

2019 1st International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT 2019)

**Dhaka, Bangladesh
3 – 5 May 2019**

Pages 1-740



**IEEE Catalog Number: CFP19S84-POD
ISBN: 978-1-7281-3446-8**

**Copyright © 2019 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:	CFP19S84-POD
ISBN (Print-On-Demand):	978-1-7281-3446-8
ISBN (Online):	978-1-7281-3445-1

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

Smart Water System at House Using Arduino Uno and C# Desktop Application to Reduce Water Wastage and Energy Loss	1
<i>Arif - Ul - Islam and Shamim H Ripon</i>	
Generating Anime from Real Human Image with Adversarial Training	6
<i>Shuvendu Roy</i>	
Improved Bangla Language Modeling with Convolution	11
<i>Shuvendu Roy</i>	
Cloud-Based Automated Power Consumption Optimization, Power management, and Appliance Control	15
<i>Juglul Hasan, Tanjim Ul Haque, Sabab Hasan</i>	
Denosing Sequence-to-Sequence Modeling for Removing Spelling Mistakes	20
<i>Shuvendu Roy</i>	
Effects of Wave Function Penetration on Gate Capacitance and Threshold Voltage of p-Channel Double Gate Junction Less Transistor	25
<i>Md. Mohsinur Rahman Adnan and Mohammad Shahidur Rahman</i>	
A Performance Improved Kretschmann Configuration Based Surface Plasmon Resonance (SPR) Sensor	30
<i>Tauhidul Haque and Hasan Khaled Rouf</i>	
Design of CMOS On-Chip Transformer Coupled Matching Network for Millimeter-Wave Amplifiers with Optimal Chip Area	34
<i>Md Sazzad Hossain, Minoru Fujishima, Takeshi Yoshida, Shuhei Amakawa and Md. Mamunur Rashid</i>	
Electrical and Morphological Characterization of Zinc-Doped $\alpha - Fe_2O_3$ Thin Films at Different Annealing Temperature	40
<i>Arman Ibn Shahjahann and Abu Bakar Md. Ismail</i>	
Fabrication of Digital Sol-Gel DIP Coating System with Smart Beaker Carrier	44
<i>Sarafat Hussain Abhi, Md. Shoaib Akther and Dr. Md. Faruk Hossain</i>	
Enhancement of Global Bandwidth of Internet Users Employing Internet Exchange Point Leveraging VPN Technology	48
<i>Al- Nahian Bin Emran, Aman Ullah Juman and Gazi Zahirul Islam</i>	
Forecast Upcoming Traffic States by Exploiting Nearest Junctions and Big Data	53
<i>Md. Akter Hossain and Mohammed Nazim Uddin</i>	
Pest-Inspector: An Insect Detection System by Learning Data Representations	60
<i>Md. Akter Hossain, A. H. M Tareq and Mohammed Nazim Uddin</i>	
A Spatiotemporal Analysis and Forecasting of Electricity Generation-Mix in Bangladesh .	67
<i>Sujoy Barua, Anik Nath, Fahim Shahriyar and Nur Mohammad</i>	
Leakage Detection in Water Pipeline Using Microcontroller	72
<i>Muhammad Arman Uddin, Mohammed Mohibul Hossain, Akil Ahmed, Samin Yeasar Seaum and Hasibul Hasan Sabuj</i>	

An IoT Based Green Waste Management System For Bangladesh	76
<i>Mazhar Ibna Zahur, Md. Saidur Rahman, Aysha Akther and Kazi Masudul Alam</i>	
An Intelligent Assistive Tool for Alzheimers Patient	82
<i>Kazi Shahrukh Omar, Afia Anjum, Tahrima Oannahary, Md. Rezaul Karim Rizvi, Diana Shahrin, Tasmiah Tamzid Anannya, Sanjida Nasreen Tumpa, Md Mahboob Karim, Muhammad Nazrul Islam, Md Fazle Rabbi</i>	
Genetic Expression Analysis To Detect Type Of Leukemia Using Machine Learning	88
<i>Umid Dey and Md Sajjatul Islam</i>	
Design of CMOS On-Chip Millimeter-Wave Transformer Coupled Balun and Power Divider- Combiner with Optimal Amplitude and Phase Imbalance	94
<i>Md. Sazzad Hossain, Minoru Fujishima, Takeshi Yoshida, Shuhei Amakawa and Md. Mamunur Rashid</i>	
Real-time Water Vehicle Monitoring and Tracking System for Bangladesh	101
<i>Dr. Mohammad Salah Uddin and Md.Naim Khan</i>	
A Prototype of Automated Vault Locker Solution for Industrial Application	106
<i>Shafayet Hossain, Mazid Ishtique Ahmed and Md. Niaz Mostakim</i>	
A Strategic Routing Analysis for Agro Sensor Communications in Mobile Ad hoc Networks	112
<i>Sampad Banik, Md Munjure Mowla and Iftekhar Ahmad</i>	
Land-Use Detection Using Residual Convolutional Neural Network	118
<i>Shuvendu Roy and Sneha Paul</i>	
Transmission Side Signal Processing Technique to Mitigate Impulsive Noise in Power Line Communication	124
<i>Md. Waqeeb Tahmeed Sayeed Chowdhury, Muhammad Safin Alam and Abidur Rahman</i>	
Pathological Voice Classification Using Deep Learning	131
<i>Shuvendu Roy, Md Ijaz Sayim and M. A. H. Akhand</i>	
The Third Tab (3T): Assistant for Visually Impaired People	137
<i>Sohal Islam, Md. Jakaria Rahimi and Kazi Arham Kabir</i>	
RoboFI: Autonomous Path Follower Robot for Human Body Detection and Geolocalization for Search and Rescue Missions using Computer Vision and IoT	143
<i>Ahmed Imteaj, M A Isfar Jubair Chowdhury, Mohammad Farshid and Abdur R Shahid</i>	
Towards Developing an Intelligent Automated Water Pumping System for Dhaka City ...	149
<i>Kazi Md. Munim, Iyolita Islam, Moumita Sarker and Muhammad Nazrul Islam</i>	
Designing an Electro-Mechanical Ventilator Based on Double CAM Integration Mechanism	154
<i>Md. Rakibul Islam, Mohiuddin Ahmad, Md. Shahin Hossain, Muhammad Muinul Islam and Sk. Farid Uddin Ahmed</i>	
Enhancement of Sensitivity for Surface Plasmon Resonance Biosensor with Higher Detection Accuracy and Quality Factor	160
<i>Mohammad Hasibul Hasan Hasib, Jannati Nabiha Nur, Kamrun Nahar Shushama, Imteaz Rahaman, Md. Masud Rana and Mohammad Al Mahfuz</i>	

