

2022 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT 2022)

**Bangalore, India
8-10 July 2022**

Pages 1-548



**IEEE Catalog Number: CFP22COT-POD
ISBN: 978-1-6654-9782-4**

**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:	CFP22COT-POD
ISBN (Print-On-Demand):	978-1-6654-9782-4
ISBN (Online):	978-1-6654-9781-7
ISSN:	2334-0940

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

Analysis of Effect of Non-Idealities of Active Devices in Tunable Grounded Positive and Negative Impedance Multiplier	1
<i>Vaishnavi D Kamath, Mary Ann George, Dattaguru V Kamath</i>	
Sign Language Recognition and Translation to Speech for Mine Workers using Deep Learning Technologies	7
<i>Hridya Dhulipala, Sowmya Hegde, Chaya Hegde, Swetha Gumpena, Geetishree Mishra</i>	
Designing a D-Flipflop using Novel Sleep Transistor Technique.....	13
<i>Ch. Meghana Reddy, Souvik Dhara, B. Srikanth, P. Ramakrishna</i>	
An E-Agriculture Ecosystem Robot	17
<i>Adarsh Hiremath, D Ananth, Karan V. Upamanyu</i>	
English to Marathi Text Translation using Deep Learning	22
<i>Swati Shilaskar, Shivam Ghadge, Mugdha Dhopade, Janhvi Godle, Mihika Gulhane</i>	
Modulation and Signal Class Labelling with Active Learning and Classification using Machine Learning	27
<i>Bhargava B C, Ankush Deshmukh, A V Narasimhadhan</i>	
Comb-Shaped Patch Antenna Design Study with Shifted Arms and Asymmetric Architecture Enabling Controlled Resonance Change and Radiation Pattern.....	32
<i>Melih Aslan, Huseyin Baydar, Veli Tayfun Kilic</i>	
A Proactive Connection Setup Mechanism for Large Quantum Networks	38
<i>Dibakar Das, Shiva Kumar Malapaka, Jyotsna Bapat, Debabrata Das</i>	
Mobile Based Inventory Management System with QR Code	44
<i>Shayantani Kar, Shresth Bhimrajka, Aditya Kumar, Subhamita Mukherjee</i>	
Comparative Analysis of PI and Fuzzy Based Speed Controllers for Indirect Field-Oriented Control of Induction Motor Drives.....	50
<i>Achala Ayodhya, Sachin Angadi, A. B. Raju</i>	
LIP: Lightweight Intelligent Preprocessor for Meaningful Text-To-Speech.....	56
<i>Harshvardhan Anand, Nansi Begam, Richa Verma, Sourav Ghosh, B. S. S Harichandana, Sumit Kumar</i>	
XAI Based Model Evaluation by Applying Domain Knowledge.....	62
<i>K S Srikanth, T K Ramesh, Suja Palaniswamy, Ranganathan Srinivasan</i>	
A Simple Monopole ISM Band Antenna for On-Body Wireless Communication in the Milimetre-Wave Range	68
<i>Sarosh Ahmad, Shuvra Barua, Yawar Ali Sheikh</i>	
Automatic Building Footprint Extraction using Random Forest Algorithm from High Resolution Google Earth Images: A Feature-Based Approach.....	73
<i>Rahisha Thottolil, Uttam Kumar</i>	
Comparative Performance Study of CNN-Based Algorithms and YOLO	79
<i>Rachit Mayur Shah, B. Sainath, Akshansh Gupta</i>	

Automated Analogue Dial Reading in Cockpits.....	85
<i>Harshitha Nagarajan, Rama Sai Abhishek Podila, C Vishal, D Radha, J Amudha, G Prasanna Murthy, Abiram Rajendran</i>	
Attention-Based Battery Parameter Augmentation Technique to Alleviate Limited Data Challenges	91
<i>Vageesh Maiya, Janamejaya Channegowda, Chaitanya Lingaraj</i>	
Compact Slotted Microwave Antennas with Harmonics Suppression for Mobile and WLAN Applications.....	95
<i>Geriki Polaiah</i>	
Evaluation of Unconfined Compressive Strength of Cement using Ensemble Learning Regression.....	99
<i>H K Ruchitha, B S Sanjana Sharma, Sneha, Niharika Kiran, Trupthi Rao, K Ashwini</i>	
A Novel Training Algorithm for Neuro-Control of Discrete-Time Nonlinear Systems.....	105
<i>Raj Patel, Divyam Mandradia, Koshy George</i>	
Numerical Analysis on Slinky 3 dB Power Divider for High Speed RF Sensor System	111
<i>Gurulakshmi A. B., Rajesh G., Sanjeev Sharma</i>	
Authenticating Distributed Systems using SPIRE Over Kubernetes Cluster	115
<i>Akarsh Goel, B. Thangaraju</i>	
Enhancing Mental Illness Prediction using Tree Based Machine Learning Approach.....	121
<i>Srinath K S, Kiran K, Gagan A G, Jyothi D K, P Deepa Shenoy, Venugopal K R</i>	
Efficient Scanning and Packaging of Shipments in Industries	126
<i>Ravish Kumar Ojha, Koduru Suresh</i>	
Controller Design for Respiratory Systems Used During the COVID-19 Pandemic	131
<i>Yuganshu Wadhwa, Asha Rani</i>	
Development of Intelligent Cradle for Infant Monitoring System	137
<i>Satish Kumar K. V., Praveen L. S., Anusha Vadde, Ranjith Pawar G.</i>	
Development of Non-Linear State-Space Affine Model of PMSM and Analysis of Its Dynamic Behavior Encompassing the Possibility of Chaos	143
<i>Partha Roy, Susanta Ray</i>	
Exploring Adversarial Attacks and Defenses in Deep Learning	148
<i>Arjun Thangaraju, Cory Merkel</i>	
EmoSens: Emotion Recognition Based on Sensor Data Analysis using LightGBM.....	154
<i>Gayathri S, Akshat Anand, Astha Vijayvargiya, Pushpalatha M, Vaishnavi Moorthy, Sumit Kumar, Harichandana Bss</i>	
Intent-Based Industrial Network Management using Natural Language Instructions.....	160
<i>Barun Kumar Saha, Luca Haab, Lukasz Podleski</i>	
A Novel Method for Trusted Audit and Compliance for Network Devices by using Blockchain	166
<i>Santosh Kumar Upadhyaya, B. Thangaraju</i>	
Simulation of Integrated Optical Triple Ring Resonator for Sensing Application.....	172
<i>Shwetha M, Patrick Steglich</i>	
A Weighted Hybrid Centrality for Identifying Influential Individuals in Contact Networks.....	176
<i>Ramya D Shetty, Shrutilipi Bhattacharjee</i>	

