Gacche, Manesh Kokare, S. M. Rathod, K. Arulprasath, Suryakant Rathod, Ajay Sharma</i>	
Multiple Target Vital Sign Detection Using Ultra-Wideband Radar	232
<i>Asmita Wankhade, Abhijeet V. Nandedkar, S. M. Rathod, Yashodip Amritkar, Suryakant Rathod, Ajay Sharma</i>	
Drone Based Object Detection Using AI.....	236
<i>Rohit Jadhav, Rajesh Patil, Akshay Diwan, S. M. Rathod, Ajay Sharma</i>	
United Neurological Study of Disorders: Alzheimer's Disease, Parkinson's Disease Detection, Anxiety Detection, and Stress Detection Using Various Machine Learning Algorithms.....	242
<i>Sahaja Dixit, Akash Gaikwad, Vibha Vyas, Mahesh Shindikar, Ketaki Kamble</i>	
Empirical Study of Stacked Model for Predicting Various Data.....	248
<i>Unmesh R. Bhosale, Mukul S. Sutaone, Meenal Narkhede</i>	
Configuring an Intelligent Reflecting Surface Using Strongest Tap Maximization Heuristic Technique	252
<i>Krishna Teja Yadav Ch T, Rahul Tiwari, Venkateswaran K</i>	

Through Wall Target Tracking Using Ultra-Wideband Radar	257
<i>Dhanashri H. Nandre, Rohin Daruwala, S. M. Rathod, P. Gaikwad, Suryakant Rathod, Ajay Sharma</i>	
Area Coverage Analysis of Low Altitude UAV Bases Station Using Statistical Channel Model.....	261
<i>Ankita K. Patel, Radhika D. Joshi</i>	
Design and Development of a Patient-Specific Surgical Guide for Free Fibula Flap Surgery.....	267
<i>Aishwarya Phulpagar, Rohini Mudhalwadkar, Priyank Yeolekar</i>	
A Systematic Approach for Design of Patient Specific Surgical Guide (PSSG) for Oral Maxillofacial (OMF) Surgery Using 3D Imaging	273
<i>Prajakta Mhatre, Kalyani Bhole, Priyank Yeolekar</i>	
Current Advancement and Progress in BioFET: A Review	279
<i>Ananya Garg, Ratneshwar Kumar Ratnesh, Rajeev Kumar Chauhan, Neha Mittal, Hari Shankar</i>	
An Improved Method for Speech Enhancement Using Convolutional Neural Network Approach	286
<i>Mahesh Kumar T N, Pradyoth Hegde, Deepak K T, A V Narasimhadhan</i>	
Operator Motion Comparison with Standard Using Computer Vision and Deep Learning	292
<i>Ashutoshkumar A. Yadav, Yuga Balasaheb Kadam, Sudhir D. Agashe, Mukul S. Sutaone</i>	
Image Retrieval Using Otsu and Thepade's Sorted Block Truncation Coding Based Color Features.....	297
<i>Jaya H. Dewan, Sudeep D. Thepade</i>	
Vocal/Music Classification Using Incremental Learning Approach	303
<i>Anand Pol, Bakul Gohel, Manish Khare</i>	
S-VSUM: Static Video Content SUMmarization Using CNN	308
<i>Ashvini Tonge, Sudeep D. Thepade</i>	
Resource Allocation Scheme for Wireless Sensor Networks: Machine Learning Approach	313
<i>Gururaj S. Kori, Mahabaleshwar S. Kakkasageri</i>	
Gesture Control System: Using CNN Based Hand Gesture Recognition for Touch-Less Operation of Kiosk Machine	318
<i>Mahendra Salunke, Nikhilesh Kulkarni, Hitesh Yadav</i>	
Breast Cancer Detection by Data Visualization and Feature Selection Using XG Boost Algorithm	324
<i>Sanket Bose, Krupali Gaynar, Satya Prakash Singh</i>	
M-Trust Based Security Protocol (MTSP) for Confidential Data Forwarding in IoT	330
<i>Renjith P N, Ramesh K</i>	
Piano Notes Recognition Using Digital Signal Processing	337
<i>Sayali Gadre</i>	
Video Captioning Using Deep Learning and NLP to Detect Suspicious Activities	342
<i>Santuk Shingare, Yashodhara Haribhakta, Dhananjay Rajmane</i>	
Channel Estimation Techniques in Wireless Communication.....	347
<i>Gayatri Rajaram Deshmukh, Rajshri Mahajan</i>	
Teat and Udder Disease Detection on Cattle Using Machine Learning	350
<i>Srivali M R, Vishnu N K, Kanchana V</i>	