Sensor-Less Solar Irradiance Estimation and Maximum Power Point Tracking Using Artificial Neural Network	165
<i>Arif Rubayet and M. M. Atiqur Rahman</i>	
Development of an Android Based Real Time Bus Tracking System	170
<i>Mohammad Nazmul Hasan and Md. Sharif Hossen</i>	
Electricity Theft Detection to Reduce Non-Technical Loss using Support Vector Machine in Smart Grid	175
<i>Rafia Nishat Toma, Md Nazmul Hasan, Abdullah Al-Nahid and Bo Li</i>	
A Machine Learning Approach to Protect Electronic Devices from Damage Using the Concept of Outlier	181
<i>Sunanda Das, Muhammad Sheikh Sadi, Md. Ahsanul Haque and Md. Milon Islam</i>	
Subject Oriented Data Partitioning A Proposed Data Warehousing Schema	187
<i>Abdul Moktadir and N. M. Istiak Chowdhury</i>	
Discretion Way for Bleeding Detection in Wireless Capsule Endoscopy Images	193
<i>Abdullah Al Mamun, Md. Sohag Hossain, Md. Motaher Hossain and Md. Galib Hasan</i>	
Development of Microcontroller based Light Following Emergency Evacuation Chair	199
<i>Delowar Hossain, Hasan Alam, Ajmain Ar Rafi, Kamruzzaman Rakib and Umma Hany</i>	
Analysis of Performance-Improvement of Microstrip Antenna at 2.45 GHz Through Inset Feed Method	204
<i>A K M Baki Baki, Md. Nurur Rahman and Shawon Kumar Mondal</i>	
Extracting RDF Triples from Raw Text	210
<i>Yeasmin Ara Akter and Md Ataur Rahman</i>	
Bangla Spell Checking and Correction Using Edit Distance	214
<i>Muhammad Ifte Khairul Islam, Rahnuma Islam Meem, Faisal Bin Abul Kasem, Aniruddha Rakshit and Md. Tarek Habib</i>	
Comparison of Performance of Cognitive Radio Network under Single and Multi-User Scenario	219
<i>Md Abul Kalam Azad, Md. Imdadul Islam, Muhammad R. A. Khandaker and Jugal K. Das</i>	
Compensation of Frequency Fluctuation in a Single Area Power System Using LQR-VC ..	224
<i>Fariya Tabassum and M. S. Rana</i>	
Bluetooth Network Based Remote Controlled Home Automation System	228
<i>Md. Ismail Husain, Mahfuz Alam, Md. Golam Rashed, Md. Emdadul Haque, Mirza A. F. M. Rashidul Hasan and Dipankar Das</i>	
Ulcer Detection in Image Converted from Video Footage of Wireless Capsule Endoscopy ..	234
<i>Abdullah Al Mamun and Md. Sohag Hossian</i>	
Impact of SUs under FC in Co-operative Cognitive Radio Network in PUEA Environment	238
<i>Fahmida Hossain, Anzuman Yeasmin Snigdha and Imdadul Islam</i>	

Design of Twenty-One Level Modular Multilevel Converter Using a Three-level Submodule Block	243
<i>Ashraf Siddiquee, Shirajum Munira and Md. Shamim Reza</i>	
An Efficient Method of Lane Detection and Tracking for Highway Safety	248
<i>Bubly Barua, Shuva Biswas and Kaushik Deb</i>	
Performance evaluation of an optical drop filter based on simple homogeneous photonics crystal resonator	254
<i>Md. Aminur Rahman and A.K.M Ehtesanal Islam</i>	
A High Speed and Low Power 32nm FinFET Dynamic Latch Comparator Design	258
<i>Mir Muntasir Hossain and Satyendra N. Biswas</i>	
A Case Study on a Proposed Adaptive and Energy Efficient Street Lighting System for Chittagong City	262
<i>Saif Hannan, Goutom Barua Milton, Md. Humayun Kabir and Mohammed Jashim Uddin</i>	
Sleep-based DBA Algorithm for Energy Efficiency by End Points Collaboration in EPON	267
<i>Kamrun Nahar Runa, Monir Hossen and Shuvashis Saha</i>	
Feature-Based Mobile Phone Rating Using Sentiment Analysis and Machine Learning Approaches	272
<i>Abdullahil Kafi, M. Shaikh Ashikul Alam, Sayeed Bin Hossain, Siam Bin Awal and Hossain Arif</i>	
Heart Failure Risk Prediction and Medicine Recommendation using Exploratory Data Analysis	278
<i>Sumaya Habib, Maisha Binte Moin, Sujana Aziz, Kalyan Banik and Hossain Arif</i>	
MOSFET-like Carbon nanotube Field Effect Transistor based Full adder design	284
<i>Bappy Chandra Devnath and Satyendra N. Biswas</i>	
Data Mining Techniques for Predicting User Interest in Facebook Pages: A Comparison .	288
<i>Nusrat Jahan Farin, Morium Akter, Puthi Roy and Mohammad Shorif Uddin</i>	
Low Power Consuming Solar Assisted Vapor Compression Refrigerator To Preserve Emergency Medicines And Vaccines In Rural Areas	293
<i>Akbar Hossain, Shovan Saha, Md Arifur Rahman and Mahub Alam Himel</i>	
A Novel Approach to detect the Compound Level of Fertilizer and Pesticide in the Soil ...	299
<i>Abu Shufian, Riadul Islam, and Md. Mominur Rahman</i>	
Performance Analysis of Electrowetting on Dielectric (EWOD) Lens with Minimum Response Time and Optimized Damping Oscillation	305
<i>Sumaiya Rahman and Mst. Fateha Samad</i>	
An IoT based mHealth Platform for Chronic Kidney Disease Patients	310
<i>Alaa Noor, Anonnya Banerjee, Mayeasha Fairouz Ahmad and Mohammed Nazim Uddin</i>	