High Throughput VLSI Architecture for Bilateral Filtering in Computer Vision	182
<i>Mihir Mody, Rajshekar Allu, Jesse Villarreal, William Wallace, Niraj Nandan, Ankur Baranwal</i>	
High Throughput VLSI Architecture for Image Pyramid Generation in Computer Vision	186
<i>Mihir Mody, Rajshekar Allu, Niraj Nandan, Hetual Sanghavi, Ankur Baranwal</i>	
Design and Implementation of CPW Fed Reconfigurable Microstrip Antenna for Wireless Applications.....	190
<i>R V Durga, G Haasya, D Shravani Durga, S Narsimha Nayak</i>	
Effective Cache Utilization in Multi-Core Real Time Operating System	195
<i>Sudarshan Rao B, Tushar Vrind, Venkata Raju I</i>	
EnsembleWave: An Ensembled Approach for Automatic Speech Emotion Recognition.....	201
<i>Rahasya Barkur, Deepanshi, Devishi Suresh, Mahesh Kumar T N, A V Narasimhadhan</i>	
DBSCAN-R: A Machine Learning Approach for Routing in Opportunistic Networks	207
<i>Rohan Pillai, Rashmi Rao, Challa Rahul Prasad, Apoorva Rao Iragavarapu, Annapurna D</i>	
Realtime Oil Spill Detection by Image Processing of Synthetic Aperture Radar Data	213
<i>Subhrangshu Adhikary, Surya Prakash Tiwari, Saikat Banerjee</i>	
Matrix Inversion on Hardware Board using FPGA for Application in MIMO Systems	218
<i>Ranjith Reddy Lingala, Jogesh Chandra Dash, Debdeep Sarkar</i>	
Mobile Sensing and Modeling Air Pollution Hotspots in Urban Neighborhoods	222
<i>Ena Jain, Debopam Acharya</i>	
High Performance and EV Power Train System using C2000 MCU for Functional Safety	228
<i>Shailesh Ghotgalkar, Ashish Vanjari, Han Zhang, Prasanth Viswanathan Pillai, Mihir Mody, Karthikeyan Rajamanickam, Mohammad Asif Farooqui</i>	
Non-Invasive Multistage Fruit Grading Application with User Recommendation System.....	233
<i>CS Arvind, K Aditya, HS Keerthan, Mohammed Farhan, KN Asha, Shamshekhar S Patil</i>	
Early Detection of Ischaemia Through High Frequency ECGs: The Role of Medical-Grade Wearables for Chest Pain Triage.....	239
<i>Aishwarya Srinivasan, Vijayalakshmi K, Deepak Padmanabhan, Prabhavathi, Shanmugam. K, Sugandhi Gopal</i>	
Improved Electric Vehicle Digital Twin Performance Incorporating Detailed Lithium-Ion Battery Model	244
<i>Abhijit Sahoo, Sree Sahithi, Janamejaya Channegowda</i>	
A Proof-Of-Concept Portable, Non-Invasive, and Wireless Device for the Preliminary Diagnosis of Preeclampsia.....	249
<i>PC Muhammed Raees, Tripti. S. Warriar, Nalesh S</i>	
Analytical Hierarchy and Neural Network Based Landslide Risk Assessment at Sikkim India: A Comparative Study	255
<i>Sandeep Kumar Mondal, Jyotindra Narayan, Rishikesh Bharti, Santosh Kumar Dwivedy</i>	
An Emerging Change in FANET - A Status Review	261
<i>Amit Kumar Das, Tamesh Halder, Snehasish Basu, Sajal Sarkar, Arindam Basak, Arundhati Mishra Ray, Debashish Chakravarty</i>	

