

# **2023 International Conference on IoT, Communication and Automation Technology (ICICAT 2023)**

**Gorakhpur, India  
23-24 June 2023**



**IEEE Catalog Number: CFP23DW2-POD  
ISBN: 979-8-3503-0283-7**

**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:	CFP23DW2-POD
ISBN (Print-On-Demand):	979-8-3503-0283-7
ISBN (Online):	979-8-3503-0282-0

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## TABLE OF CONTENTS

Intelligent Service Oriented Architecture (SOA) for State-Of-the-Art IoT-DDoS Defense and Research Challenges.....	1
<i>Manish Snehi, Jyoti Verma, Isha Kansal, Renu Popli, Rajeev Kumar, Gurpreet Singh Saini</i>	
Challenges Issue and Application of Wireless Sensor Networks: A Systematic Literature Review .....	5
<i>Deepak Kannaujaiya, Anshu Kumar Dwivedi</i>	
Security Enhancement of QR Code Using S-Boxes and Hyper-Chaotic System .....	10
<i>Mangal Deep Gupta, R. K. Chauhan, Prashant Pandey</i>	
0.7V Dual-Band High Gain CMOS LNA for mm-Wave Applications.....	15
<i>Arpit Tomar, Gaurav Mehra, Aman Kumar, Deepak</i>	
Fruit Classification Using Optimized CNN.....	20
<i>Arvinda Kushwaha</i>	
Development and Evaluation of QCA-Based Feynman and Double Feynman Gates: A Design and Analytical Study .....	25
<i>Shiva Dwivedi, Shubra Dubey, Kanchan Sharma</i>	
Classical Controller Based Comparative Performance Analysis of DC Motor Drives.....	31
<i>Suraj Gupta, Pabitra Kumar Biswas</i>	
Towards Ultrawide Band Semiconductors Usage in High-Voltage MOS Devices.....	37
<i>Narendra Yadava, Prashant Pandey, R. K. Chauhan</i>	
Battle Royale Optimization Algorithm for Automatic Threshold Selection in Cervical Pap Smear Images .....	41
<i>Janani S, D. Francis Xavier Christopher</i>	
Applications of Machine Learning Techniques in the Classification of Mushrooms .....	46
<i>Bhumi Singh, Namrata Dhandha, Rajat Verma</i>	
Implimentation and Study of Fuzzy Based IoT Enabled Health Alert System Using AQI.....	53
<i>Padmaja Tripathi, Abhinav Pal, Vinay Kumar, Netesh Kumar Sharma, Ankit Kumar, Prashant Pandey</i>	
A Comprehensive Study on Routing Approach in Wireless Sensor Networks .....	59
<i>Mritunjay Kumar, Anshu Kumar Dwivedi</i>	
Trajectory Generation by SCARA Robotics Manipulator .....	65
<i>KM Shivani Singh, Ram Bilas Prasad</i>	
Smart Phone Controlled 3D Printed Hand Prosthetic Using Bluetooth Technology .....	69
<i>Shashank Kulshrestha, Dharamveer, Pranjal Gupta, Saifali Ahirwar, Krishnanand, Mohammad Taufik</i>	
Multi-Layer Feature Fusion-based Deep Multi-layer Depth Separable Convolution Neural Network for Alzheimer's Disease Detection.....	74
<i>Santosh Kumar Tripathy, Divya Singh, Ankit Jaiswal</i>	
Internet of Medical Things: Current Applications, Challenges and Future .....	79
<i>Parul Saini, Lipika Gupta, Shivani Malhotra</i>	