Return Loss and Gain Improvement for 5G Wireless Communication Based on Single Band Microstrip Square Patch Antenna	317
<i>Mohammad Faisal, Abdul Gafur, Syed Zahidur Rashid , Md.OmarFaruk Shawon, Kazi Ishtiaq Hasan and Md.Bakey Billah</i>	
Robust Control of Terminal Voltage of an Isolated Electric Power Generating Unit	322
<i>Fariya Tabassum and M. S. Rana</i>	
Chapman-Kolmogorov Relation Based Median String Algorithm for DNA Consensus Classification	326
<i>Mohammad Shibli Kaysar and Mohammad Ibrahim Khan</i>	
Unsupervised Content-Based Image Retrieval Technique Using Global and Local Features	332
<i>Md. Farhan Sadique, Bishajit Kumar Biswas and S.M. Rafizul Haque</i>	
DDoS Mitigation and Intrusion Prevention in Content Delivery Networks using Distributed Virtual Honeypots.	338
<i>Md. Mahmudur Rahman, Shanto Roy and Mohammad Abu Yousuf</i>	
Ultra High Efficient 2x1 Graphene Patch Antenna Arrays for Single and Dual Band Operation	344
<i>Md. Abdul Kaium Khan, Md Ibrahim Ullah, Towqir Ahmed Shaem, Rifat Kabir and Mohammad Abdul Alim</i>	
Automated Railway Maintenance System in Context of Bangladesh	350
<i>Nusrat Kabir Samia, Rifah Tamanna Usha, Anindita Kundu, Sadia Nowshin, Sharmin Sultana Sharmee, Sanjida Nasreen Tumpa, Major Md Fazle Rabbi and Col Md Mahboob Karim</i>	
Easy Scheme for Ulcer Detection in Wireless Capsule Endoscopy Images	355
<i>Md. Sohag Hossain, Abdullah Al Mamun, Md. Galib Hasan and Md. Motaher Hossain</i>	
Bangla Handwritten Character Recognition: an overview of the state of the art classification algorithm with new dataset	360
<i>Md Nazmul Hoq, Nadira Anjum Nipa, Mohammad Mohaiminul Islam and Sadat Shahriar</i>	
Merging the communication protocols 6LoWPANCoAP and RPL-CoAP Simulation and performance analysis using Cooja simulator	366
<i>Arif Mahmud, Faria Hossain , Faija Juhin and Tasnim Ara Choity</i>	
Investigation of EEG Signals for Brain Computer Interface	372
<i>Etu Podder, Md. Maniruzzaman and Alok Sarkar</i>	
Smart Gas Furnace	378
<i>Md. Mominur Rahman, Abu Shufian, Farzana Akter, Md. Tarikul Islam Juel and Riadul Islam</i>	
Kinect 3D Reconstruction Fusion Mapping with C# Algorithm by RGB-D Sensor	383
<i>Ashikur Rahman, Shoumik Rahman Mehedy and Rashedur M. Rahman</i>	
Temporal Variables Disorder of The Gait Cycle in Parkinsons Disease	389
<i>Adharaa Neelim Dewanjee, Quazi Delwar Hossain and Mohammed Shahriar Arefin</i>	

Performance Analysis of Tx-Rx Isolated Distributed Antenna System Implementing In-band Full-duplex for Up-link Communication to Mitigate Self-interference in 5G	395
<i>Ruhin Chowdhury and A. K. M. Sharoar Jahan Choyon</i>	
Performance Analysis of a CPDM-QPSK Direct Detection Optical Transmission System under the effects of Cross-Polarization	400
<i>A. K. M. Sharoar Jahan Choyon, S M Raiyan Chowdhury and Ruhin Chowdhury</i>	
Feature Selection and Classification of Spinal Abnormalities to Detect Low Back Pain Disorder using Machine Learning Approaches	404
<i>Md. Shariful Islam, Md. Asaduzzaman and Mohammad Masudur Rahman</i>	
Comparative Study of Enhancing Stability of a Wind Farm connected to the Grid using PID Controller based STATCOM and Capacitor Bank	408
<i>Ajmayen Fayek, Shah Md. Salimullah, Md. Shakhawath Hossain, Rakib Hossain, Md. Shadman Hasan Shakib, Ariful Islam Anik and Moynul Hossen Khan</i>	
DOORMOR: A Functional Prototype of a Manual Search and Rescue Robot	412
<i>Fahim Faisal and Syed Akhter Hossain</i>	
Design and Implementation of Solar Power Wireless Battery Charger	418
<i>Abu Shufian, Md. Mominur Rahman, Koushik Ahmed, Riadul Islam, Mahmudul Hasan and Toufiqul Islam</i>	
Impact of Increased Quantum Confinement on Gate Capacitance and Threshold Voltage of p Channel Junctionless Transistor	423
<i>Md.Khirul Alam Titu, Sajid Hasan and Md. Mohsinur Rahman Adnan</i>	
Application of Power Line Communication and X10 to Reduce the Load Shedding Problems in Power Deficit Countries	427
<i>Md. Waqeeb Tahmeed Sayeed CHowdhury, Muhammad Safin Alam and Abidur Rahman</i>	
Bangla Sign Language Conversation Interpreter Using Image Processing.	434
<i>Prosenjit Roy, S.M.Miraj Uddin, Md. Arifur Rahman, Md. Musfiqur Rahman, Md. Shahin Alam and Md.Saidur Rashid Mahin</i>	
An Efficient Ensemble Method for Cancer Detection	439
<i>Md. Sirajum Munir Prince, Asib Hasan and Faisal Muhammad Shah</i>	
Design and Development of a Portable Recording System for Simultaneous Acquisition of SCG and ECG Signals	445
<i>Tauhid Anwar, Mohammad Zubair, Mohammad Dehan Rahman, Nazmus Sakib, Md. Ahsan-Ul Kabir, Tasnuva Faruk and Md Kafilul Islam</i>	
Revised Scheme for Antimagic Graph Labeling for Splitting Graph and Shadow Graph Associated with Cycle	451
<i>Zareen Tasneem, Farissa Tafannum and Md Mahbubur Rahman</i>	
Performance Evaluation of SDN Controllers in Wireless Network	456
<i>Saiful Islam, Md. Ariful Islam Khan, Sanjida Tasnim Shorno, Sumonto Sarker and Md. Abubakar Siddik</i>	
A lossless speech signal compression technique	461
<i>Md. Atiqur Rahman, Most. Jannatul Ferdous, Md. Mamun Hossain, Md Rashedul Islam and Mohamed Hamada</i>	

