

2023 10th International Conference on Signal Processing and Integrated Networks (SPIN 2023)

**Noida, India
23-24 March 2023**

Pages 1-438



**IEEE Catalog Number: CFP23SPJ-POD
ISBN: 978-1-6654-9100-6**

**Copyright © 2023 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:	CFP23SPJ-POD
ISBN (Print-On-Demand):	978-1-6654-9100-6
ISBN (Online):	978-1-6654-9099-3
ISSN:	2688-7681

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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Regional Analysis of ESM Models Using Bias Corrected Spatial Disaggregated Superresolution Convolutional Neural Networks	1
<i>Akash Awasthi</i>	
Hybrid Multi-Objective Constrained Optimization Based on Feasibility Segregation, Non-dominated Sorting and Crowding Distance.....	7
<i>Apurba Bikash Kalita, Subhash Chandra Rajbongshi, Gaurav Trivedi</i>	
Analysis of Crop Leaf Image Classification Using Deep Learning Models Over Novel Dataset	14
<i>Watan Kishor Varma, Vipin Kumar</i>	
Design of High Gain Metasurface Antennas Using Hybrid Atomic Orbital Search and Human Mental Search Algorithm for IoT Application.....	20
<i>Penki Rohit, Amlan Datta, Moturi Satyanarayana</i>	
Investigation of Deep Learning Models for Vehicle Damage Classification.....	25
<i>Aaron Rasheed Rababaah</i>	
DQPSK Based Hybrid VCSEL-SMF-FSO Link for Gigabit PON.....	31
<i>Kirti Dalal, Shubham Kukreti</i>	
Tunable LSPR in Asymmetric Plasmonic Bowtie Nanostructures	36
<i>Kirti Dalal, Yashna Sharma</i>	
A Fourier Domain Feature Approach for Human Activity Recognition & Fall Detection	40
<i>Asma Khtun, Sk Golam Sarowar Hossain</i>	
Study of Thermocouple Degradation Through Accelerated Aging Under Corrosive Environment	46
<i>Valipi Dinesh Kumar, Anindya Bhattacharyya, Rajendra Prasad Behera, K. Prabakar</i>	
Development of an Modified Ant Colony Optimization Algorithm for Solving Path Planning Problems of a Robot System	52
<i>Sudeep Sharan, Juan José Domínguez-Jiménez, Peter Nauth</i>	
Cross-Terms Reduction in WVD Using Sliding Window-based Variational Mode Decomposition	58
<i>Kazi Newaj Faisal, Rishi Raj Sharma</i>	
Semantic Communications Enabled Intelligent Wireless Networks.....	64
<i>Sridhar Iyer, Rahul Pandya, Rajashri Khanai, Dattaprasad Torse, Krishna Pai, Rakhee Kallimani</i>	
Fog Computing Based Distributed Denial of Service Attack Detection Method for Large-Scale Internet of Things	70
<i>S Prabavathy, I. Ravi Prakash Reddy</i>	
A Deep Hybrid GNN Based on Edge-Conditioned and Graph Isomorphism Network Convolutions for PC-3 Anticancer Screening.....	76
<i>Adrian S. Remigio, Jeffrey Aborot, Jonel Hong</i>	
Examining R Peak Changes in Ischemic Condition Using Random Forest Classifier Under Stress Test ECG	82
<i>Rajeswari Bandyopadhyay, Bala Chakravarthy Neelapu, Kunal Pal, J. Sivaraman</i>	