Predictive Modelling and Simulation of Vehicle-To-Grid Systems Using Hidden Markov Algorithm and Microgrid Integration.....	84
<i>Subhajit Roy, Rishabh Dev Shukla, Pritam Bhowmik, Nivendu Nandy, Alok Kole, Kuntal Ghosh</i>	
A Security and Application of Wireless Sensor Network: A Comprehensive Study .....	90
<i>Santosh Kumar Jaiswal, Anshu Kumar Dwivedi</i>	
Structural Analysis of 1U CubeSat Designed for Low Earth Orbit Missions.....	95
<i>Ayushi Dhariwal, Nakul Singh, Arun Kumar Kushwaha</i>	
Reconnoitering the Essentials of Image and Video Processing: A Comprehensive Overview .....	100
<i>Ashulekha Gupta, Anu Sayal, Chaithra N, Janhvi Jha, Veethika Gupta, Himani Maheshwari</i>	
Optimizing Absorber Layer in Photodetectors with $\text{CH}_3\text{NH}_3\text{SnI}_3$ Organometal Halide Perovskite: A Simulation-Based Approach.....	107
<i>Shilpi Singh, Saurabh Kumar, R. K. Chauhan</i>	
Hybrid Energy Aware Bio Inspired Technique to Improve Network Lifetime for MANETs .....	113
<i>Parveen Kumar Sharma, Rinkesh Mittal, Vikas Gupta, Pooja Sahni, Parveen Singla</i>	
Anomaly Detection and Time Series Analysis .....	117
<i>Ayush Anand, Durgesh Srivastava, Lekha Rani</i>	
Low Profile Multiband Meander Strip Monopole Antenna for TV Broad COST/5G Mobile Communication System/ WLAN Applications.....	122
<i>Prakshep Kumar Rai, Chandan, Ashutosh K. Singh, Shambhavi M Shukla</i>	
A Machine Learning-Based Disinfectant Type, Concentration, and Usage Monitoring System for Real-World Scenarios.....	127
<i>Dharmendra Kumar, Shiv Nath Chaudhri, Navin Singh Rajput</i>	
Air Quality Prediction and Monitoring Using Machine Learning-Based Forecasting Approach .....	133
<i>Dharmendra Kumar, Shiv Nath Chaudhri, Navin Singh Rajput</i>	
Deep Learning-Based Networks to Detect Leaf Disease in Maize and Corn .....	139
<i>Samridhi Singh, Aryan Verma, Vishal Guleria, Shekhar Yadav, Nagendra Pratap Singh</i>	
Empowering Cardiologists with Deep Learning YOLOv8 Model for Accurate Coronary Artery Stenosis Detection in Angiography Images.....	145
<i>Mohd Osama, Rajesh Kumar, Mohd Shahid</i>	
Prediction of Coronavirus Using Various Machine Learning Algorithms .....	151
<i>Jaagrit, Vaibhav Sharma, Lekha Rani, Durgesh Srivastava</i>	
A Dual Band Dual C Shaped Monopole Antenna with a Low Profile for Wi-Fi, WiMAX, and WLAN Applications.....	157
<i>Azmat Ali, Shambhavi M Shukla, Chandan</i>	
Organic Pentacene-Based Vertical Organic Tunnel Field Effect Transistor (TFET): Simulation Study.....	162
<i>Anshika Srivastava, Harsh Jain, Shweta Tripathi</i>	
Electric Wheelchair for Physically Disabled Person .....	167
<i>Anurag Dwivedi, Rajesh Kumar, Poorvi Omer, Himanshu Pratap Singh, Ubaidullah Rahmani, Kalyani Gupta</i>	

