

Content

Sr. No.	Paper ID	Paper Title	Page No
SESSION 1: COMPUTER NETWORK			
01.1	1570761931	DDoS Explainer Using Interpretable Machine Learning	0001
01.2	1570759379	Embedding Emojis to Redefine Gaze-Point and Scan-Path in a Visual Centre Field	0008
01.3	1570764788	NetBot - an Automated Router Hardening Solution for Small to Medium Enterprises	0015
01.4	1570754096	The Application of the Graph Laplacian in Network Forensics	0022
01.5	1570762573	Investigation of Bandwidth Reservation for Segment Routing	0029
01.6	1570764768	"Roomeet" Communication Tool to Support Online Learning Management During the Covid-19 Pandemic	0034
SESSION 2: COMPUTATION , ALGORITHMS AND NETWORK SECURITY			
02.1	1570762228	BlindAid - Android-Based Mobile Application Guide for Visually Challenged People	0039
02.2	1570762103	Neighborhood Search in Differential Evolution for Solving Trusted Ridesharing Problems	0046
02.3	1570760619	Database Optimization of Fingerprint-Based Indoor Positioning System Using Genetic Algorithm	0052
02.4	1570762627	Document Clustering Analysis Based on Hybrid Cuckoo Search and K-Means Algorithm	0058
02.5	1570764540	Machine Learning Algorithms and Their Application in Classifying Cyber-Attacks on a Smart Grid Networks	0063
02.6	1570764641	Security for Internet OF Things-IOT	0070
SESSION 3: COMPUTER NETWORK			
03.1	1570748777	Web and Mobile Application Based Missing Query Platform (Lost and Found BD)	0074
03.2	1570762562	Precise Estimation of Local Probabilities for Bayesian Attack Graph Analysis	0080
03.3	1570762123	Using CNN to Optimize Traffic Classification for Smart Homes in 5G Era	0086
03.4	1570762555	An Experimental Study on Load Balancing for a Software Defined Network Based Virtualized Network Functions Platform	0092

03.5	1570762223	Using Deep Q-Network in Bandwidth Allocation of Smart Homes	0098
SESSION 4: IMAGE PROCESSING AND MULTIMEDIA TECHNOLOGY			
04.1	1570764848	Efficient FPGA Implementation of Parameterized Real Time Color Based Object Tracking	0102
04.2	1570761210	Face Mask Detection: A Real-Time Android Application Based on Deep Learning Modeling	0106
04.3	1570764828	An Active Learning Model for Seagrass Detection in Remote Sensing Imagery	0113
04.4	1570764176	Marine Vehicle Tracking Using Agile Maritime IoTs	0119
04.5	1570764678	A Lightweight Underwater Object Detection Model : FL-YOLOV3-TINY	0127
04.6	1570746443	Hand Gesture Based Virtual Blackboard Using Webcam	0134
SESSION 5: IMAGE PROCESSING , MULTIMEDIA TECHNOLOGY AND DISTRIBUTED SYSTEMS			
05.1	1570749075	Convolutional Neural Network Based Skin Cancer Detection (Malignant Vs Benign)	0141
05.2	1570764561	I-Police - an Intelligent Policing System Through Public Area Surveillance	0148
05.3	1570759661	A Medical Imaging Review for COVID-19 Detection and Its Comparison to Pneumonia	0155
05.4	1570759662	Survey of Face Liveness Detection for Unsupervised Locations	0162
05.5	1570762549	Bengali License Plate Recognition From Noisy Video Footage Using Deep Learning	0169
05.6	1570762553	Siamese Network Based Pulse and Signal Attribute Identification	0176
SESSION 6: SIGNAL DETECTION AND PROCESSING			
06.1	1570764878	Impact of Fractal Musical Signals on the Human Brain: A Proposed EEG Study	0180
06.2	1570755790	A Data-Driven Hybrid Optimization Based Deep Network Model for Short-Term Residential Load Forecasting	0187
06.3	1570760953	BP Polar-Decoding Without SNR Estimation	0194
06.4	1570760882	Development of Spectral Speech Features for Deception Detection Using Neural Networks	0198
06.5	1570763581	Agile Target Tracking Based on Greedy Information Gain	0204
06.6	1570760519	Smartphone Mode Detection for Positioning Using Inertial Sensor	0209
SESSION 7: SOFTWARE ENGINEERING			