A Comparative Analysis of Speech Enhancement Techniques Based on Sparsity Features.....	87
<i>Raj Kumar, Manoj Tripathy, R. S. Anand</i>	
Study of Novel Small-Signal JFET Amplifiers in Sziklai Pair Topology	93
<i>Sachchidanand Shukla, Syed Shamroz Arshad, Geetika Srivastava, Aditya Kumar Sharma, Sandeep Kumar Pandey, Sachchida Nand Singh, Pratima Soni</i>	
Correlation Study of Service Order Reports and Quality Control Tests in a MRI Scanner	99
<i>Camila H. Murata, Thiago M. B. Farias, Kellen A. C. Daros, Oswaldo S. Fontoura, Henrique Carrete</i>	
Quality Evaluation of Laparoscopic Videos Using the Interdependency of Luminance and Texture Maps	103
<i>Sria Biswas, Rohini Palanisamy</i>	
SentiMatch: Sentiment Analysis of Multi-Modal Social Media Posts	109
<i>Abhishek Yadav, Nisarg Jain, Lakshay Sharma, Preety Singh</i>	
DeepNet-Gait: Human Identification by Gait Using Convolutional Neural Network Model	115
<i>Veenu Rani, Munish Kumar</i>	
Spider Monkey Optimization Based Resource Provisioning in Cloud Computing Environment	121
<i>Archana, Narander Kumar</i>	
Handwritten Devanagari Word Detection and Localization Using Morphological Image Processing	126
<i>Mamta Bisht, Richa Gupta</i>	
Automatic Seizure Detection Using Rhythmicity Spectrograms and Inception-V3 Architecture	131
<i>Esha Gupta, Muskan Gupta, Rishita Anand Sachdeva, Palak Handa, Nidhi Goel</i>	
Improving the Classification of Network Slice Using SMOTETomek and Machine Learning Models in 5G Networks.....	137
<i>Anjali Rajak, Rakesh Tripathi</i>	
Novel Method for Detection of Alzheimer’s Disease Using Gini Impurity Based Decision Tree Model	142
<i>Abhijit Chandra, Rounak Chakraborty, Saheli Nandi, Biswambhar Porel</i>	
Analysis of i-PPG Signals Acquired Using Smartphones for the Calculation of Pulse Transit Time and Oxygen Saturation	148
<i>Dharshini A S Kaviya, J B Jeeva</i>	
Integration of Fiber Optics and Free Space Optics: A Hybrid Approach for Last Mile Connectivity	154
<i>Harjeevan Singh</i>	
Paper-Based Two-electrode Sensor Fabricated by Pencil Drawing for Glucose Sensing.....	159
<i>Amarpriti Singh, Manabendra Bhuyan</i>	
Hexagonal Lattice Twin Core Photonic Crystal Fiber Based Chemical Sensor	164
<i>Vishal Chaudhary, Sonal Singh</i>	
Performance of Load Frequency Control of Two-Area Power System by Using Proportional Integral Derivative Controller	168
<i>Arun Kumar Maurya, Hera Khan, Hemant Ahuja</i>	
Pulmonary Nodules Binary Classification Using CNN and LSTM	174
<i>Smridhi Gupta, Arushi Garg, Vidhi Bishnoi, Nidhi Goel</i>	

A Vision-Based Litter Detection and Classification Using SSD MobileNetv2	180
<i>Archana Balmik, Subhasish Barik, Mrityunjay Jha, Anup Nandy</i>	
Multi Spectral Feature Extraction to Improve Lung Sound Classification Using CNN.....	186
<i>Rishabh, Dharendra Kumar</i>	
Multiple Image Watermarking in YCbCr Color Space Using Schur-SVD-DCT in Wavelet Domain and Its Authentication Using SURF	192
<i>Divyanshu Awasthi, Priyank Khare, Vinay Kumar Srivastava</i>	
A Deep Analysis of Transfer Learning Based Breast Cancer Detection Using Histopathology Images	198
<i>Md Ishtyaq Mahmud, Muntasir Mamun, Ahmed Abdelgawad</i>	
LCDctCNN: Lung Cancer Diagnosis of CT Scan Images Using CNN Based Model.....	205
<i>Muntasir Mamun, Md Ishtyaq Mahmud, Mahabuba Meherin, Ahmed Abdelgawad</i>	
MobileNetV3 Based Classification Model for Diabetic Retinopathy	213
<i>Manish Prajapati, Santos Kumar Baliarsingh, Jhalak Hota</i>	
Miniaturized Balanced Bandpass Filter with Three Transmission Zeros	218
<i>Mingen Tian, Zhihe Long, Tianliang Zhang</i>	
Application of Deep CNN for Image-Based Identification and Classification of Plant Diseases	224
<i>Ruqaiya Khanam, Gitanjali Mehta</i>	
Design and Implementation of Online Legal Forum to Complain and Track UGC Cases Using NextJs and GraphQL	230
<i>Om Bhamare, Pratik Gite, Aman Lohani, Kushal Choudhary, Jagdish Choudhary</i>	
Using Deep Learning to Analyse Behaviour in Video Surveillances	235
<i>Aarya Makwana</i>	
Whitening Transformation of I-Vectors in Closed-Set Speaker Verification of Children.....	243
<i>Kodali Radha, Mohan Bansal, Rajeev Sharma</i>	
Analyzing the Fuel Economy of Hybrid Electric Vehicle for Different Road and Traffic Conditions	249
<i>Arunava Mukhopadhyay, Hemant Ahuja, Bedatri Moulik</i>	
Automated Static Malware Analysis Using Machine Learning.....	255
<i>Bhawit Balodi, Srijan Sharma, Anil Kumar Shukla, Bhupendra Singh</i>	
Estimation of Respiratory Rate from a Corrupted PPG Signal Using Time-Frequency Spectrogram.....	259
<i>Pankaj, Ashish Kumar, Rama Komaragiri, Manjeet Kumar</i>	
Cyberbullying and Suicide Ideation Detection Via Hybrid Machine Learning Model.....	265
<i>Ajey Shakti Mishra, Akanksha Srivastava, Aashi Rohit Modi, Ashish Pandey</i>	
A Novel Metaheuristic Approach for Lifetime Enhancement of 3-Tier Wireless Sensor Network.....	271
<i>Aman Yadav, Anmol Pandey, Anujaya Singh, Bishnu Deo Kumar, Ashish Pandey</i>	
Multiresolution Based Neutrosophic Framework for Building Footprint Identification Using Remote Sensing Images	276
<i>Akshat Ramachandran, Rizwan Ahmed Ansari</i>	
Approaches Towards Fake News Detection Using Machine Learning and Deep Learning	280
<i>Nitish Kumar, Nirmalya Kar</i>	