Design and Fabrication of an Electric Tricycle .....	173
<i>Anurag Dwivedi, Rajesh Kumar, Rishu Kumar, Rohit Jaiswal, Anjali Srivastava, Mithilesh Verma</i>	
Advancements and Challenges in Solar-Powered Cars: A Comprehensive Review .....	178
<i>Anurag Dwivedi, Sushil Kumar Agrawal, Kunal, Km. Kiran Verma, Pushpendra Pandey, Arun Kumar Yadav</i>	
Ultra-Wide Band Patch Antenna for C and X Band Application.....	184
<i>Samiksha Yadav, Praveen Kumar Chakravarti, Siddharth Sharma, Ayushi Jain, Subodh Kumar Tripathi</i>	
Under Voltage Control Technique for Linear Load on Grid Integrated with PV Array Utilizing Interweaved GI .....	189
<i>Pankaj Kumar Sharma, S. C. Choube, L. S. Titare</i>	
A Review on Chatbots: Advancements and Its Downsides .....	194
<i>Anamika Mishra, Awanika Singh, Prashenjeet Singh, Shailesh Singh, Shravan Kumar Pandey, Abhinandan Tripathi</i>	
Adopting Deep Learning for Chest X-Ray Analysis: An Extensive Survey.....	199
<i>Vaishali Arya, Tapas Kumar</i>	
Design and Simulation of an Improved Structure of Spine for Humanoid.....	206
<i>Mayank Singh, Subhadeep Chatterjee, Gautam Bhandari, Harmeet Singh</i>	
Precision Agriculture Crop Recommendation System Using KNN Algorithm .....	212
<i>Rakesh Kumar, Meenu Gupta, Umesh Singh</i>	
Microstrip Patch Antenna Based Hairtail Fish Freshness Detection: A Novel Approach.....	218
<i>Hasnain Nabi Ahmed, Abdul Rahman Asad Khan, Shrish Bajpai</i>	
GAIT: A Computing Survey Towards Approaches, Methodologies and Applications .....	223
<i>Prateek Singhal, Rakesh Kumar Yadav</i>	
An Extraction Aggregation Strategy Using a Hierarchical Representation Model Based on Longformers and Transform.....	230
<i>Nitish Hans, P Hirishikesh, A Helen Victoria</i>	
The IoT-Based Smart Shopping Trolley System .....	236
<i>Sakshi Maurya, Gayatri Sahu, Anupriya Yadav, Bhawna Shukla, Gaurav Agrawal, Narendra Kumar</i>	
A Review of the Need for Health Communities to Improve Health and Nutritional Patterns .....	242
<i>Vinayak, Simran Bhardwaj, Shivang Gupta, Karishma, Prince Gupta</i>	
Self- Supervised Learning Based Covid-19 Detection from Chest Radiography Images Using Deep CNN .....	247
<i>Arul Sowmiya A S, Palanikkumar D</i>	
IoT Intrusion Detection Using Two-Tier-Convolutional Deep-Learning Model.....	251
<i>Geo Francis E, S Sheeja, Antony John E. F</i>	
Survey on Various Feature Detection and Feature Selection Methods Using Retinopathy Images.....	258
<i>Mankiran Kaur, Puneet Kumar, Anuj Kumar Gupta</i>	