Cooperative Control of a Pediatric Exoskeleton System for Active-Assist Gait Rehabilitation	266
<i>Jyotindra Narayan, Bhavik M. Patel, Mohamed Abbas, Ghanshyam Shivhare, Santosha K. Dwivedy</i>	
Generic Recommendation Engine using Hybrid Filtering Model	272
<i>Sushmitha Valli, K Abhijith Saralaya</i>	
Analog Front-End Modelling of Miniature CMOS Image Sensors.....	283
<i>Rajath J, Darshan H M, Nila Sekar, Shashidhar Tantry</i>	
Performance Analysis of 5G Network Slicing Simulations using SimPy	289
<i>Zaahir Ahmed Syed, Swarup Gummadi, E L Mahima, Srujit Reddy Naina, Sivaraman Eswaran, Prasad Honnavalli</i>	
An Enhanced Deployment of 5G Network using Multi Objective Genetic Algorithm	295
<i>R Abhishek, K Kushal, Pulasthya Reddy, Raj Shetty, Sivaraman Eswaran, Prasad Honnavalli</i>	
OpenDaylight as Software Defined Networking Controller: Shortcomings and Possible Solutions.....	301
<i>SR Aditi, Keerthana Mahadev, Sowmya Prasad, Sivaraman Eswaran, Prasad Honnavalli</i>	
SIRT: Machine-Learning-Based Selective Intensity Range Thresholding for Aircraft Visual Docking Guidance Refinement and Interpretation	307
<i>Debabrata Pal, Anvita Singh, Abhishek Alladi</i>	
T5W: A Paraphrasing Approach to Oversampling for Imbalanced Text Classification.....	313
<i>Annapurna P. Patil, Shreekanth Jere, Reshma Ram, Shruthi Srinarasi</i>	
Optimum Power Allocation for Power Efficient NOMA	319
<i>Donuru Keerthi, Sreelakshmi P, Deepthi P. P</i>	
Wireless Sensor Network Based Sustainable Cattle Farm Feed Management and Monitoring System using Internet of Things	325
<i>Jakirul Sarker, Shabuj Hossen, Rubab Ahmed, Alomgir Kabir, Tomal Hossain, Hazrat Ali</i>	
Object Classification using Micro-Doppler Signature and Clutter Suppression in MIMO Radar.....	329
<i>Titas Ghoshal, K. V. S. Hari</i>	
Real Time Simulation Based Handling Quality Assessment of an Impaired Fighter Aircraft with Intelligent Reconfigurable Control Laws	334
<i>Kishan S. Chowhan, Hemendra Arya, Girish S. Deodhare</i>	
Hybrid Underwater Wireless System for Shallow Sea Monitoring: An Outage Analysis.....	340
<i>Romya Bhatnagar, Parul Garg</i>	
Contrast Enhancement Based CNN Model for Lung Cancer Classification and Prediction using Chest X-Ray Images.....	345
<i>Swetha Kulkarni, Shrinivas D Desai, Nirmala Patil, Vishwanath P Baligar, Meena S M, Nirmala S R</i>	
Voltage Source Converter with Different Control Strategies for a MicroGrid-Connected Solar PV with Nonlinear Loads for Current Harmonics Compensation	351
<i>Appalabathula Venkatesh, Shankar Nalinakshan, K Aswini</i>	
Design & Validation of LQG Controller for IDSN32 Antenna Control Servo System.....	357
<i>Nandini Gupta</i>	