07.1	1570762040	Tievs: Classified Advertising Enhanced Using Machine Learning Techniques	0216
07.2	1570762287	Comparative Analysis of SPL-Specific Genetic Algorithm and XML Filtering Technique for Multi-Tenant SaaS Configuration Management	0223
07.3	1570762521	PyPacho: A Python Library That Implements Parallel Basic Operations on GPUs	0229
07.4	1570747251	Effect of COVID-19 on Medical Intern Students: Bangladesh Perspective	0239
07.5	1570758633	Smart Agriculture Prediction System for Vegetables Grown in Sri Lanka	0246
07.6	1570762116	A Blockchain-Based Software Always-On System	0252
SESSION 8: IMAGE PROCESSING AND MULTIMEDIA TECHNOLOGY			
08.1	1570762593	Softmax Pooling for Super Visual Semantic Embedding	0258
08.2	1570762713	Exploiting Deep Metric Learning for Mable Quality Assessment With Small and Imbalanced Image Data	0266
08.3	1570764568	Smart Assistant to Ease the Process of COVID-19 and Pneumonia Detection	0270
08.4	1570764633	ARChem :Augmented Reality Chemistry Lab	0276
08.5	1570764640	Facial Action Unit Detection With ViT and Perceiver Using Landmark Patches	0281
08.6	1570764761	A Steganography-Based Fingerprint Authentication Mechanism to Counter Fake Physical Biometrics and Trojan Horse Attacks	0286
SESSION 9: SIGNAL DETECTION AND PROCESSING ; NETWORK ARCHITECTURES			
09.1	1570762492	Design and Implementation of a Digital Radar Pulse Receiver on FPGA	0293
09.2	1570762522	Using EEG for the Analysis of Heat Stress on Quick Decision-Making	0299
09.3	1570764869	Using Concurrent fNIRS and EEG Measurements to Study Consumer's Preference	0305
09.4	1570764767	Performance Evaluation of SD-WAN Deployment for XYZ Enterprise Company in Indonesia	0311
09.5	1570764854	Lightweight Proactive Moving-Target Defense for Secure Data Exchange in IoT Networks	0317
09.6	1570760678	A Survey on User Authentication Factors	0323
SESSION 10: MOBILE COMPUTING			
10.1	1570746449	Development of a Toxic Food Ingredients Detector	0330
10.2	1570757475	Machine Learning for Location Prediction Using RSSI on Wi-Fi 2:4 GHZ	0336

		Frequency Band	
10.3	1570761886	Dynamic Simulation of a Standalone Photovoltaic Hybrid System of a Remote House in Nigeria	0343
10.4	1570749089	Mobile Application Based Teli-Nutrition System for Covid-19 Pandemic	0350
10.5	1570764765	Addressing Spectrum Scarcity in Indonesia Dense Urban Market by Using 700 MHz for 4G LTE-Advanced Network Deployment	0357
10.6	1570764830	Resource Allocation in Multi-Access Edge Computing: Optimization and Machine Learning	0365
SESSION 11: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING; MOBILE COMPUTING			
11.1	1570760318	Deep Learning on Cryptocurrency - Challenges Processing GPU and CPU Architectures	0371
11.2	1570761336	Second Sight: MobileNet v1 Integration in Dynamic and Time Critical Scenarios	0378
11.3	1570762209	Blood Cancer Recognition Based on Discriminant Gene Expressions: A Comparative Analysis of Optimized Machine Learning Algorithms	0385
11.4	1570762545	Intelligent Vision-Based Malware Classification Using Quantised ResNets	0392
11.5	1570762090	Twitter Sentiment Analysis in Covid-19 Pandemic	0399
11.6	1570749109	Development of A Web Based Covid Portal and Marketplace	0406
SESSION 12: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING AND ROBOTICS			
12.1	1570762273	Remuneration Review: Risk, Planning, and Modelling Beyond the Covid Crisis	0412
12.2	1570762547	ROS-Based Robotic System for Tomato Disease and Ripeness Classification Using Convolutional Neural Networks	0420
12.3	1570764866	Topic Modeling and Sentiment Analysis Using Online Reviews for Bangladesh Airlines	0428
12.4	1570761074	Double-State-Temporal Difference Learning for Resource Provisioning in Uncertain Fog Computing Environment	0435
12.5	1570762524	User-Friendly Enhanced Machine Learning-Based Railway Management System for Sri Lanka	0441
12.6	1570762417	Implementation of Human in the Loop on the TurtleBot Using Reinforced Learning Methods and Robot Operating System (ROS)	0448
SESSION 13: NATURAL LANGUAGE PROCESSING ; ARTIFICIAL INTELLIGENCE			
13.1	1570752989	Price Prediction Using LSTM Based Machine Learning Models	0453
13.2	1570761223	Analyzing BTC's Trend During COVID-19 Using A Sentiment Consensus Clustering (SCC)	0460