Government Tender Allocation Using Blockchain Technology .....	264
<i>Srishti Dubey, Priyanka Singh, Rohan K. Verma, Deepika Kamboj</i>	
Automated COVID-19 Detection Using ML & IOT .....	270
<i>Madhu Gautam, Himanshi Chaudhary, Abhishek Verma, Rupal Garg</i>	
An Efficient Brain Tumour Detection from MR Images Based on Deep Learning and Transfer Learning Model .....	275
<i>Sarita Simaiya, Umesh Kumar Lilhore, Ranjan Walia, Shweta Chauhan, Amit Vajpayee</i>	
Tracking and Security Features Enhancement in a Smart School Bus Using IoT .....	280
<i>Abhay Surya L R, Likith S A, N Guruprasad</i>	
FabricSense: A Tactile-Based Fabric Structure Detection Methodology for Automatic Temperature Adjustment .....	285
<i>Chaithanya Dayananda, Hemashree P, M. Sai Harshini, N Guruprasad</i>	
Quaternion Neural Network Architectures in Various Application Domains .....	290
<i>Bharat Tripathi, Nidhi Srivastava, Amod Kumar Tiwar, Abhishek Sharma</i>	
Visual Sentiment Analysis Using Machine Learning for Entertainment Applications .....	299
<i>Anu Sayal, Chaithra N, Janhvi Jha, Balu Trilochan, Gaduputi Venkata Kalyan, M. Shravani Priya, Veethika Gupta, Minakshi Memoria, Ashulekha Gupta</i>	
IoT-Based Intelligent System for Garbage Level Monitoring in Smart Cities .....	307
<i>A. Jainul Fathima, Ramakrishnan Raman, S. Omkumar, J. Omana</i>	
Thermographic Images-Based Lung Cancer Detection Using a Convolutional Neural Network Algorithm .....	312
<i>Anindita Saha, Rakesh Kumar Yadav</i>	
Anomaly Detection in the Cloud Environment with Clustering Optimization Model for Attack Detection in IDs.....	318
<i>Ashima Jain, Khushboo Tripathi, Aman Jatain, Manju</i>	
Retrospective Study on Classical Homomorphic Encryption Algorithms.....	323
<i>Sonam Mittal, Soni Singh</i>	
Patients Medical Record Monitoring Using IoT Based Biometrics Blockchain Security System.....	329
<i>Kamlesh Kumar Gautam, Shiva Prakash, R K Dwivedi</i>	
Pest Detection Using Random Forest.....	335
<i>Shikha Sharma, Vinod Kumar, Shraddha Sood</i>	
Establishing Vast Network of Medical Institution to Reduce Medical Waste .....	343
<i>Apoorv Dixit, Anurag Tyagi, Ayushi Prakash, Sandhya Avasthi</i>	
Design of a Filter Using Acoustic Resonator for Wi-Fi Applications.....	349
<i>Raju Patel, U. Siva Sruthi, Bandlu Sai Ruthu, T. Shireesha, S. K. Tripathi</i>	
IoT Based Solution to Wards Smart Parking System .....	354
<i>Malavikaspatil, Avikshanayanagowda, Nguruprasad</i>	
Comparative Study of Hashing and Analysis of Collision Resolution Techniques .....	358
<i>Aviksha Nayana Gowda, Anshumali M, N Guruprasad</i>	

Artificial Intelligence in Supply Chain Optimization.....	362
<i>Nisha Kumari, Deepika Chaudhary, Harmanjot Kaur, Anup Lal Yadav</i>	
Study and Identification of Various Factors for Outbreak Classification Towards Sustainable Healthcare Sector .....	368
<i>Ishan Saluja, Shantu Sharma</i>	
Design of Real-Time GPS Tracker Using ESP-8266 with Blynk Application .....	374
<i>Yogesh Kumar Verma, Musi Jagadeesh, Palvai Manoj Kumar, Haytham Ibrahim Younis, Manoj Singh Adhikari</i>	
AutoBot: A Semi-Autonomous Bot.....	380
<i>Rithwick Sethi, Diksha Chauhan</i>	
Security Issues in Wireless Sensor Network: A Review .....	385
<i>Sadaf Athar Khan, Noushad Ahmed, Rishabh Chauhan, Pawan Singh Mehra</i>	
Chat GPT & Google Bard AI: A Review.....	392
<i>Shashi Kant Singh, Shubham Kumar, Pawan Singh Mehra</i>	
Energy Management Techniques of Wireless Sensor Networks for Internet of Things Applications .....	398
<i>Manish Kumar Singh, Divankar Saxena, Avanish Rai, Durgesh Kushwaha</i>	
Wearable Devices in the IoT: A Security and Privacy Perspective.....	404
<i>A R Vaishnavi, Sahana G, N Guruprasad</i>	
Comparative Study of Recursive and Non-Recursive Approach in TREE Traversal .....	408
<i>Srusti G, Varsha M, N Guruprasad</i>	
Development of an IoT-Based Daylight Responsive Lighting Control & Monitoring System for Interior Environments.....	411
<i>Ashim Mondal, Samim Aktar, Pallav Dutta</i>	
PlaceIT: The Placement Auxiliary .....	418
<i>Bhawana Dakhare, Amruta Dange, Janak Avhad, Premkumar Yadav, Nimish Boda</i>	
IoT in Healthcare: Reducing EMS Delivery Time Using IoT & Realtime Geospatial Query Engine.....	424
<i>Aman Kumar Pandey, Shashank Mehta, N Guruprasad</i>	
Transforming Oilseed Production with the Power of IoT: Opportunities and Challenges .....	429
<i>Hardik Jain, Sanjeev Gosai, N Guruprasad</i>	
Revolutionizing Renewable Sources of Energy Using IoT: Impact and Challenges .....	435
<i>Pratik Kanchan, Avishkar Kumar Singh, N Guruprasad</i>	
Smart Bottle to Revolutionise Healthcare Industry .....	440
<i>Monica P, Navya Narendra, Guruprasad</i>	
Artificial Neural Network Based Smart Street Light System.....	444
<i>Sanjana Vikram Byakod, Yukthi Manawat, Guruprasad</i>	
Finite Element Analysis of PCE Gas Sensor Based on Acoustic Resonator.....	448
<i>Raju Patel, Deepak. M, Mohammed Asif. S, Devaraj. M, S. K. Tripathi</i>	
Cardiovascular Disease Prediction: Performance Analysis and Comparison of Various Supervised Machine Learning Algorithms.....	453
<i>Ritika Garg, Pradeeptha Kumar Sarangi, Ashok Kumar Sahoo, Jayant Jha</i>	