Design and Implementation of IoT based Ideal Fish Farm in the Context of Bangladesh Aquaculture System	468
<i>Abdul Kadar Muhammad Masum, Md. Shahin , Md. Kalim Amzad Chy, Shahidul Islam Khan, Ahmed Shan-A-Alahi and Md. Golam Rabiul Alam</i>	
Optimization and energy management of hybrid renewable power generation using HOMER and FLC	474
<i>Nesar Uddin, Dr. Sayed Abu Nahian, Dr. Md. Saiful Islam and Jewel Sikder Joy</i>	
Detection of Safe Angle for Water Vehicles due to Vulnerable Swing	480
<i>Md. Shahidul Islam and Sarfaraz Newaz</i>	
Offshore Wind Energy Estimation in the Bay of Bengal with Satellite Wind Measurement	486
<i>Navila Rahman Nadi, Ferhat Bingl and Merete Badger</i>	
Effects of Different Environmental noises and Sampling Frequencies on the performance of MFCC and PLP based Bangla Isolated Word Recognition System	494
<i>Oli Lowna Baroi, Azhar Niaz, Md. Jahidul Islam, Md. Shaikh Abrar Kabir, Emrul Islam and Md. Jakaria Rahimi</i>	
Eye Assistant	500
<i>Md. Amanat Khan Shishir, Shahariar Rashid Fahim, Fairuz Maesha Habib and Tanjila Farah</i>	
Design and Analysis of Dual-Core D-Shape Photonic Crystal Fiber Biosensor	504
<i>Mohammad Al Mahfuz, Md. Nazmus Sakib, Mohammad Hasibul Hasan Hasib, Akash Bosu and Md. Roniuzzaman</i>	
Design and Characterization of low loss Single Mode Fiber for Terahertz Signal Transmission	508
<i>Akash Bosu, Chaity Basak, Shumaia Sharmin, Khandakar Md. Tasrif Hossain, Sharmina Zaman Urmi and Mohammad Al Mahfuz</i>	
An Efficient Soft Error Tolerant Approach to Enhance Reliability of TCAM	514
<i>Rumana Afrin, Muhammad Sheikh Sadi and Jan Jurjens</i>	
A Low Cost Dual-Band Patch Antenna Array for Future 5G Communication Applications	520
<i>Md Eshtiuk Hossain, Prosen Kirtonia and Mst Fateha Samad</i>	
A Comparative Study of Walking Assistance Tools Developed for the Visually Impaired People	525
<i>Mahfuza Khanom, Muhammad Sheikh Sadi and Md. Milon Islam</i>	
Design Implementation of a Microcontroller Based Automatic Power Factor Rectification System for Different Loads.....	530
<i>Md. Mayen Uddin, Abdullah Al Mahmud and Naemul Islam</i>	
Digital Forensic Investigation Framework for Internet of Things (IoT): A Comprehensive Approach	536
<i>Md. Jahidul Islam, Md. Mahin, Ayesha Khatun, Biplab Chandra Debnath and Sumaiya Kabir</i>	
Icons For the Mass: An Approach Towards Text Free Smart Interface	542
<i>Eshtiak Ahmed, Md. Mahade Hasan, Mirza Omar Faruk, Muhammad Farhad Hossain, Md. Arifur Rahman and Ashraf Islam</i>	

Low-Cost Underwater Wireless Communication System Development Using Piezo-Ceramic Transducer	546
<i>Md Ragib Shaharear, H.A.Shakhawat Hossen Prayash, Md Farhanul Islam and Tuhin Dey</i>	
Electrical Energy Harvesting from the Foot Stress On Foot Overbridge Using Piezoelectric Tile	550
<i>Tarik Bin Abdul Akib, Hasanuzzaman Mehedi and Md. Nazmuschayadat</i>	
An investigation on the surface states evolution of polycrystalline silicon nanowires for gas sensing application	555
<i>M. M. A Hakim, Afrida Arshad, Sharmin Shoma and Urmila Saha</i>	
Differentially Fed Compact Triple-band Antenna for Implantable Medical Devices	561
<i>Prosen Kirtonia, Mst. Fateha Samad, Md Kamal Hosain and Md Eshtiuk Hossain</i>	
Design and Analysis of high Efficient Latched Comparator	565
<i>Dona Basak and Prof. Dr.Satyendra Nath Biswas</i>	
Efficient Compression Scheme for Large Natural Text Using Zipf Distribution	570
<i>Md. Ashiq Mahmood and K.M. Azharul Hasan</i>	
Personality Detection from Text using Convolutional Neural Network.....	576
<i>Md. Abdur Rahman, Asif Al Faisal, Tayeba Khanam, Mahfida Amjad and Md Saeed Siddik</i>	
Wireless Home Automation System Using IoT and PaaS	582
<i>Adiba Mahjabin Nitu, Md. Jahid Hasan and Md. Shahin Alom</i>	
Aspects of Numeral Value of Cu_2ZnSnS_4 (CZTS) Absorber Layer Fabricated in Sol-gel Process by Dip Coating Technique	588
<i>Sabiha Dilruba, Afrina Sharmin, Tabassum Perveen Ananna, and Zahid Hasan Mahmood</i>	
Path and Partner Selection in Unstructured Resource- Constrained Environments Based on Node Psychology in the Context of IoT	592
<i>Tanusree Debi and Assaduzaman</i>	
Bridge Strength Preservation by Automatic Traffic Density Control: an IoT Application .	598
<i>Aisha B. Rahman, Md. Shahriar Kamal and Ariful Islam</i>	
Performance Evaluation of a Wearable 2.45 GHz Planar Printed Meandering Monopole Textile Antenna on Flexible Substrates	603
<i>Md. Mamun Ur Rashid, Ashiqur Rahman, Liton Chandra Paul and Ajay Krishno Sarkar</i>	
An Empirical Study of Cervical Cancer Diagnosis using Ensemble Methods	609
<i>Enamul Karim and Nafis Neehal</i>	
Detection of Lung Cancer from CT Scan Images using GLCM and SVM	614
<i>Mehdi Hassan Jony, Fatema Tuj Johora, Parvin Khatun and Humayan Kabir Rana</i>	