Aerial Images were used to Detect Curved-Crop Rows and Failures in Sugarcane Production.....	362
<i>Sumit Dhariwal, Avani Sharma</i>	
CNN Based Intelligent Traffic Control System to Support Emergency Vehicles	369
<i>Vishnu U, Subramanya Sarma, Yashumithaa M, Saswath KR, Varnith GV</i>	
Machine Learning/Deep Learning Algorithms & Variability in Grading Improves Early Detection of DR.....	374
<i>Kavita Sharma, Partheeban Nagappan</i>	
A Passive Grounded MOSCAP- Memrisor Emulator	380
<i>Rahul Kumar Gupta, M. S. Chaudhary, Sachin Taran, Varun Saxena</i>	
Forensic Speech Enhancement of Voiceprints and Speaker Identification Under Mismatched Conditions	385
<i>Swati Vivekananthan, P. Vijayalakshmi</i>	
Optimizing NR Handover by using Doppler Shift Along with Legacy Power Level Algorithm	391
<i>Mrinal Das, Arpita Singh, Pydimarri Naga Sreenivas, Goutham Ponnammreddy, Satya Ganesh</i>	
Wide Band Antenna for Ground Penetrating Radar (GPR).....	396
<i>Prem Kumar Chaudhary, Rashmi Sharma, Sugriv Kumar Gautam, Sunil Kumar, K. P. Ray</i>	
An Approach to Evaluating Subjective Answers using BERT Model	400
<i>Potsangbam Sushila Devi, Sunita Sarkar, Takhellambam Sonamani Singh, Laimayum Dayal Sharma, Chongtham Pankaj, Khoirom Rajib Singh</i>	
Semi-Ellipse MIMO Diversity Antenna with a Zigzag Path as Decoupling Structure for UWB Applications.....	404
<i>Rukhsana Khatoon, Priyadarshi Suraj</i>	
Malware Classification using Bigram BOW, Pixel Intensity Features, and Multiprocessing	408
<i>Shobhan Banerjee, Bibhuti Bhusan Dash, Manas Kumar Rath, Tanmaya Swain, Tapaswini Samant</i>	
Anomaly Detection in Time Series Data using Data-Centric AI.....	413
<i>Chetana Hegde</i>	
Visual Sentiment Classification of Restaurant Review Images using Deep Convolutional Neural Networks	419
<i>Mamatha M, Shilpa Shivakumar, Thriveni J, Venugopal K R</i>	
Real-Time Implementation and Analysis of Age of Information for Cognitive Radio Internet-Of-Things.....	425
<i>M. Ruchitha, Sara Suzain, Rajalekshmi Kishore, Sanjeev Gurugopinath</i>	
Design and Implementation of FPGA Based DDS-ADPLL for Resonant Frequency Tracking in Sensors	431
<i>Mohd Ziauddin Jahangir, P. Chandra Sekhar, Md. Sikander, J. Vamshi Krishna</i>	
Low Sidelobes Patterns for Pulse Doppler Radar Detection using Artificial Neural Networks.....	437
<i>K Raja Rajeswari, K Srinivasa Rao, N Roopavathi, P Radhakrishna, A Vengadarajan, M Sivasankar</i>	
Fault Detection of Grid-Connected Looped Microgrid Based on Estimated Energy Difference Signal.....	442
<i>Ankan Chandra, G K Singh, Vinay Pant</i>	

A New Dynamic Logic Circuit Design with Low Leakage Power.....	448
<i>Fahim Abrar, Md. Maharaj Kabir, Md. Rashidul Islam, Sheik Erfan Ahmed Himu, Faisal Bin Kashem, Sourav Mitra, Md. Wahid Ferdous, Hasan Rahman Saium</i>	
Synthetic Data Generation using Resilient Sample Convolution and Interactive Learning Approach.....	452
<i>Vinayak Raj Urs, Vageesh Maiya, Janamejaya Channegowda, Chaitanya Lingaraj</i>	
FIVR Compensator Auto Tunning and Its Comparison with Manual Tunning.....	459
<i>Chilla Venugopal Reddy, Vishal Gupta, Gaurav Kumar Singh, Deeksha Rawat</i>	
Priority-Aware Service Broker Virtual Machine Allocation Policy using SDN	464
<i>Sudha P. R, Rekha P. M</i>	
Delay Estimation of Healthcare Applications Based on MQTT Protocol: A Node-RED Implementation.....	469
<i>Akshatha P S, S M Dilip Kumar</i>	
Single Shot Radar Target Detection and Localization using Deep Neural Network.....	475
<i>TM Dhipu, Rishabh Verma, R Rajesh, Suma Varughese</i>	
Performance Analysis of Real and Synthetic Data using Supervised ML Algorithms for Prediction of Chronic Kidney Disease.....	484
<i>Gayathri Hegde M, P Deepa Shenoy, Venugopal K R</i>	
A Versatile Cubic-Curved Triangle Mesh Generator using Subparametric Transformation for FEM and Image Processing Applications.....	490
<i>T. V. Smitha, Aishwarya T, Asha S Manek, Nataraj V</i>	
Towards Data-Driven Cognitive Rehabilitation for Speech Disorder in Hybrid Sensor Architecture	495
<i>Ahona Ghosh, Siddhartha Chatterjee, Soumitra De, Atindra Kumar Maji</i>	
Building Privacy First 5G Networks	501
<i>Vimal Balajee Viswanathan, Karthik Andhiyur Nagarajan</i>	
5G Planning and QoE Management using Mathematical Benchmarking Techniques for Europe and Middle Eastern Countries	506
<i>Gracia S, P. Beaulah Soundarabai, Pethuru Raj</i>	
Design and Implementation of a Low Cost Electronic Protection System to Prevent Question Paper Leakage	512
<i>Md. Ariful Islam, Lamisa Mashiat, Md. Mostafa Sayeed, Md. Maharaj Kabir, Sheik Erfan Ahmed Himu, Fahim Abrar, S. M. Moinul Kabir Chowdhury, Md. Tanvir Hayat</i>	
Design a Hexagonal Shape Frequency Reconfigurable Antenna for New C-Band 5G Applications.....	517
<i>M. Ganesh, N. S. Raghava, T. Sabapathy</i>	
Design and Development of a Smart Campus using Augmented Reality(SCAR)	522
<i>M. Sundarramurthi, Kruthi Chandrashekar, Nagarathna</i>	
Gridded Estimation of Lightning Frequency Over the Eastern Indian Subcontinent using Neural Networks	527
<i>Rohit Chakraborty, Arindam Chakraborty</i>	
Comparative Evaluation of the Convolutional Neural Network Based Transfer Learning Models for Classification of Plant Disease	533
<i>Naresh Pajjuri, Uttam Kumar, Rahisha Thottolil</i>	