Monte Carlo Simulation of the Non-Systematic and Systematic Polar Codes	286
<i>Navin Kumar, Deepak Kedia, Gaurav Purohit</i>	
A Novel Attention Heat Map-Based Video Anomaly Detection Framework	291
<i>Preeti Sharma, M. Gangadharappa</i>	
GUI Based Machine Learning Algorithms to Predict Alzheimer’s Disease	296
<i>Sravya Ravi, Venkata Ratna Prabha K, Yasaswini Satuluri, Shaik Mansur Ali, Chandini Nekkanti, P Ramesh</i>	
Transfer Learning-Based Rich Feature Analysis on Leather Images for Species Prediction.....	301
<i>Anjali Varghese, Malathy Jawahar, A Amalin Prince</i>	
Amended Feeding for Deep Knowledge Tracing	306
<i>Jose Naranjo, Changsheng Zhu, Veronika Stoffova</i>	
Design and Development of Electronic Power Conditioner for Rubidium Atomic Frequency Standard.....	312
<i>Keya Shukla, Trapti Katiyar, Jayesh Thakkar, Kaushik Kumar Parikh</i>	
Swarm Intelligence Algorithms for Profit Maximization and Delay Minimization in Internet Data Centers.....	317
<i>Haritha Paul, S. Mini</i>	
Designing and Performance Analysis of Low Insertion Loss with Polarization-Insensitive FSS-antenna-radome System for Airborne Applications	323
<i>Maxon Okramcha, Malay Ranjan Tripathy</i>	
Discrimination of Ventricular Arrhythmias Using Machine Learning Models.....	329
<i>Mohammed Fazil K, Sidharth K, B Sanjay Kumar, Lakkakula Kavya, Yepuganti Karuna, Saladi Saritha</i>	
Semi-Autonomous Robust Control Design for a Wall Climbing-type Micro Aerial Robot in Outdoor Scenario.....	335
<i>Sandeep Gupta, Tushar Sandhan, Suvendu Samanta</i>	
Design of Network Rejoin Policy in Multi-UAVs Flying Ad-hoc Network and Robust Tracking Control Scheme	341
<i>Sandeep Gupta, Suvendu Samanta, Samrat Dutta</i>	
Real-Time Deployment and Test Set Analysis of Automatic Colonoscopy Polyp Identification Architecture	346
<i>Nikita Garg, Palak, Nidhi Goel</i>	
Performance Analysis of IIC Techniques for Brain MR-Images	351
<i>Pooja Thakur, Neelam Syamala, Yepuganti Karuna, Saladi Saritha</i>	
Water Quality Prediction Using Machine Learning Techniques.....	358
<i>Nithya Sankeerthana Pagadala, Moulika Marri, Akshaya Myla, Bhargav Abburi, K. Shri Ramtej</i>	
ISL2022: A Novel Dataset Creation on Indian Sign Language	363
<i>Poornima B V, Rakshitha R, Srinath S, Rashmi S</i>	
FPGA Implementation of a High Throughput Low Power Advanced Encryption Standard (AES-128) Cipher.....	367
<i>Jaideep Kala, Jeebananda Panda, Lavi Tanwar</i>	