Solar Based Wireless Dynamic Electric Vehicle Charging System .....	459
<i>Virendra Kumar Chaudhari, Kirti Nishad, Kirti Patel, Sakshi Vishwakarma, Atul Sharma, Vijay Pratap Singh</i>	
Deepfake Detection Using CNN and DCGANS to Drop-Out Fake Multimedia Content: A Hybrid Approach .....	463
<i>Kartik Bansal, Shubhi Agarwal, Narayan Vyas</i>	
A Modified Air Cooler with Automatic Temperature Controller.....	469
<i>Abhishek Sharma, Apurv Pratap Singh, Ritesh Ranjan, Nityanshu Tiwari, Sandip Kumar, Anuj Kumar, R. K. Patel</i>	
Robots, Revolutionizing the Practice of Law: A Bright Future Ahead .....	474
<i>Ravi Kant, Anil Dixit, Minakshi Memoria</i>	
A Keyhole-Shaped Wearable Wideband Antenna with Partial Ground Plane for ISM, WiMAX & WLAN Applications.....	480
<i>Saurabh Kumar, Shivani Anand, Gagandeep Bharti</i>	
Design of Stacked Ring Dielectric Resonator Antenna (DRA) for WLAN and WiMAX Applications.....	484
<i>Binnu Yadav, Shivani Anand, Gagandeep Bharti</i>	
MEDYAANIA: A Complete Telemedicine System.....	490
<i>Saravanan Parthasarathy, Vaishnavi Jayaraman, Aaron Mathias</i>	
Joint Symbol and ToA Estimation in RIS-Assisted UWB Indoor Localization .....	498
<i>Rahul K. Hindustani, Sanjeev Sharma, Dharmendra Dixit</i>	
Design and Implementation of Snake Detection Cum Repellent Device .....	503
<i>Vaishnavi Gupta, Amarjeet Singh, Priyanjali, Dibyanshu Yadav, Arjun Dikshit, Tirumalasetty Chiranjeevi, Awadhesh Kumar</i>	
Real-Time Pedestrian Detection Using Local Regression Based YOLOv6 .....	509
<i>Ravinder Kaur, Jitendra Singh</i>	
Intelligent Healthcare: Using NLP and ML to Power Chatbots for Improved Assistance.....	514
<i>Rajasrikar Punugoti, Ronak Duggar, Risha Ranganath Dhargalkar, Neha Bhati</i>	
Boosting the Accuracy of Cardiovascular Disease Prediction Through SMOTE.....	520
<i>Rajasrikar Punugoti, Vishal Dutt, Abhishek Kumar, Neha Bhati</i>	
Big Data Analytics on Twitter Sentiments in Cloud Environment: A Review.....	526
<i>Durgesh Kumar, Rajendra Kumar Dwivedi</i>	
A Post-Quantum Consortium Blockchain Based Secure EHR Framework.....	533
<i>Abhilasha Bansal, Arju, Esha, Pawan Singh Mehra</i>	
Design of an IoT Based Soil Monitoring System .....	539
<i>T. Swathi, Rasiga TD, S. Sudha</i>	
Triangular-Shaped Patch Antenna with Insertion of DGS for 5G Wireless Applications.....	545
<i>Sachin S Khade, Devyani Malode, Anagha Surtikar, Chitra V. Bawankar</i>	
Performance Analysis of FSO Communication System Using NRZ-MSK-PSK Hybrid Modulation Techniques.....	549
<i>Saumya Srivastava, Harmeet Singh</i>	