Signal Integrity Issues in FPGA Based Multi-Motor Microstepping Drives.....	539
<i>Dhruti Ranjan Gaan, Manoj Kumar, Dinakarn E, Sudhakar S</i>	
Wideband Beamforming using Digital Phase Only Compensation in Digital Array Radars	545
<i>Elayaperumal Subramanayan, Suchith Rajagopal</i>	
Supply Chain Partner Onboarding using Conversational AI and NLP in B2B Context.....	549
<i>Gomathyshankar R, Manjit Singh Sodhi, Kusum Sanal Kumar</i>	
Fusing Conventional and Deep Learning Features for Hyperspectral Image Change Detection	553
<i>Nikhi Bobate, Palla Parasuram Yadav, A. V. Narasimhadhan</i>	
Kannada Text Summarization using Extractive Technique.....	559
<i>Pallavi P, Sarvamangala D R</i>	
A Modified Current Mode Bandgap Reference with 15.1ppm/°C Temp Coefficient in 28nm CMOS	563
<i>R. Nagulapalli, Immanuel Raja</i>	
Optimization of Wind Farm Layout by Repetitive Rearrangement.....	568
<i>Awanit Ranjan, Vivek Kumar</i>	
A CNN Based Approach to Classify the Folk Dances of Odisha.....	574
<i>Swati Samantaray, Sudhansu Shekhar Patra, Amlan Mohanty, Lalbihari Barik, Akash Barik, Aditya Narayan Brahma</i>	
Performance Analysis of Fog System with User's Impatient Behaviour	581
<i>Pratyusa Mukherjee, Veena Goswami, Sudhansu Shekhar Patra, G B Mund, Jeet Chakraborty, Rabindra K. Barik</i>	
Performance Study of Kubernetes Cluster Deployed on Openstack, VMs and BareMetal	587
<i>Yedula Sai Dhanush Reddy, Padumati Saikiran Reddy, Nithya Ganesan, B. Thangaraju</i>	
Comparative Study and Performance Analysis of Householder Transform-Based RLS Algorithm.....	592
<i>K M Roopa, Jalaja S, S S Vidya</i>	
ME-CapsNet: A Multi-Enhanced Capsule Networks with Routing Mechanism.....	597
<i>Jerrin Bright, Suryaprakash Rajkumar, Arockia Selvakumar Arockia Doss</i>	
Learning Engagement Assessment in MOOC Scenario	603
<i>Rashmi Adyapady R., Annappa B.</i>	
Real-Time Student Emotion and Performance Analysis	609
<i>Pramodini Metgud, Navya Dayanand Naik, Sukrutha M S, Anita S Prasad</i>	
Organ Bank Based on Blockchain.....	614
<i>Navjeevan Chaudhary, Sunilkumar S. Manvi, Nimrita Koul</i>	
Synchronization Scheme Among Satellite Systems for Space Applications.....	619
<i>Sradhanjali Mohapatra, Lekshmi V, Sudhakar S</i>	
Blockchain-Based Access Control Model with Privacy Preservation in a Fog Computing Environment	625
<i>Naveen Chandra Gowda, Sunilkumar S. Manvi, Bharathi Malakreddy A</i>	
A Preliminary Study of Serverless Platforms for Latency Sensitive Applications.....	631
<i>Thirukovela Venkata Sarathi, Julakanti Sai Nischal Reddy, Peddaboinolu Shiva, Rounak Saha, Anurag Satpathy, Sourav Kanti Addya</i>	