Quantitative Analysis of EEG Neurofeedback Using Optimized 1-DPSO.....	373
<i>Ms. Kiran Waghmare, Meenakshi Malhotra, Reeja S R</i>	
Kannada Word Detection in Heterogeneous Scene Images.....	379
<i>N Shikha, R Pranav, Nidhi R Singh, V Umadevi, Muzammil Hussain</i>	
DoS Attack Detection in Wireless Sensor Networks (WSN) Using Hybrid Machine Learning Model	384
<i>G. Sankara Rao, Muvvala Harshitha, Vuriti Rama Joshitha, Saripaka Srilakshmi Sravya, Mutcha Vishnu Priya</i>	
Handwritten OCR for Word in Indic Language Using Deep Networks	389
<i>Manish Kumar Gupta, Surya Vikram, Siddharth Dhawan, Ajai Kumar</i>	
Tender Coconut Classification Using Decision Tree and Deep Learning Technique	395
<i>Ishani Bhat, V Umadevi, Nishchitha Jagadeesh, Savithri Bhat, Rashmi S Shenoy</i>	
Production Prediction Using Machine Learning	399
<i>Rakshit Batra, Prateek Abbi, Rohan Sharma, Hardik Agarwal, Paurush Bhulania</i>	
Skin Lesion Segmentation Using Residual U-NET.....	405
<i>S. Manivannan, N. Venkateswaran</i>	
Versatile VM Universal Biquad Filter Employing OTAs and Its Application.....	410
<i>Devanshu Saxena, M. Nizamuddin</i>	
Image and Video D'encryption Using Gray Pattern Based Algorithm.....	415
<i>Rohith Malkuchi, Priyanka Peri, Usha Kamle</i>	
Deep CNN and LSTM Architecture-Based Approach for COVID-19 Detection.....	421
<i>Sourabh Mehta, Utkarsh Rastogi, Pulkit Dwivedi</i>	
Dynamic Performance Enhancement of Fractional-Order PID Controller Using a High-Level Ensemble Swarm Intelligence Method.....	427
<i>Mou Das Mahapatra, Shibendu Mahata, Ritu Rani De Maity, Rajani Kanta Mudi, Chanchal Dey</i>	
Coordinated Design of Damping Controllers Using Grey Wolf Optimization Algorithm.....	433
<i>Manoj Kumar Kar, A A Godbole, Ruchika S Meshram, Pranali A Krishna, Shivam V Patil, Rohan S Sonawane</i>	
Application of Machine Learning Algorithms in Medical Image Analysis: A Case Study for Breast Cancer Detection.....	439
<i>Aashi Tripathi, Shamama Anwar</i>	
A Keyframe Extraction Using HDBSCAN with Particle Swarm Optimization.....	445
<i>M Dhanushree, R Priya, P Aruna, R Bhavani</i>	
Improved Transfer Learning Approach for Diabetic Retinopathy Screening	451
<i>Surbhi Dhir, Ruchika Bala, Nidhi Goel, Arun Sharma</i>	
Classification Model Using CNN and LSTM for Cow Pregnancy.....	457
<i>Bhavik Singla, Anuj Kumar Jain, Raj Gaurang Tiwari, Vinay Kukreja, Vikrant Sharma</i>	
A Robust Object Recognition Using Modified YOLOv5 Neural Network	462
<i>Archana Balmik, Subhasish Barik, Anup Nandy</i>	