An Approach for Improving Complexity of Longest Common Subsequence Problems using Queue and Divide-and-Conquer Method	620
<i>Ratul Bhowmick, Md Ibrahim Sadek Bhuiyan, Md. Sabir Hossain, Muhammad Kamal Hossen and Ahsan Sadee Tanim</i>	
Depression Analysis of Bangla Social Media Data using Gated Recurrent Neural Network	625
<i>Abdul Hasib Uddin, Durjoy Bapery and Abu Shamim Mohammad Arif</i>	
Proficiency Assessment of Adaptive Neuro-Fuzzy Inference System to Predict Wind Power: A Case Study of Malaysia	631
<i>Md. Rasel Sarkar, Mst. Jesmin Nahar, Awatif Nadia, Md. Abdul Halim, S. M. Sajjad Hossain Rafin and Md. Mamunur Rahman</i>	
Filtering Bengali Political and Sports News of Social Media from Textual Information ...	636
<i>Lutfun Nahar, Zinnia Sultana, Nilufar Jahan and Ummay Jannat</i>	
Sentiment Analysis and Emotion Extraction: A Review of Research Paradigm	642
<i>Lutfun Nahar, Zinnia Sultana, Nazma Iqbal and Afifa Chowdhury</i>	
Big Data Mining in the Presence of Concept Drifting	650
<i>Terbium Siraj, Efrana Jannat, Warafta Rasul, Meher Afroz Chowdhury, Swakkhar Shatabda and Dewan Md. Farid</i>	
A Statistical Estimation of Solar Power for Energy Mix in Bangladesh	656
<i>Sujoy Barua, Zainal Abedin, Anik Nath and Chitra Biswas</i>	
A Comparative study on Waste-to-energy (WTE) technologies for municipal solid waste (MSW) management in Chittagong, Bangladesh.	661
<i>Md. Rashidul Islam, Jobair Al Rafi and Md. Sajjad Hossain</i>	
Load Scheduling of a Refrigerated Warehouse with Homogeneous Compressors Under Dynamic Pricing	667
<i>Shah Md. Nehal Hasnaeen, Shohanur Rahman and Md. Forkan Uddin</i>	
Single Image Haze Removal with Nonlinear Complex Diffusion Process	673
<i>Sharmin Sultana, Nazifa Akter, Rahat Hossain Faisal and Md. Mostafijur Rahman</i>	
Compensation for Voltage Disruption in a Smart Grid during Cyber-Attack.....	679
<i>M. A. Rahman and M. S. Rana</i>	
Underwater Image Enhancement Based on Fusion Technique via Color Correction and Illumination Adjustment	684
<i>Shahjadi Silma Subah, MD. Ashfaqul Islam and Md. Mohyiminul Islam</i>	
Fuzzy Logic based Optimization for Electric Vehicle Charging Station in Bangladesh	689
<i>Ashish Kumar Karmaker and Md Raju Ahmed</i>	
IMPROVED LOAD FREQUENCY CONTROL OF TWO-AREA POWER SYSTEM ...	694
<i>Abdullah Al Mamun, Mohammad Mostafizur Rahman, Anowar Hosen, Sanjita Akter and M. M. Rahman</i>	
Efficient Implementation of Dynamic Array System Using MapReduce Framework	699
<i>K. M. Azharul Hasan, Mehnuma Tabassum Omar, Rahat Haider and Sk. Md. Masudul Ahsan</i>	

Performance comparison between Graphene Nano-Ribbon FET & conventional CMOS based on Arithmetic Logic Unit (ALU)	705
<i>Md. Omar Faruque, Tanvir Hasan and Safayat Al Imam</i>	
IoT Based Automated Solar Irrigation System Using MQTT Protocol in Charandeep Chakaria	708
<i>Mohammad Minhajul Islam, Rezawl Karim Reza, Md. Shahadat Hossain and Anik Nath</i>	
Cascaded H-Bridge Multilevel Inverter Using SVPWM Modulation	714
<i>Robin Ray, Mashrur Ahmed Shadh and Md. Shamim Reza</i>	
Modeling and Design of a Fuzzy Logic Based PID Controller for DC Motor Speed Control in Different Loading Condition for Enhanced Performance	719
<i>Mirza Muntasir Nishat, Fahim Faisal, Mahdi Rahman and Md Ashraful Hoque</i>	
A Systematic Approach to Design Optimal Controller of Single Phase VSC for Distributed and Renewable Energy Application	725
<i>Md Khurshedul Islam, Farhina Hoque and Naeemul Islam</i>	
Topic Classification from Text Using Decision Tree, K-NN and Multinomial Naive Bayes .	731
<i>Md. Ataur Rahman and Yeasmin Ara Akter</i>	
Modeling and Performance Analysis of an Γ - Model Based DFIG Wind Turbine with Dual Crowbar Protection	735
<i>Mehedi Azad Shawon, S. M. Imrat Rahman and Naheed Hossain</i>	
Towards IoT and ML Driven Cardiac Status Prediction System	741
<i>Md. Ittahad Uz Zaman, Shaira Tabassum, Md. Sabbir Ullah, Ashikur Rahaman, Samsun Nahar and A.K.M. Muzahidul Islam</i>	
Implementation of Finite Control Set Model Predictive Control on 7-level Flying Capacitor Multilevel Inverter Using Space Vector	747
<i>Nasir Jubair Islam, Md. Selim Sarker, N.M.Merazul Islam and Md.Shamim Reza</i>	
Electrical Properties of CSS Deposited CdTe Thin Films for Solar Cell Applications	753
<i>N. K. Das, S. A. Razi, K. S. Rahman, M. A. Matin and N. Amin</i>	
Automatic Examinee Validation System using Eigenfaces	757
<i>Nuruzzaman Faruqui, Mohammad Abu Yousuf and Md. Fazlul Karim Patwary</i>	
Develop a Model to Secure and Optimize Distributed File Systems for ISP Log Management	764
<i>Mohammad Shazzad Hossain, Pratik Kumar Bhowmik, Md. Abidur Rahman, Mahub Uddin, Mohammad Abu Yousuf and Kazi Abu Taher</i>	
Survey on Text-Based Sentiment Analysis of Bengali Language	770
<i>Nayan Banik, Md. Hasan Hafizur Rahman, Shima Chakraborty, Hanif Seddiqui and Muhammad Anwarul Azim</i>	
Design and Implementation of an IoT Based Home Automation	776
<i>Md. Mohaiminul Islam, Md. Nahiyyan Farook, S. M. G. Mostafa and Yasir Arafat</i>	
Classification of Intrinsic Mode Spectra of EEG Signal for Epilepsy Detection	781
<i>Ankush Sarker and Md. Masudur Rahman</i>	