SOT-MRAM Based Main Memory: An Alternative to DRAM.....	637
<i>Sadhana Rai, Kallinatha H D, Basavaraj Talawar</i>	
Analyzing Information Flow of Hashtag Networks During Elections using Sentiment Analysis and Graph Algorithms.....	643
<i>Chhandak Patra, Pushparaj Shetty D, Sonali Chakraborty</i>	
Feasibility Study on Replacement of Coaxial Cables with Optical Fiber Links in UAVs	649
<i>Gautam Sinha, Meena D, Nandita B</i>	
FDTD Analysis of Transmission Line Loaded with Time-Varying Shunt Capacitors for Mixer Applications.....	655
<i>Anand Kumar, Jogesh Chandra Dash, Debdeep Sarkar</i>	
Radar Target Simulation using Calibration Lines of Active Phased Array Antennas	661
<i>Taniza Roy, D Meena, P Azeez</i>	
Impact of Thermal Hotspots Formation in High Performance Computing	666
<i>Balvinder Pal Singh, B Thangaraju</i>	
Linearity Analysis of T-Gate HEMT with Graded Back-Barrier for Wireless Applications	672
<i>Megha Sharma, Bhavya Kumar, Rishu Chaujar</i>	
Doppler Detection Capable Polyphase Good Code Sets Based on Linear FM Waveforms for MIMO Radar	677
<i>Anjali Kadambi, Ravi Kadlimatti</i>	
Coherent Radar Waveform Generation and if Signal Detection using Single Laser Source for Multi Band Sensor Network Applications	683
<i>D Meena, Saraswati Purohit, Arjun Anil Kumar, Gaurav Prusty</i>	
Design, Analysis and Development of an Autonomous Modular Disinfectant Robot	689
<i>Aditya Mehta, S Apeksha, Pranav Banagar</i>	
Parts of Speech Tagging for Kannada and Hindi Languages using ML and DL Models.....	695
<i>V Advait, Anushka Shivkumar, B S Sowmya Lakshmi</i>	
A Simple Countermeasure to Mitigate Buffer Overflow Attack using Minimalistic Hardware-Integrated Software Simulation for FPGA	700
<i>S. Sayeeshwari, E. Prabhu</i>	
Classification of Acute Liver Failure using Machine Learning Algorithms.....	704
<i>Diganta Sengupta, Subhash Mondal, Sanway Basu, Anish Kumar De, Shaumik Nath, Amartya Pandey</i>	
Mobility-Aware Hybrid Channel Estimation Scheme for RIS-Aided Millimeter-Wave Systems	710
<i>Biswa P. S. Sahoo, Simran Narang, Prerit Jain, Dheeraj Kumar, Satya Kumar Vankayala</i>	
Plant Disease Detection and Classification using Deep Learning CNN Algorithms.....	715
<i>Bavithra Karunanidhi, B Nandhini, S Ruth Jeba Kumari, M Sirpikadevi, M Sugassini</i>	
Event Driven Micro-Services Based Information Bot.....	721
<i>Gurleen Kaur, B. Thangaraju</i>	
Crop Yield Prediction using Temporal Data	726
<i>Laxmi B Ranavare, Sanjay Chitnis</i>	

A CNN Based Model for Identification of the Level of Participation in Virtual Classrooms using Eye Movement Features	731
<i>S Akshay, Poojitha Vasanth</i>	
Neural Network-Based Gain Scheduled Position Control of a Pneumatic Artificial Muscle.....	737
<i>Arunabha Majumder, Debadrata Sarkar, Sagnik Chakraborty, Abhijit Singh, Shibendu Shekhar Roy, Aman Arora</i>	
Performance Evaluation of OWC System in Different Weather Conditions using Wavelength and Spatial Diversity	743
<i>Vijayashri V. Belgaonkar, R. Sundaraguru</i>	
Efficient PLMN Selection in Regenerative Non-Terrestrial Network.....	749
<i>Swetha Govindarajan, G Chaithanya Sai, Nishtha Bansal, Dandra Prasad Basavaraj, Debabrata Das</i>	
Convolutional Neural Network-Based ECG Classification on PYNQ-Z2 Framework.....	754
<i>Shobhit Tiwari, Priya Ranjan Muduli</i>	
Machine Learning Approaches to Assess Mood of the News Editorial	760
<i>Akshita Sah, Rajdeep Chatterjee, Mahendra Kumar Gourisaria</i>	
Reinforcement Learning Framework for Dynamic Power Transmission in Cloud RAN Systems.....	766
<i>Satya Kumar Vankayala, Swaraj Kumar, Vithik Shah, Anmol Mathur, D Thirumulanathan, Seungil Yoon</i>	
Emerging Edge Computing Applications	772
<i>Vijayaraghavan Varadharajan, Shreyash Mantri, Bhoomi Shah, Shivam Deshpande</i>	
Enhanced k-Anonymity Model Based on Clustering to Overcome Temporal Attack in Privacy Preserving Data Publishing	776
<i>C N Sowmyarani, L G Namya, G K Nidhi, P Ramakanth Kumar</i>	
Grid Integration and Application of Battery Energy Storage Systems.....	782
<i>Maneesh Kumar, Kalpana Shanmugam, Kaustove Pradeep, Matteo Filippone</i>	
Multi Robot Path Planning using Priority Based Algorithm	788
<i>Saksham Sharma, Naman Antony Menezes</i>	
Design of Smart Oxygen Mask with Efficient Patient Monitoring System and High FiO ₂ using Flexible Electronics	794
<i>Vinod Kumar Yadav</i>	
Design and Analysis of High Speed Low Power CMOS Comparator with Charge Distribution Technique	800
<i>K. Dineshkumar, Gnanou Florence Sudha</i>	
Towards Efficient and Dynamic Allocations of Mist Nodes for IoST Devices	806
<i>Sandeep Nanda, Veena Goswami, Aditya Narayan Brahma, Sudhansu Shekhar Patra, Rabindra K. Barik</i>	
Ad-Hoc Network Based Surveillance Robot	811
<i>Ambareesh Laxman Shirwal, Prasenjit Deb, Chandana S Bhat, Adithya Herle Ps, Abhiram Naik T</i>	
Fabrication of a Nickel MEMS Accelerometer Based on SU-8 LIGA Process	816
<i>Kalaiselvi. S, Sujatha. L, Sundar. R</i>	