Designing an Efficient Object Detection Model for Autonomous Driving Applications	468
<i>Bharat Mahaur, Anoj Kumar</i>	
Simulating Cyber Attacks and Designing Malware Using Python	473
<i>Akash Ankit, Shubham Inder, Anuj Sharma, Rahul Johari, Deo Prakash Vidyarthi</i>	
Digital Twin-Based Software-defined UAV Networks Using Queuing Model	479
<i>Md. Abu Baker Siddiki Abir, Mostafa Zaman Chowdhury</i>	
EVM-IPPG: Design and Evaluation of a Vital Monitoring System in NICU.....	484
<i>Aryan Jain, S Sphurthy, Priya Bharadwaj, Lavanya Krishna</i>	
Design and Evaluation of a Vehicle Detection System in Low Light Conditions	490
<i>Pranav Bidare, S Siri, M Param, M. J Raghavendra</i>	
Speed Control of Three-Phase Induction Motor Using PI, Fuzzy and ANFIS Controllers	496
<i>Naman Gogia, Rishabh Prasad, Ritik Arora, Bharat Bhushan, Prem Prakash</i>	
Design Analysis of 3-Bit Flash ADC Using Low-Offset and Low-Power Opamp.....	502
<i>Abhinav Saxena, Anurag Yadav, Subodh Wairya</i>	
Deep Learning and Natural Language Processing-Based Model for the Prediction of Suicidal Ideation in Military Personnel	508
<i>Sapna Katoch, Balwinder Kaur Dhaliwal, Gurpreet Singh</i>	
CNTFET Based M-DMTGDI (CMDMTGDI) Design and Its Leakage Analysis.....	515
<i>Neetika Yadav, Neeta Pandey, Deva Nand</i>	
Underwater Image Restoration Using Color Correction and Empirical Mode Decomposition.....	522
<i>Amarendra Kumar Mishra, Mahipal Singh Choudhry, Manjeet Kumar</i>	
Temporally Conditioning of Generative Adversarial Networks with LSTM for Music Generation	526
<i>Romit Mohanty, Pranjal Pratap Dubey, Tushar Sandhan</i>	
Reliable Autonomous Navigation of Mobile Robot in Unconstrained Environment	531
<i>Priyanka Upadhyay, Ravinder Singh, Asha Rani</i>	
Using Object Detection to Select Grasp Type & Control Functional Electrical Stimulation for Hand Rehabilitation	538
<i>Nikunj Arunkumar Bhagat, Manikanta Ruppa</i>	
Sensor-Based Ambient Healthcare Architecture Using Blockchain and Internet of Things.....	543
<i>B. Neeharika Gangothri, Krishna Prasad Satamraju, B. Malarkodi</i>	
Computer-Aided Diagnosis System for Brain Tumor Classification and Segmentation	547
<i>Parimal Mathur, A. S Raghuvanshi, Ayushi Kumari, Anjali Chandra</i>	
Brain Tumor Segmentation, Grade of Tumor and Survival Duration Prediction Using Deep Learning	553
<i>Hrishikesh Lamdade, Arjun Pansare, Gaurav Parulekar, Jignesh Sisodia</i>	
Nonlinear Control for Teleoperation Systems with Time Delay and Random Feedback Errors	558
<i>E. V Anirudh Anand, Rohit Singla</i>	
Optimizing Macroblock Tree Algorithm for Real-Time Video Encoding in HW.....	562
<i>Sumit Johar, Vijay Kumar Bansal, Mahesh Narain Shukla</i>	

ANFIS Based-Kinematic Modeling of 2R Robotic Arm.....	567
<i>Shwetansh Sharma, Rohit Singla</i>	
Adaptive Density-Based Traffic Management System Utilizing Ultrasonic Units and RODER Algorithm	571
<i>Rahul Goyal, Akshat Sharma, Arohi Jain, Ojas Elawadhi, Monica Bhutani</i>	
Elephant Head-Shaped Radiator Based on Tripleband MIMO Antenna with Shorting Pins and Neutralization Strip in Ground Used for Enhanced Isolation.....	578
<i>Anubhav Kumar, Divya Saxena, Navneet Sharma, Rahul Kumar Verma</i>	
Experimental Results from a Proof-Of-concept Method for Accurate Volumetric Estimation of Hematoma in Asymmetrically Formed Objects Comprising Solid Materials as Impediments.	584
<i>Rahul Bhagawati, Souptick Chanda, Cota Navin Gupta, Suman Hazarika</i>	
A Deep Ensemble Model for Differential Diagnosis of Covid-19 Pneumonia Using Thoracic Radiography	590
<i>B. H. Shekar, Shazia Mannan</i>	
Meaningful Shares Based Single Secret Sharing Scheme Using Chinese Remainder Theorem and XOR Operation.....	597
<i>Arjun Singh Rawat, Maroti Deshmukh, Maheep Singh</i>	
Performance Improvement of Water Body Segmentation by DeeplabV3+Using Two Dimensional Variational Mode Decomposition.....	603
<i>Bichu George, Variyar. V. V Sajith, V Sowmya., Ramesh Sivanpillai</i>	
An Effective Approach for Cognitive Radio Wideband Spectrum Compressive Sensing Over AWGN/Rayleigh Channels.....	609
<i>Gaurav Morghare, Sarita Singh Bhadauria</i>	
Comparative Analysis of Spoken Telugu Digits Using MFCC and LPCC Via Hidden Markov Models.....	615
<i>Parabattina Bhagath, Meghana Pullagura, Pradip K Das</i>	
Ancient Indian Script Transliteration Using GANs.....	621
<i>Anshumani Sharma, Ayushi Verma, Chetan Shahra, S. Indu</i>	
A New GAN-Based Data Augmentation Method for Handling Class Imbalance in Credit Card Fraud Detection	627
<i>Emilija Strelcenia, Simant Prakoonwit</i>	
Ancient Indian Murals Digital Restoration Through Image InPainting.....	635
<i>Usneek Singh, Somsukla Maiti, Anil Saini, Dhiraj</i>	
Fake News Detection Using Attention Based.....	641
<i>Khushi Jain, Harsh Bansal, Gaurav Saxena, Rohit Kumar</i>	
Procedure to Select the Power Rating of Electrical Machines for an EV and Comparison with Different Drivetrain Configurations	646
<i>Anurag Gupta</i>	
Color Attenuation Prior Based Single Image Dehazing	654
<i>Athira P Ajith, Gnana King, Vidyamol K</i>	
Artificial Intelligence Enabled Framework for Automatic Brain Stroke Detection.....	659
<i>D V V V Ch. Mouli</i>	