An Efficient Approach of True Random Number Generation Using a Data Encryption Method in Security & Cryptography Algorithm .....	553
<i>Prateek Agnihotri, Preeti Agarwal Mittal</i>	
Analysis of Machine Learning Algorithms for Digit and Alphabet Recognition: A Review .....	561
<i>Sonia Juneja, Shagun Srivastva, Sonia Tomer, Pallavi Gangwar, Yashika Tyagi</i>	
Artificial Intelligence Based Heatwave Intensity Prediction Model .....	567
<i>Aniruddha Mane, Nakul Lekurwale, Priya Maidamwar, Prashant Khobragade, Snehlata Dongre</i>	
Framework to Create Sentiment Lexicons for Extremism Detection in Text Documents .....	572
<i>Vijay, Pushpneel Verma</i>	
Energy Efficient Hybrid Routing for Different Energy Levels Using Fuzzy Logic .....	578
<i>Kalpana Singh, Prashant Pandey, Firoj Ahamad</i>	
IoT Based Data Protection Technique for Security and Privacy Preserving in Cloud ERP.....	584
<i>Ekta Sabbarwal, Daya Shankar Pandey</i>	
A Robust Team Building Recommendation System by Leveraging Personality Traits Through MBTI and Deep Learning Frameworks.....	589
<i>Silpa N, Maheswara Rao V R, M. Venkata Subbarao, M Pradeep, Challa Ram Grandhi, Adina Karunasri</i>	
Vision-Guided Robot for Product Inspection .....	595
<i>Aalan Natarajan, Pramod S, Rajesh Kannan Megalingam</i>	
Outage Probability Analysis of Energy Harvesting-Enabled Three-Phase Two-Way Relaying System Over Mixed Fading Channels .....	601
<i>Raghwendra Kishore Singh, Soumendu Das, Dharmendra Dixit, Nagendra Kumar</i>	
Prediction of Carbon Footprint Due to Meat Industry .....	606
<i>Divesh Watwani, Vivek Gonal, Parth Wadke, Prithviraj Chavan, Sunita Sahu</i>	
Neural Network Architecture for ROI Segmentation Based on Melanoma Detection .....	611
<i>Pallavi Singh, Kavitha B. C, P. Naveen, N. Koushik Reddy</i>	
Investigating Tree Family Machine Learning Algorithm for Solar Power Prediction of 150 KW PV Array System.....	616
<i>Neha Sanewal, Vandana Khanna</i>	
Vehicle Detection and Lane Keep Assist System for Self-Driving Cars .....	621
<i>Palepu Sai Sri Harsha, Cherishma Reddy Sriyapu Reddy, Tirumalasetty Nikhil Venkata Sai, Sreeja Kochuvila</i>	
Smart City Transport Updater.....	626
<i>Kavitha B. C, Pallavi Singh, K. Leela Vardhan, D. Deepak</i>	
Mathematical Modelling & Simulation of Synchronous Buck Converter and Analysis of Its Simulation Results.....	630
<i>J. G. Yadav, Yogesh Kumar Yadav, Navneet Kumar</i>	
Emerging Trends in Smart Manufacturing: A Bibliometric Analysis .....	636
<i>Ramneet Kaur, Deepam Goyal, Deepali Gupta, Rajeev Kumar Dang</i>	