Adaptive Resonance Theory (ARTMAP) for Analysis and Prediction of Survival Rate of Patient After Liver Transplantation.....	820
<i>Gaurav Soni</i>	
Recognising the English Language using Context Free Grammar with PyFormlang	826
<i>Harshitha Nagarajan, Punitha Vancha, Supriya M</i>	
ASIC Implementation of UART Chip Having 16 Baud Rates at SCL 180 nm Technology Node	832
<i>Sanjay Sharma, C. Shekhar, S. Qureshi</i>	
Fully Automated Traffic Light Controller System for a Four-Way Intersection using Verilog	838
<i>Pranaav Jothi M, Srivatsan M, Krishna Kumar P, Prakash P, Kasthuri P</i>	
A Real-Time Hardware Oriented State Feedback Sliding Mode Actuator Control for Engine Airpath System with Improved Transient Response	843
<i>Rohith Kamath, Vivek Venkobarao</i>	
A Novel Deep Architecture for Multi-Task Crowd Analysis.....	849
<i>Santosh Kumar Tripathy, Rajeev Srivastava</i>	
Anomaly Detection in Telemetry Data using Ensemble Machine Learning	855
<i>Nibras Ahmed Nizar, Krishna Raj P. M., Vijaya Kumar Bp</i>	
An Enhanced Context-Based Emotion Detection Model using RoBERTa	861
<i>Rohan Kamath, Arpan Ghoshal, Sivaraman Eswaran, Prasad Honnavalli</i>	
Temperature Analysis on Short Channel Effects of Modified NCFET : A Simulation Study	867
<i>Rashi Mann, Yash Pathak, Rishu Chaujar</i>	
Segregation of Blood Cells using Low Powered Di-Electrophoretic Field Force	872
<i>Rohit Dattatreya Hegde, Raksha D S, Ashwini V. R, Preeta Sharan, Anup M Upadhyaya, Ciro Rodrigues</i>	
Teaching Aerospace Software Quality at an Undergrad Level in the Pandemic – Experiences.....	876
<i>Gauri V. Nair, S Sai Girish, BM Vasudev, Yogananda Jeppu</i>	
A Dual Dataset Approach for the Diagnosis of Hepatitis C Virus using Machine Learning.....	882
<i>Utkrisht Singh, Mahendra Kumar Gourisaria, Brojo Kishore Mishra</i>	
A Conceptual Analysis for the Measurement of Stress Intensity by Deep Learning using EEG Signals	888
<i>Nikhil A S, Nitish N Banakar, Pranav Jagadeesh, Madhukesh Bhat M, Selva Kumar S</i>	
An Innovative Approach for Intelligent Educational Materials Preparation Enabling the User Interaction with Video Content	893
<i>Mehdi Davoudi, Alireza Keyanfar</i>	
Application of Intelligence in Solving Architectural Problems in the Field of Housing.....	899
<i>Alireza Keyanfar, Liyana Meh, Reihaneh Rabbani</i>	
Deep Convolutional Network Tumor Classification System in Brain MRI	905
<i>Roderick Y. Vicente, Ryan R. Tejada, Glenn John O. Fernando, Roselle P. Cimagala, Yolanda D. Austria, Deanne Cameren P. Evangelista</i>	

Deep Convolutional Neural Networks-Based Machine Vision System for Detecting Tomato Leaf Disease	911
<i>Dennis C. Malunao, Roger S. Tamargo, Ricky C. Sandil, Christopher Franco Cunanan, Jovencio V. Merin, Roldan D. Jallorina</i>	
Safety Gear Compliance Detection using Data Augmentation-Assisted Transfer Learning in Construction Work Environment.....	916
<i>Ryan C. Reyes, Rovenson V. Sevilla, Godofredo S. Zapanta, Jovencio V. Merin, Renato R. Maaliw, Al Ferrer Santiago</i>	
Computer Vision-Based Signature Forgery Detection System using Deep Learning: A Supervised Learning Approach.....	922
<i>Ryan C. Reyes, Myriam J. Polinar, Richardson M. Dasalla, Godofredo S. Zapanta, Mark P. Melegrito, Renato R. Maaliw</i>	
Recursive Matrix Decomposition Methods and Applications in Wireless Communication	928
<i>Ganesan Thiagarajan, Deepan Vetrivel, Sanjeev Gurugopinath</i>	
K-Means++ Algorithm Based Detection of QPSK-PD-NOMA Signal Over Free Space Optical Channel.....	934
<i>Abhishek Mani Shukla, Aparsh Gupta, Sumanta Gupta</i>	
Latency-Aware Tactile Cyber-Physical Systems for Mission-Critical Applications.....	940
<i>Madan Kumar S, Raja Vara Prasad Y, Paventhan A</i>	
A Novel Batch Scheduling Algorithm with Digital Simultaneous Looks for Airborne Surveillance Radars.....	946
<i>Nanditha Unnikrishnan, Ramkumar Raghu, R Rajesh</i>	
Optimization of Resource Allocation in Optical Networks.....	952
<i>Padmini Bhat, Shrinidi, K. V. S. S. S. Sairam</i>	
Target Depth Estimation using a Linear Array of Cameras: Analysis and Experimental Validation.....	958
<i>Aniket Arun Gangotri, Achanta Sri Shanmukh, Sanjeev Gurugopinath</i>	
Robotic Assistant to Surgeons for Inventory Handling	964
<i>Aashay Patel, Aditya Ashok, Anshul S Rao, Harivansh Narayan Singh, Shikha Tripathi</i>	
An Automatic Peak Finding and Fitting Aspects of Laser Induced Plasma Spectra Acquired in High Vacuum: Tradeoff Simulations and Statistics	968
<i>Sridhar R. V. L. N., Chandana R., Shashank Pandey, Prashanth C. U., Umesh S. B., Malathi S., Elumalai S., Sriram K. V.</i>	
A Spurious Free VHF Front End SAW Filter for Satellite AIS	973
<i>Urvi Papat, Santanu Sinha</i>	
30 Minute Short Holter Monitoring in Outpatient Practices - New Clues to Diagnosis.....	977
<i>Aishwarya Srinivasan, Satish Kumar, Amrutha G R, Vijayalakshmi K, Deepak Padmanabhan, Sugandhi Gopal</i>	
Squint SAR Algorithm for Real-Time SAR Imaging.....	983
<i>Peeyush Sahay, Vaidya Dhavalkumar B., Kadali Lokesh Kiran</i>	
Enhanced Vehicle Re-Identification for ITS: A Feature Fusion Approach using Deep Learning.....	987
<i>Ashutosh Holla B, Manohara Pai M. M, Ujjwal Verma, Radhika M. Pai</i>	