Layer thickness effect on power conversion efficiency of a P_3HT : $PCBM$ based organicsolar cell.....	786
<i>Raian Islam, Murad Mehrab Abrar, Farhatul Hassan and Sifat Adnan</i>	
VADet: An Arduino based automated vehicle accident detection and messaging system ..	789
<i>Nazir Ahmmed, Nusrat Jahan Jenny, Most Fowziya Akther Houya, Anika Ibnat Binte Alam and Md. Adnan Arefeen</i>	
Doly: Bengali Chatbot for Bengali Education	794
<i>Md. Kowsher, Farhana Sharmin Tithi, M Ashrafal Alam, Mohammad Nurul Huda, Mir Md. Moheuddin and Md. Golam Rosul</i>	
Prediction of Potato Disease from Leaves using Deep Convolution Neural Network towards a Digital Agricultural System	800
<i>Md. Al-Amin, Tasfia Anika Bushra and Md Nazmul Hoq</i>	
A Prototype of Heavyweight Carrying Robot for Garments Industry in Bangladesh	805
<i>Md. Mizanur Rahman, Sanjoy Kumar Sana, Md. Rokib Hasan, Sadia Kamal, Thajid Ibna Rouf Uday and Junaed Jahin</i>	
An Efficient CZTS Solar Cell from Numerical Analysis	811
<i>E.M.K. Ikbball Ahamed, A.K. Sen Gupta, M. Qamruzzaman and M.A. Matin</i>	
Human Identification Based on Color Stimuli	816
<i>Md. Mahmudul Hasan, Nafiu Hasan, Md. Mohaiminul Islam and Mahozabin Suhi</i>	
A Comparative Study of Various Methods of Phasor Measurement Unit Algorithms	820
<i>Zahidur Rahim Talukder, Kazi Nishat Tasnim and Md. Shamim Reza</i>	
Modelling a Solar Charge Station for Electric Vehicle with Storage Backup	826
<i>Muhammad Ali, Safayat Mohammad and Md. Minhajur Rahman</i>	
Mobility Aware Cache Management in 5G Future Generation Wireless Communication System	830
<i>Mayeeshah Fairouz Ahmad and Mohammad Arif Hossain</i>	
Q-Learning Based Particle Swarm Optimization Algorithm for Optimal Path Planning of Swarm of Mobile Robots	836
<i>Syed Irfan Ali Meerza, Moinul Islam and Dr. Md. Mohiuddin Uzzal</i>	
Design of a Convolutional Neural Network Based Smart Waste Disposal System	841
<i>Md. Samiul Haque Sunny, Debopriya Roy Dipta, Shifat Hossain, Hossain Mansur Resalat Faruque and Eklas Hossain</i>	
Brain Tumor Classification Using Convolutional Neural Network	846
<i>Sunanda Das, O.F.M. Riaz Rahman Aranya and Nishat Nayla Labiba</i>	
IoT Based Smart Energy Management in Residential Applications	851
<i>Md. Rakibul Hasan, Eklas Hossain, Hossain Mansur Resalat Faruque and Tipu Sultan</i>	
Improved Segmentation Approach for Plant Disease Detection	857
<i>Md. Arifur Rahman, Md. Mukitul Islam, G M Shahir Mahdee and Md. Wasi Ul Kabir</i>	

Comparison of Different Hybrid Renewable Energy Systems With Optimized PV Configuration to Realize the Effects of Multiple Schemes	862
<i>Faishal Islam Bappy, Md Jahirul Islam, Amit Kumer Podder, Debopriya Roy Dipta, Hossain Mansur Resalat Faruque and Eklas Hossain</i>	
Threat and Abusive Language Detection on Social Media in Bengali Language	868
<i>Puja Chakraborty and Md. Hanif Seddiqui</i>	
Design and Simulation of an UWB Vivaldi Antenna for Cancer Detection and Treatment	874
<i>Antora Hossain and Md. Kamal Hosain</i>	
Android Based Home Automation Using AVR Microcontroller Through Wireless Communication	879
<i>Muzahidul Islam, Md Tarek Hossein, Md. Ilias Rahman, Md. Mohtasim Billah, Mohammad Al Mahfuz and Mohammad Hasibul Hasan Hasib</i>	
Numerical Assessment of the Backward Facing Step for NACA 0015 Airfoil using Computational Fluid Dynamics	884
<i>Asif Kabir, Md. Saadbin Chowdhury, Md. Jahirul Islam and Mehran Islam</i>	
An Automated Approach to Detect Breast Cancer Tissue Using Ultrasound Images	890
<i>Misbah Ul Hoque, T. M. Shahriar Sazzad, A.K.M. Ashek Farabi, Ismail Hosen and Mursheda Akter Somi</i>	
An Automated Dermatological Images Segmentation Based on a New Hybrid Intelligent ACO-GA Algorithm and Diseases Identification Using TSVM Classifier	894
<i>Md. Humayan Ahmed, Romana Rahman Ema and Tajul Islam</i>	
Design and Comparative Analysis of Dual-stage Servo controller in Hard Disk Drive	900
<i>Alamgir Hossain and Md. Arifur Rahman</i>	
ParkEasy: An Embedded Model to Mitigate Car Parking Problems Using IoT Technology	905
<i>Samrat Kumar Dey, R. M. Rubayet Shamim, Md. Atiqul Islam and Md. Mahbubur Rahman</i>	
Design and Development of Hand Gesture Based Virtual Mouse	912
<i>Kabid Hassan Shibly, Samrat Kumar Dey, Md. Aminul Islam and Shahriar Iftexhar Showrav</i>	
Designing an automatic workplace recommendation system for garment workers using fog computing	917
<i>Arunavo Dey and Md. Nahid Newaz</i>	
Retinal Fundus Identification Utilizing Supervised and Unsupervised Nature of Deep Neural Network	921
<i>Md.Sanaullah Chowdhury, Faazia Rashid Taimy, Abdullah-Al Nahid, Md Younus Ali and Ferdous bin Ali</i>	
Adheetee: A Comprehensive Bangla Virtual Assistant	927
<i>Syed Mohidul Islam, Most Fowziya Akther Houya, Syed Mynul Islam, Salekul Islam and Nahid Hossain</i>	