Big-O Time Complexity Analysis of Algorithm	355
<i>Swapnil Phalke, Yogita Vaidya, Shilpa Metkar</i>	
Design and Implementation of Different Multiplier Techniques and Efficient MAC Unit on FPGA.....	360
<i>Ashish S. Phuse, Pankaj P. Tasgaonkar</i>	
Suspicious Vehicle Recognition Using Number Plate	365
<i>Vaidehi Jagtap, Dhananjay Rajmane, Vidya N. More, Rajshri C. Mahajan</i>	
Person Following Robot Based on Real Time Single Object Tracking and RGB-D Image.....	370
<i>J. P. Kulkarni, P. D. Pantawane</i>	
Stitching Micro Images of PCB's Using Computer Vision System.....	375
<i>Mohini Lakhe, Pratibha Shinghare</i>	
Detection of Inter-Turn Short Circuit in Permanent Magnet Synchronous Motor Using Machine Learning	380
<i>Prajakta Patil, Sunil B. Mane, Lohit Dhamija</i>	
Simulation of Speech Enhancement Algorithms and Its Performance Comparison.....	386
<i>Sayli Sabnis, Vibha Vyas, Hemangi Shinde</i>	
Model Compression for Non-Sequential and Sequential Visual Pattern Recognition Networks — a Hybrid Approach.....	391
<i>Seema Bhalgaonkar, Mousami Munot, Alwin Anuse</i>	
Low-Cost Embedded System Framework for Industrial IoT Solutions	397
<i>Surendra Gayke, Digambar Patil, D. N. Sonawane, V. S. Vyas</i>	
Ground Traversability Estimation for Quadruped Robot with Modified DWA Algorithm.....	403
<i>D. S. Dhande, S. S. Ohol</i>	
Feature Representation Techniques for Hate Speech Detection on Social Media: A Comparative Study.....	408
<i>Vaishali U. Gongane, Mousami V. Munot, Alwin Anuse</i>	
Contactless Mask Monitoring and Biometric Attendance System	414
<i>Akriti Bhardwaj, Arnima Mehta, Anirudha Manohar Gaikwad, Vibha Vyas, Rajshri Mahajan</i>	
IOT Based Road Traffic Monitoring System Using Energy Efficient Routing Scheme	419
<i>Himanshu Monga, Dikshant Gautam, Raksham, Shakshi Soni, Divya Bharti</i>	
Robust 3D Reconstruction Pipeline with Relocalization for RGB-D Cameras	423
<i>Tanaji Umaji Kamble, Shrinivas Padmakar Mahajan, Shrikrishnakumar Arutwar</i>	
Epileptic Seizure Classification Using Deep Learning Technique.....	429
<i>Shubham Dhone, Shilpa Metkar, Rashmika Patole, Dhanalekshmi P. Yedurkar</i>	
Machine Learning Approach for Estimation of High Acquity ECG Monitoring System	434
<i>Shiwani Nikhare, Uttam Chaskar, Surabhi Misar</i>	
Text Analysis and Classification Using Topic Modeling	440
<i>Shivani Patel, Rashmika Patole, Shilpa Metkar</i>	
Analysis of Transform Unit of HEVC and Earlytermination of Partitions.....	446
<i>Shraddha P. Patil, Yogita M. Vaidya, Shilpa P. Metkar</i>	

Author Index