Classification and Analysis of Dementia using Machine Learning Algorithms.....	993
<i>Aakarsh Arora, Mahendra Kumar Gourisaria, Rajdeep Chatterjee</i>	
Dual Mobile Data for Single Transmission Dual VoLTE Standby Devices	999
<i>Dandra Prasad Basavaraj, Prashant K. Wali, Srinivas Chinthalapudi, Ajaykumar Kabadi, Debabrata Das</i>	
Implementation of Cascade Learning using Apache Spark.....	1004
<i>Kumar Mayank, Snigdha Sen, Pavan Chakraborty</i>	
Monocular Cloud Map Generation for Intelligent Navigation	1010
<i>Kumar Vaibhav, RC Vikram Nag, Shobha K R, MM Harish, D Santhosh Murthy, Lakshmi S, M Ravikanth, Twishi Tyagi</i>	
Deep Learning Based Semantic Segmentation to Detect Ripened Strawberry Guava Fruits.....	1017
<i>Nagaraju Y, Venkatesh, Venugopal K R</i>	
Deep Learning Based Multi Sensor Data Fusion for Radar and IFF	1023
<i>Sapna, TM Dhipu, R Rajesh</i>	
Modeling and Simulation of FBG Based Pressure Sensor for Micro Level Strain Measurement.....	1029
<i>Ibrar Jahan M. A, Ciro Rodriguez Rodriguez, Rajini V Honnungar</i>	
Automatic Intestinal Content Classification using Transfer Learning Architectures	1035
<i>Palak Handa, Nidhi Goel, S. Indu</i>	
Design of a Multispectral and Thermal Data Acquisition System for High-Throughput Phenotyping of Plant Pathology	1040
<i>Kartik E. Cholachgudda, Rajashekhar C. Biradar, Kouame Yann Olivier Akansie, Geetha D. Devanagavi, Aditya A. Sannabhadti</i>	
Intruder Detection and Tracking using 77GHz FMCW Radar and Camera Data	1046
<i>Vandana G S, Bethi Pardhasaradhi, Pathipati Srihari</i>	
Simulation of Piezoelectric Disc & Micromachined Ultrasound Transducer.....	1052
<i>S Atheeth, Manish Arora</i>	
Spydobot-AI Based Autonomous Spider Like Robot for Spying.....	1056
<i>Jamal Pasha, S Karpagavalli</i>	
Observer Based Paradigm for Resilient Secondary Control of AC Microgrids	1062
<i>Maneesh Kumar, Ram Krishan, Deepak Pullaguram</i>	
MartiNet: An Efficient Approach for River Segmentation in SAR Images	1068
<i>Tejas Ravishankar, Trisha Celine Anil, Ujjwal Verma, Manohara M. M. Pai, Radhika Pai</i>	
Mathematical Analysis and Modelling of a Novel Photonic Based FMCW Signal Generation for Long Range Radar Applications.....	1074
<i>D. Meena, Vigneshwar Dhavamani, K. A. Nethravathi</i>	
Optimized Waste to Energy Technology Combined with PV-Wind-Diesel for Halihsahar in Chattogram	1080
<i>Md. Arafat Bin Zafar, Md. Sajjad-Ul Islam, Md. Rashidul Islam, Md Shafiullah</i>	
Complete Solution of a Markov Modulated Tandem Fluid Queueing Model of a Voice Network.....	1085
<i>Nandyala D. Gangadhar, Govind R. Kadambi</i>	

Reinforcement Learning-Based Approach for Establishing Energy-Efficient Routes in Underwater
Sensor Networks..... 1091
K R Shruthi, C Kavitha

Author Index