DESIGN AND IMPLEMENTATION OF BOILER AUTOMATION SYSTEM USING PLC	933
<i>S.M. Tahsin Labib, Sohan Ul Alam, Shafayat Hossain, Md. Iquebal Hossain Patwary, Rubel Ahmed and Md. Ashikul Islam</i>	
Design & Analysis of a Micro-strip Patch Antenna for RFID, WiMAX and X-band Applications	939
<i>Mst. Dilshad Jahan, Chinmoy Das and Nayan Sarker</i>	
Detection of Abnormal Electrocardiogram (ECG) Using Wavelet Decomposition and Support Vector Machine (SVM)	945
<i>Pratik Deb, Mohammad Nooruddin and Md. Shajahan Badshah</i>	
Face Recognition System Based on Raspberry Pi Platform	953
<i>Nafis Mustakim, Noushad Hossain, Mohammad Mustafizur Rahman, Nadimul Islam, Zayed Hossain Sayem and Md. Asaduz Zaman Mamun</i>	
Thickness Dependency of Zinc Selenide (ZnSe) Thin Film Deposited By Vacuum Evaporation Method	957
<i>Md. Abu Sayeed, Hasan Khaled Rouf, Mohd. Rezaul Hasan and K.M.A. Hussain</i>	
Performance Analysis and Benchmarking of Clustering Algorithms with gene datasets ...	962
<i>Meskat Jahan and Mahmudul Hasan</i>	
Bangla Document Categorisation using Multilayer Dense Neural Network with TF-IDF. .	967
<i>Manisha Chakraborty and Dr. Mohammad Nurul Huda</i>	
Neural Network based Software Defect Prediction using Genetic Algorithm and Particle Swarm Optimization	971
<i>Safial Islam Ayon</i>	
Artificial Neural Network Inducement for Enhancement of Cloud Computing Security	975
<i>Md. Raihan Uddin, Kh. Mohaimenul Kabir and Md. Taslim Arefin</i>	
Virtual Image from EEG to Recognize Appropriate Emotion using Convolutional Neural Network	981
<i>Md. Rabiul Islam and Mohiuddin Ahmad</i>	
Linear Regression Models for Total Body Water Measurement Based on Bioelectrical Impedance Analysis	985
<i>Mst. Farzana Khatun, Md. Sohel Rana and Ajay Krishno Sarkar</i>	
Improved Piecewise Constant Approximation Method for Compressing Data Streams	991
<i>Atik Mahbub, Farhana Haque, Habibul Bashar and Mohammad Rezwanaul Huq</i>	
A Modified Naive Bayesian-based Spam Filter using Support Vector Machine	997
<i>Md. Sabir Hossain, Md. Zubair, Mohammad Obaidur Rahman, Muhammad Kamrul Hossain Patwary and Md. Golam Sarwar Rajib</i>	
EduNet: A Deep Neural Network Approach for Predicting CGPA of Undergraduate Students	1004
<i>Md Rifatul Islam Rifat, Abdullah Al Imran and A. S. M. Badrudduza</i>	

Automatically Controlled Energy Conservation System for Corporate Office Based on Microcontroller.	1010
<i>Koushik Ahmed, Joydip Paul, Md. Mominur Rahman, Abu Shufian, Md Shahnewaz Tanvir and Md. Mohaimanul Islam Sagor</i>	
A Bangla Spell Checking Technique to Facilitate Error Correction in Text Entry Environment	1016
<i>Tanni Mittra, Sadia Nourin, Linta Islam and Deepak Chandra Roy</i>	
Mathematical Models for Fat Free Mass Measurement Based on Bioelectrical Impedance Analysis	1022
<i>Tahasin Ahmed Fahim and Md. Shamim Anower</i>	
Intelligent Speed Control of DC Motor using ANFIS D Controller	1027
<i>Tanjim Tarannum</i>	
Epileptic Seizure Detection and Classification using Support Vector Machine from Scalp EEG Signal	1032
<i>Sania Zahan and Md. Rabiul Islam</i>	
Question Bank Similarity Searching System (QB3S) Using NLP and Information Retrieval Technique	1037
<i>Md. Raihan Mia and Abu Sayed Md. Latiful Hoque</i>	
Authorship Attribution in Bengali Literature using Convolutional Neural Networks with fastText's word embedding model	1044
<i>Hemayet Ahmed Chowdhury, Md. Azizul Haque Imon, Syed Md. Hasnayeem and Md. Saiful Islam</i>	
A New Topology of Input Switched Single Phase AC-DC Buck Boost Converter for High Performance	1049
<i>Khadiza Akter, Sairatun Nesa Soheli and Md. Nafiul Islam</i>	
Intelligent Path-finder for The Blind.	1053
<i>A. Z. M. Tahmidul Kabir, Nirmol Deb Nath, Mohitosh Pramanik and Tawsif Ibne Alam</i>	
A Novel 36-Pulse Star Rectifier with Passive Injection Circuits at DC Link	1058
<i>Md. Abdul Malek, Md. Abu Bakar Siddik and Md. Shoaib Akther</i>	
COMPARISON OF LINEAR DISPLACEMENT MEASUREMENTS BETWEEN A MEMS ACCELEROMETER AND HC-SR04 LOW-COST ULTRASONIC SENSOR.....	1064
<i>Azmyin Md. Kamal, Salman Habib Hemel and Mohsan Uddin Ahmad</i>	
Nonparametric development of the ranked tree structure for the accurate facial landmarking localization	1070
<i>Supratip Ghose and Habibur Rahman</i>	
A Vision Based Three-layer Access Management System with IoT Integration	1075
<i>Nafize Ishtiaque Hossain, Ali Reza Galib, Raihan Bin Mofidul and Dhiman Kumar Sarker</i>	
IoT-based Portable ECG Monitoring System for Smart Healthcare	1080
<i>Tamanna Shaown, Imam Hasan, Md. Muradur Rahman Mim and Dr. Md. Shohrab Hossain</i>	