13.3	1570762540	A Survey of Deep Learning Methods on Semantic Similarity and Sentence Modeling	0466
13.4	1570764813	Analysis of Different Types of Word Representations and Neural Networks on Sentiment Classification Tasks	0473
13.5	1570751680	Prediction of Stock Market Using Recurrent Neural Network	0479
13.6	1570762234	Speech Master: Natural Language Processing, and Deep Learning Approach for Automated Speech Evaluation	0484
SESSION 14: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING			
14.1	1570764881	The Rise and Fall of Bitcoin: Predicting Market Direction Using Machine Learning Models	0491
14.2	1570762393	Missing Data Imputation and Meta-Analysis on Correlation of Spatio-Temporal Weather Series Data	0496
14.3	1570762461	Anomaly Detection in Election Data and Its Representation of U:S: Infrastructure Vulnerability	0503
14.4	1570762498	Missing Data: Comparison of Multiple-Imputation Algorithms for Social Determinants of Health in Cervical Cancer Stage Detection	0509
14.5	1570762548	An Empirical Study of the GraphSAGE and Word2vec Algorithms for Graph Multiclass Classification	0515
14.6	1570762550	Using Artificial Bias to Assist Evasive Maneuvering of Fighter Aircrafts in Combat Situations	0523
SESSION 15: INTERNET OF THINGS			
15.1	1570764850	Design and Implementation of IoT Based Cloud Enabled Wireless Biometric Monitoring Device	0530
15.2	1570762266	An Event-Driven Authentication Approach for Mediation of User Actions	0534
15.3	1570761044	The Role of Subject Confidence and Historical Deception in Mis/Disinformation Vulnerability	0541
15.4	1570761051	Random Access Process Enhancements for Cellular Internet of Things (CIoT)	0547
15.5	1570764639	An IoT-Based Complete Smart Drainage System for a Smart City	0553
15.6	1570761015	Deep Neural Networks for Time Series Classification in Human Activity Recognition	0559
SESSION 16: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING ; IoT			
16.1	1570764434	Pothole Detection Using Advanced Neural Networks	0567
16.2	1570764836	Deep Convolutional Neural Networks-Based Sign Language Recognition System	0573
16.3	1570762119	Innovative FOTA-Based Software Update for IoT MESH Network	0577
16.4	1570762574	Design and Development of an Integrated Internet of Audio and Video Sensors for COVID-19 Coughing and Sneezing Recognition	0583

16.5	1570762589	A Hybrid Approach for IoT Botnet Attack Detection	0590
SESSION 17: INTERNET OF THINGS AND CLOUD COMPUTING			
17.1	1570764306	A Machine Learning Framework for Intrusion Detection System in IoT Networks Using an Ensemble Feature Selection Method	0593
17.2	1570764654	IoT Application Development Based on Java and Raspberry Pi	0600
17.3	1570764837	Where in the World is My Suitcase? Air Passenger Luggage Tracking Using RFID Tags	0607
17.4	1570764851	A Novel Method for Automated Identification and Prediction of Invasive Species Using Deep Learning	0614
17.5	1570762044	Developing Machine Learning and Deep Learning Models for Host Overload Detection in Cloud Data Center	0619
17.6	1570765270	Modelling Crowd Dynamics and Crowd Management Strategies	0627
SESSION 18: BIG DATA AND ROBOTICS			
18.1	1570753943	An Ensemble Machine Learning Approach for Time Series Forecasting of COVID-19 Cases	0633
18.2	1570751684	Electronic iDrop Aid: Servo Motor Based Arduino Controlled Automated Solution for Disposal of iDrop	0641
18.3	1570764662	Optimization of Transmission Strategy for Wireless Power Transfer Using Multi-Armed Bandit Algorithm	0646
18.4	1570761710	Unmanned Aerial Vehicles Against Covid-19 Pandemic: Main Applications and Limitations	0651
18.5	1570746442	Metro Rail Tracking System in Bangladesh	0656
18.6	1570762552	Predicting Home Care Use After Assessment Using Multiple Machine Learning Methods	0662
SESSION 19: ROBOTICS, AI, AD HOC AND CLOUD NETWORKS			
19.1	1570762499	Edge Intelligence Based Collaborative Learning System for IoT Edge	0667
19.2	1570743246	Apache and HTTP/2 in the Cloud: A Comparative Study of Apache Architecture in AWS	0673
19.3	1570760988	A Model Simulation and Analyses for Resource Allocation Scheme in V2V Communications With Deep Q Network	0681
19.4	1570762270	LS-AODV: An Energy Balancing Routing Algorithm for Mobile Ad Hoc Networks	0689
19.5	1570762554	Understanding the Transaction Placement Problem in Blockchain Sharding Protocols	0695
19.6	1570764403	Effectiveness of Lockdown in Karnataka During the Second Wave of COVID-19	0702