Machine Learning Aided Techniques for Constraints Elimination in Optimal Power Flow Problem	665
<i>Chaitanya Agarwal, Kabir, Vinod Kumar Yadav</i>	
Performance Investigation and Real-Time Simulation of Unit-Template Technique Controlled DSTATCOM for Power Quality Improvement.....	670
<i>Ehsanul Haque Peerzadah, Rehana Perveen, Abdul Hamid Bhat</i>	
Multi-Objective Based Generation Fuel Cost and Emission Reduction Using Grasshopper Optimization Algorithm.....	676
<i>R. Lalhmachhuana, Subhasish Deb, Subir Datta, Ksh. Robert Singh</i>	
Brain Tumor Detection and Segmentation Using Anisotropic Filtering	681
<i>Anushka Mishra, Anshuman Singh, Ankit Pal</i>	
Fault Detection and Identification of Fault Location in Hybrid Microgrid Using Artificial Neural Network.....	686
<i>Nirma Peter, Pankaj Gupta, Nidhi Goel</i>	
Understanding the Effect of Gradient Current and Their Tendency to Impact Sample Morphology and Sample Size in MRI-Image Distortion	692
<i>Urvashi Singh, Dharmesh Verma, Rajesh Harsh</i>	
Iron Ore Image Classification Using Deep Learning	698
<i>Uttam Kumar, Subrajeet Mohapatra, Prabodha Ranjan Sahoo</i>	
Smart Cane for Blind People	704
<i>Lalithanjani Udayagini, Siva Reddy Vanga, Lohitha Kukkala, Kiran Kumar Remalli, S V S S S S S Saketh Lolabhattu</i>	
Optical Character Recognition for Handwritten Telugu Text	709
<i>Buddaraju Revathi, B N V Narasimha Raju, Kaki Surendranath, Kopparty Satya Mounika, Gandreddi Sravani</i>	
An Intelligent System for Bearing Fault Identification Based on Gramian Multi-Resolution Dynamic Mode Decomposition.....	715
<i>Sonalika Bhandari, Sachin Taran, Varun Sangwan</i>	
Improving the Performance of a Massive Multi-Input Multi-Output System by Developing a Hybrid Beamforming Model	721
<i>Minal Kailas Pawar, Suhas S. Patil</i>	
Metamaterial Inspired Dual Band MIMO Antenna with Open-Ended Slot and Neutralized Line for Isolation Enhancement	727
<i>Divya Saxena, Anubhav Kumar, Rahul Kumar Verma, Pankaj Jha</i>	
A Low- Power Low-Noise Current-Feedback Instrumentation Amplifier Based on Gm Boosted OTA for ECG Acquisition	733
<i>Sujeet Kumar Gupta, Riyaz Ahmad, Puneet Singh, Dharmendar Boolchandani, Sougata Kumar Kar</i>	
An Early Diagnosis of Diabetic Retinopathy Using ConvNeXt.....	739
<i>Devanshi, Santos Kumar Baliarsingh, Prabhu Prasad Dev</i>	
Significance of Atrous Spatial Pyramid Pooling (ASPP) in Deeplabv3+ for Water Body Segmentation	744
<i>Gosula Sunandini, Ramesh Sivanpillai, V Sowmya, V. V Sajith Variyar</i>	