Land Use Land Cover Classification for REL River Using Machine Learning Techniques .....	643
<i>Keval H Jodhani, Keval H Jodhani, Dhruvesh Patel, N. Madhavan</i>	
Exploring Students' Perceptions of Individual Performance in Online Learning .....	646
<i>Leni Susanti, Doni Purnama Alamsyah, Oda I. B. Hariyanto, Norfaridatul Akmaliah Othman</i>	
Exploring the Significance of E-Learning Quality, Usefulness, and Effectiveness on Student Intention .....	652
<i>Satrio Matin Utomo, Doni Purnama Alamsyah, Heni Rohaeni, Boby Siswanto</i>	
Computer Vision Based Detection of Weed in Ginger and Sugarcane Crop for Automated Farming System .....	658
<i>Swati Shilaskar, Rushikesh Gholap, Shripad Bhatlawande, Nishad Ranade, Shubham Ghadge</i>	
Flight Data Recorder / Cockpit Voice Recorder Location Tracker Using GPS, GSM, and Vibration Sensor in Case of an Aircraft Accident.....	665
<i>O. K. Ashikur Rahaman, M. Vallarasu, G. Balaji, M. Vinyojita, R. Sarweswaran, S. Seralathan</i>	
Blockchain Security for the Internet of Things Enabled Business Services .....	670
<i>Mohini Preetam Singh, Anishka Sharma, Pratyush Gupta, Aryan Mittal</i>	
Leveraging Artificial Intelligence and Machine Learning for Enhanced Crop Yield: A Crop Recommendation System for Indian Agriculture .....	681
<i>Saksham Mishra, Manish Gupta</i>	
Meta-Analysis of Artificial Intelligence Solution for Prevention of Violence Against Women and Girls.....	686
<i>Reena Roy, Anil Kumar Dixit, Sagar Saxena, Minakshi Memoria</i>	
To Enhance a System for Predicting Cardiovascular Disease Using Feature Selection .....	692
<i>Shubham Gupta, Vikas Prasad Mishra, Sandhya Gawade, Vibhor Sharma, Madhur Thapliyal</i>	
Smart Farming Using Machine Learning and Deep Learning: A Review .....	698
<i>Preeti Dhone, Neha Purohit, Prasad P. Lokulwar</i>	
An IoT Based Approach to Smart Surveillance System .....	705
<i>Abhijeet Singh, Parag Gupta, Vaidehi Sankhe, Maya Patil</i>	
Big Data Privacy: A Survey Paper.....	711
<i>Manish Kumar Gupta, Ashok Kumar Rai, Bipin Pandey, Anurag Gupta, Vipul Kumar Verma</i>	
Analysis & Development of Automatic Writing and Drawing Machine .....	717
<i>Ranjeet Singh, Himanshu Singh, Harsh Pandey, Piyush Srivastava</i>	
Mapping the Scientific Landscape of Internet of Things and Artificial Intelligence Using VOSViewer .....	722
<i>Tanishq Soni, Deepali Gupta, Mudita Uppal, Gifty Gupta</i>	
Dumpy: A Waste Management App.....	726
<i>Chetan S R, Adithya B Karanth, Dheeraj D, Rohan Singh R, Jaideep Arun</i>	
Improvements in Filters of Strapdown Inertial Navigation System .....	730
<i>L. Nemani Kumar, Neeraj Gupta, Sweta Tripathi</i>	
A Study on in-Flight Alignment Methods and Error Modelling of Strapdown Inertial Navigation Systems (SINS) .....	735
<i>A. Sahiti Sandhya Vani, Sweta Tripathi, Neeraj Gupta</i>	