SESSION 20: VLSI AND MICROELECTRONIC CIRCUIT EMBEDDED SYSTEMS			
20.1	1570747725	CMOS Transistor-Based Memristor Emulator Circuit Design for High Frequency Applications	0708
20.2	1570762197	VGSOT MRAM Design and Performance Analysis	0715
20.3	1570762251	Modeling the Effects of SBD, HCI, and NBTI in CMOS Voltage Controlled Oscillator Design for PLL Applications	0720
20.4	1570762198	Design Process and Performance Analysis of Two Stage Differential Op-Amp by Varying the Body Biasing in Fully Depleted Silicon on Insulator Technology	0726
20.5	1570761228	A Low Power MoS ₂ TFET-Based Op-Amp Design for Computational Circuits	0731
20.6	1570762533	Developing Attack Resilience in Y86 Processor Using Logic Locking	0737
SESSION 21: FPGA AND ELECTRIC VEHICLE TECHNOLOGIES			
21.1	1570761035	Design and Analysis of a Practical RMS Power Detector Using Power MOSFET	0744
21.2	1570762512	Symmetric Large Size Unsigned Multiplication Using Embedded DSP Blocks in FPGAs	0749
21.3	1570762311	An Effective Approach for Implementing COVID-19 CT Lung Segmentation Using Low-Cost System on Chip	0754
21.4	1570762536	Frequency Optimized FPGA-Based Digital FIR Filters With Data Inputs and Coefficients of Large Size	0760
21.5	1570758529	Design and Simulation of a Wind Turbine Powered Electric Car Charging System for St. John's, NL	0765
21.6	1570764844	An Optimized FPGA Based Box-Muller Gaussian Random Number Generator Architecture for Communication Applications	0772
SESSION 22: ELECTRONIC INSTRUMENTATIONS			
22.1	1570764753	Energy Saving Inverter on A Single-Phase Induction Motor for Albumin Production Process	0778
22.2	1570761738	A Circuit Design of a Sensor Amplifier for Improving Blood Pressure Measurement in Telehealth System	0783
22.3	1570748450	Development of a Smart Automatic Gas Leakage Detector and Alarming System	0789
22.4	1570761794	A Double Precision Arbitrary Waveform Generator Based Calibration System for Low-Value AC Resistors Up to 20 kHz	0796
22.5	1570762180	A Study of the Efficiency of an LTC3108-Based Circuit for Thermal Energy Harvesting	0799
22.6	1570761039	A Linear-In-Decibel RF Power Detector for Microwave Measurements in the S-Band Frequency Using CMOS Technology	0805

SESSION 23: ELECTRONIC INSTRUMENTATIONS AND ELECTRONIC POWER CONVERTERS			
23.1	1570764705	Maximum Power Point Tracking for Solar Photovoltaic System Using Synchronous Reference Frame Theory	0811
23.2	1570764447	Design of an Optimal Hybrid Energy System for a Captive Power Plant in Pakistan	0820
23.3	1570764653	Techno-Economic Comparison of Emerging Solar PV Modules for Utility Scale PV Installation	0827
23.4	1570756999	A Weighting Factor Online Tuning Method Based PSO Algorithm for MPTC Strategy of PMSM	0834
23.5	1570757873	MPPT Techniques Comparison for a Small-Scale PVRO System in Iran	0840
SESSION 24: ELECTRONIC POWER CONVERTERS ,ADAPTIVE CONTROL			
24.1	1570762527	Implementation of Forward Converter With Active Clamp for Welding Machines	0847
24.2	1570762565	An Improved Switched Capacitor Multi-Level Inverter Topology With Boosting Capability and Reduced Component Count	0853
24.3	1570762262	Hyperswarms: A New Architecture for Amplifying Collective Intelligence	0858
24.4	1570762252	Adaptive Secondary Frequency Control of Islanded AC Microgrids Subjected to Disturbances	0865
24.5	1570761547	Grid Architecture Model for Smart Grid	0871
24.6	1570762141	Neighborhood Search for Process Resource Configuration in Cyber Physical Systems	0877
SESSION 25: COMMUNICATIONS SYSTEMS			
25.1	1570764775	Reliability of Mobile Edge Computing With Optical Wireless Relays	0882
25.2	1570764816	BUDI: Building Urban Designs Interactively: A Spatial-Based Visualization and Collaboration Platform for Urban Planning	0888
25.3	1570751676	Hajji Tracker: Development of Web-Based GPS Tracking System for Pilgrims	0896
25.4	1570762424	A Stackelberg Based Leadership Algorithm for RAT Selection in Heterogeneous Networks	0902
25.5	1570756773	A Light-Based Interpretation of Euler's Identity With Implications on Quantum Computation	0908
SESSION 26: NETWORK ARCHITECTURES , COGNITIVE RADIO			
26.1	1570760529	Design, Analysis, and Study of Fractal MIMO Antenna With Dual Filters for UWB/X/Partial Ku Band Wireless Applications	0915
26.2	1570764842	Scientific Workflow Provenance Architecture for Heterogeneous HPC Environments	0921