Performance Analysis of HAPS Integrated Hybrid RF/FSO System Cascaded with an UWOC Link.....	750
<i>Rima Deka, Sanya Anees</i>	
Consistent CoM Trajectory Generation for Biped Locomotion	756
<i>Kumod K. Sharma, Sunil Nimje, S. E. Talole</i>	
Interactive Volume Rendering Module Using Two-Dimensional Transfer Function on Cone-Beam Computed Tomography Data.....	761
<i>Shreenidhi H Bhat, K S Hareesha, Abhay T Kamath, Adarsh Kudva, H Shashank</i>	
Analysis of VGG16 Based Support Vector Classifier for Automated Glaucoma Detection and Classification*	767
<i>Kamini, Shalli Rani</i>	
QR Shares Based Secret Sharing Scheme Using DWT, Random Permutation and Arithmetic Modulo Operation for QR Secret	772
<i>Arjun Singh Rawat, Maroti Deshmukh, Maheep Singh</i>	
Verification of an ARM Cortex-M3 Based SoC Using UVM	778
<i>Ali Hegazy, Sameh El-Ashry, M. Watheq El-Kharashi, Mohamed Taher</i>	
A Fractal UWB Antenna with WLAN Notch Characteristics.....	784
<i>K H Murali Naik, Sai Chaitanya Petchetty</i>	
Indian Sign Language Interpretation Using Convolutional Neural Networks	789
<i>R. Sreemathy, Mousami Turuk, Jayashree Jagdale, Agrima Agarwal, Vishal Kumar</i>	
A Better Approach for Students Employability Indexing Using Machine Learning.	795
<i>Parshant Sharma, Umesh Kumar Lilhore</i>	
Aerial IRS-Assisted Wireless Communication Systems.....	800
<i>Samarendra Nath Sur, Arun Kumar Singh, Debdatta Kandar, Agbotiname Lucky Imoize</i>	
Multilevel Thresholding of Grayscale Complex Crop Images Using Minimum Cross Entropy	806
<i>Arun Kumar, Anil Kumar, Amit Vishwakarma</i>	
Development of Hybrid Image Caption Generation Method Using Deep Learning	811
<i>Anuja Namdev, S. R. N. Reddy</i>	
Automatic Origination of Frequency Division Multiplexing in Xilinx-Vivado Environment.....	817
<i>M Siva Kumar, Syed Inthiyaz, N Nanda Prakash, S Gnanendra, M Sai Kiran, T Srinivasa Rao</i>	
Singular Value Thresholding Based Sparse Reconstruction Algorithm for 2D ECG Signals.....	822
<i>Hardev Singh Pal, A. Kumar, Amit Vishwakarma</i>	
A Novel Locally Connected Recurrent Neural Network for Identification of Nonlinear Dynamical System	828
<i>R Shobana., Rajesh Kumar, Bhavnesh Jaint</i>	
Image Flare Removal Using Deep Convolutional Generative Adversarial Networks.....	834
<i>Ishan Prakash, Aryan, S. Indu, Mini Sreejeth</i>	
Energy Aware Cluster Head Rotation for D2D Multicasting.....	840
<i>Poulomi Mukherjee, Tanmay De</i>	

Studying the Use of Phonetic Language Script in a Limited Training Environment for Text-To-Speech	846
<i>Abhimanyu Popli, Sandeep Sharma, Saurabh Basu, Pankaj Kumar Dalela</i>	
Designing and FOPID Controlling of the Wheeled-Legged Mobile Robot with Adjustable Height.....	854
<i>Tevfik Yigit, Hakan Celik</i>	
Modified Efficient Parallel Distributed Arithmetic Based FIR Filter Architecture for ASIC and FPGA.....	860
<i>Teena Soni, Anil Kumar, Manoj Kumar Panda</i>	
Optimized Human Drowsiness Detection Using Spatial and Temporal Features of Eye and Mouth.....	866
<i>Anushka Gupta, Vinod Maan, Kuldip Singh Sangwan, Dhiraj</i>	

Author Index