Virtual Private Network: A Study of Its Various Aspects .....	743
<i>Sanjay Hardikar, Sameer Rajan, Saraswati Parmar</i>	
Design of a High Gain MIMO Dielectric Resonator Antenna for 5G mm-Wave Applications.....	750
<i>Sikandar, Anand Sharma, Jayant Kumar Rai, Himanshu Katiyar</i>	
Design and Performance Analysis of a Lightweight Authentication Protocol for Vehicular Ad-Hoc Networks .....	755
<i>Pranav Sahu, Vinod Kumar</i>	
Advanced Cooling Technique to Improve Efficiency of Solar Panel .....	761
<i>Ritik Solanki, Vijay Singh, Lokesh Varshney, Kanhaiya Kumar</i>	
Identification of Fake News Using Machine Learning and Deep Learning .....	767
<i>Naeema Ahmed, Mukesh Rawat</i>	
Performance Evaluation of Blockchain Platforms.....	772
<i>Manish Kumar Gupta, Rajendra Kumar Dwivedi, Annu Sharma, Mansoor Farooq, Britto Raj S</i>	
New Exact ABER for MRC Receiver in $\kappa\mu$ Faded Channels.....	778
<i>Dharmendra Dixit, Prashant Pandey, P. K. Verma, Deepak Sigroha, D. K. Tripathi</i>	
Exploring the Power of Big Data for IoT: A Comprehensive Review.....	783
<i>Sanjay Kumar Gupta, Shivam Kumar Yadav, Sanjay Kumar Soni</i>	
Wireless Sensor Networks for Natural Disaster Management - A Survey.....	789
<i>Manpreet Singh, Kapil Sharma</i>	
A Survey of IoT and Machine Learning Based Monitoring of the Growth of Crops Using Blockchain Technology .....	796
<i>Randheer Yadav, Rahul Saroj, Alok Kumar Verma, Ashish Kumar Mishra</i>	
A Survey Paper on Optimization of LEACH Protocols for Efficient Clustering in WSN.....	803
<i>Sourabh Arya, Gulab, Ashish Kumar Mishra, Shivendra Kumar Pandey</i>	
Wavelet-Based Feature Extraction and RCNN for ECG Signal Classification .....	810
<i>Ranjana Singh, Sristi Gangwar, Shikha Bartwal, Vivek Tomar</i>	
Role of Feature Selection in Healthcare 4.0 .....	816
<i>Amit Kishor, Chinmay Chakraborty</i>	
CNN-Based Image Classification for Face-Spoof Detection Using AI and ML .....	820
<i>Km Pushpanjali, Shashank Srivastav</i>	
A Review of Various Image Processing Techniques for UAV Based Photogrammetry.....	824
<i>Roshani Kumari, Deepam Dubey</i>	
A Perspective View of Bio-Inspire Approaches Employing in Wireless Sensor Networks .....	829
<i>Ved Prakash, Ashish Ranjan Mishra, Suman Pandey</i>	
Hybrid Machine Learning Approaches for Multi Disease Prediction Utilizing Relief Feature Selection .....	837
<i>Ashima, Manoj Kapil</i>	
Intelligent Task Scheduling in Multi UAVs During the Flood Relief Operation .....	843
<i>Ajith V S, Jolly Kg, Vidhya K</i>	

A Data Safety Approach Based on Image Steganography .....	848
<i>Vaibhavi Sushil, Shashank Srivastav</i>	
Comparative Study of DDoS Attacks & Tools and Their Analysis .....	854
<i>Mandhar Goel, Shivam Singh, Anmol Garg, Nihar Ranjan Roy</i>	
Online Power Quality Assessment of Microgrid with EVs in Vehicle-To-Grid Configuration .....	862
<i>Tanishka Kushwah, Tusharika Sharma, Pooja Goyal, Jahanvi, Vartika Jain, Ajay Kumar Saxena, Rajat Kumar</i>	
An RNN-Based Resource Allocation Strategy in Cloud Computing .....	867
<i>Nikhil Purohit, Prakash Srivastava, Priyank Pandey</i>	
Exploring the Applications and Advances in 3D Imaging and 3D Reconstruction .....	873
<i>Usha Mary Sharma, Raman Chadha</i>	
The Utilization of Machine Learning Algorithms in the Diagnosis of Heart Disease .....	879
<i>Ankit Dutt, Swati Sharma</i>	

#### **Author Index**