26.3	1570762396	Maximization of the User Association of a Low-Power Tier Deploying Biased User Association Scheme in Multi-Tier Heterogeneous Network	0928
26.4	1570761360	Evaluation of a Bio-Socially Inspired Secure DSA Scheme Using Testbed-Calibrated Hybrid Simulations	0934
26.5	1570763312	A Deep Reinforcement Learning: Location-Based Resource Allocation for Congested C-V2X Scenario	0940
SESSION 27: NETWORK SECURITY			
27.1	1570761482	Isomorphic Cipher Reduction	0947
27.2	1570764292	SOME/IP Intrusion Detection Using Deep Learning-Based Sequential Models in Automotive Ethernet Networks	0954
27.3	1570764858	Smart Blockchain-based Control-data Protection Framework for Trustworthy Smart Grid Operations	0963
27.4	1570761470	Key Space Reduction Using Isomorphs	0970
SESSION 28: TELECOMMUNICATION SYSTEMS & WIRELESS SENSOR NETWORKS			
28.1	1570764643	On the Bandwidth Efficiency of D2D Link Adaptation Under Co-Channel Interference	0976
28.2	1570762194	Intelligent Crowd-Sourced 5G Heat-Map With Event-Driven Architecture	0982
28.3	1570763528	Adaptive Time-Frequency Synthesis for Waveform Discernment in Wireless Communications	0988
28.4	1570764637	An Energy Efficient Gravitational Model for Tree Based Routing in Wireless Sensor Networks	0997
28.5	1570760638	Design and Implementation of a Microstrip Patch Antenna for the Detection of Cancers and Tumors in Skeletal Muscle of the Human Body Using ISM Band	1003
SESSION 29: MACHINE LEARNING AND SECURITY			
29.1	1570762502	A Deep Learning Approach to Predict Chronic Kidney Disease in Human	1010
29.2	1570762571	Deep Learning to Improve False Data Injection Attack Detection in Cooperative Intelligent Transportation Systems	1016
29.3	1570764609	Performance Study of Image Data Augmentation by Generative Adversarial Networks	1022
29.4	1570764786	Public Sector Digital Transformation: Challenges for Information Technology Leaders	1027
29.5	1570762246	Debris Object Detection Caused by Vehicle Accidents Using UAV and Deep Learning Techniques	1034
SESSION 30: MACHINE LEARNING AND WIRELESS MULTICASTING			
30.1	1570764437	Design and Performance Analysis of Monopole Antenna for the Detection of Early-Stage Hepatocellular Carcinoma (HCC) in Human Liver	1040

30.2	1570762541	An Experimental Validation of a Thermoelectric Generator LTspice Model for Energy Harvesting	1046
30.3	1570764787	Modeling and Predicting the Ionospheric Total Electron Content Over Western China With Machine Learning	1052
30.4	1570761865	A Case for Splitting a File for Data Placement in a Distributed Scientific Workflow	1058
SESSION 31: MACHINE LEARNING			
31.1	1570762342	Masa: AI-Adaptive Mobile App for Sustainable Agriculture	1064
31.2	1570762379	Fuzzy Based User-Centric Smart Approach to Prevent Unhealthy Eating Habit Crisis	1070
31.3	1570764290	Creation of a Knowledge Management Model Based on CBR: Application to the Maintenance of Autonomous Solar Photovoltaic Installations	1077
31.4	1570762244	Network Traffic Prediction for a Software Defined Network Based Virtualized Security Functions Platform	1083