Affordable Smart ECG Monitoring Using Arduino & Bluetooth Module	1085
<i>Mohammed Mahmudur Rahman, Md. Azizul Hoque Rimon, Muhammad Armanul Hoque and Md. Redwan Sammir</i>	
A multi-controlled semi-autonomous wheelchair for old and physically challenged people .	1089
<i>Md.Eftekhar Alam, Mohammed Abdul Kader, Umme Hany, Rumana Arjuman, Aisha Siddika and Md.Zakaria Islam</i>	
Feasibility Analysis and Economic Impact Assessment of Microgrid Renewable Energy Systems in Burao, Somaliland	1095
<i>Abdiaziz Mouse Abdi Miad, S. M. G. Mostafa, Mohammad Azim Uddin and Yasir Arafat</i>	
Experimental Results of a locally developed BLDC Motor Controller for electric tricycle .	1101
<i>Md. Fahim Bhuiyan, Nazmus Sakib, Mohammad Rejwan Uddin and Khosru M Salim</i>	
Six Tier Multipurpose Security Locker System Based on Arduino.....	1105
<i>A. Z. M. Tahmidul Kabir, Nirmol Deb Nath, Utshaw Rafin Akther, Fukrul Hasan and Tawsif Ibne Alam</i>	
Offloading SLAM for Indoor Mobile Robots with Edge-Fog-Cloud Computing	1110
<i>V. K. Sarker, J. Pena Queraltá, T. N. Gia, H. Tenhunen and T. Westerlund</i>	
HOMER Optimized Off-grid Hybrid Energy System: A Case Study on Rohingya Relocation Center in Bangladesh	1116
<i>Ferdous S. Azad, Istiak Ahmed, Syed Raihan Hossain and Rashedul Amin Tuhin</i>	
Non-Functional Requirements Classification with Feature Extraction and Machine Learning: An Empirical Study	1121
<i>Md. Ariful Haque, Md. Abdur Rahman, Md Saeed Siddik</i>	
Simulation of Ferrofluid Based Soft Actuator Using Magnetic Field Optimization Approach	1126
<i>Tasnova Tanzil Khan, A. M. Harsha S. Abeykoon, Tanujjal Bora and Golam Fahad Mullick</i>	
Lightning Effect on a Large-Scale Solar Power Plant with Protection System	1132
<i>Mohammad Riajul Karim and Md. Raju Ahmed</i>	
Analysis of NCFET with Si Doped HfO_2 as Ferro- Electric Material to Achieve Lower SS	1137
<i>Towfiqur Rahman, Antara Fairouz Khan and Nowshin Nawal</i>	
Textual Question Answering for Semantic Parsing in Natural Language Processing	1143
<i>Jaydeb Sarker, Mustain Billah and Md. Al Mamun</i>	
Large Magnetic Remanence Property Based a New Material Used in the Linear Generator For Wave Energy Extraction	1148
<i>Selim Molla and Omar Farrok</i>	
Identification of Autoregressive Systems in the Presence of Additive Noise Using the Matrix Pencil Method	1153
<i>Md. Shamim Hussain</i>	

Traffic Load Based Efficient Energy Management Technique for 5G Small Cell Network ..	1159
<i>Syed Zahidur Rashid, Abdul Gafur, Atikur Rahaman, Yaheya Solaiman and Erfanul Hoque Bahadur</i>	
Design and Development of Question Answering System in Bangla Language from Multiple Documents	1164
<i>Samina Tasnia Islam and Mohammad Nurul Huda</i>	
Using Boosting Approaches to Detect Spam Reviews	1168
<i>Sifat Ahmed and Faisal Muhammad Shah</i>	
GDPR Compliance: Implementation Use Cases for User Data Privacy in News Media Industry	1174
<i>Ahmedur Rahman Shovon, Shanto Roy, Arnab Kumar Shil and Tanjila Atik</i>	
Applying Model-Free Reinforcement Learning Algorithm in Network Slicing for 5G	1180
<i>Mostafa Zaman Chowdhury, Md. Tanvir Hossain and Yeong Min Jang</i>	
Design and Implementation of a Vault Security System	1184
<i>Md. Mahadi Hasan Moon, Debashish Kumar Ghosh, Nafiz Ahmed Chisty, Md. Aurongo Jeb and Md. Mahidul Islam</i>	
Design and Implementation of Remote Controlling and Monitoring System for Automatic PLC Based Packaging Industry	1190
<i>Raihan Bin Mofidul, Md. Shahadath Hossain Sabbir, Amit Kumer Podder and Mohammad Shaifur Rahman</i>	
Water Cooled Chiller Based HVAC System Used in a Linear Generator for Oceanic Wave Energy Conversion	1195
<i>Selim Molla and Omar Farrok</i>	
Hybrid-core microstructure fiber for chemical identification in terahertz regime	1201
<i>Md. Ahasan Habib and Md. Selim Reza</i>	
Single Mode Flattened Dispersion Circular-Shaped Porous Core Photonic Crystal Fiber for THz Regime	1207
<i>Md. Anwar Sadath, Mohammad Saiful Islam, Md. Hafijur Rahman, Md. Tariqul Islam, Sabbir Ahmed Khan and Shahadat Hossain</i>	
Performance Analysis of Different Tree Based Methods for Identifying Drop Out Students	1210
<i>Nafisa Tasnim, Mahit Kumar Paul and A. H. M. Sarowar Sattar</i>	
Performance Enhancement of Multigate FinFETs by Using High-k Stack Oxide	1216
<i>Emdadul Huq Minhaj, Muhammad Abdur Razzak, Md. Majharul Islam and Md. Mohsinur Rahman Adnan</i>	
BHCDR: Real-Time Bangla Handwritten Characters and Digits Recognition using Adopted Convolutional Neural Network	1220
<i>Muhammad Aminur Rahaman, Md. Mahin, Md. Haider Ali and Md. Hasanuzzaman</i>	
Student's Academic Performance Evaluation Method Using Fuzzy Logic System	1226
<i>Abdul Aziz, Md. Asaf-uddowla Golap and M. M. A. Hashem</i>	

Improved Differential Strobe Terminal Based Open-loop Control of Smart Power Factor Metering System	1232
<i>Shahriar Rahman Fahim, Sakib Shahrear Avro, Subrata K. Sarker, Md. Rokunuzzaman and Sajal K. Das</i>	
Towards Developing an Intelligent Wheelchair for People with Congenital Disabilities and Mobility Impairment	1238
<i>Tasneea Hossain, Md Sabbir-Ul-Alam Sabbir, Asma Mariam, Toki Tahmid Inan, Muhammad Nazrul Islam, Khairul Mahbub and Muhammad Tawsif Sazid</i>	
Rice Disease Identification and Classification by Combining Deep Convolutional Neural Network with Support Vector Machine	1245
<i>Md. Jahid Hasan, Shamim Mahbub, Md. Shahin Alom and Md. Abu Nasim</i>	
Computer Vision and Smoke Sensor Based Fire Detection System	1251
<i>Nahid Chowdhury, Dewan Ruhul Mushfiq and AZM Ehtesham Chowdhury</i>	
Feature Selection and Comparative Analysis of the Supervised Learning Model for Hyperspectral Image Classification	1256
<i>Abu Sayeed, Md. Ali Hossain and Md. Rabiul Islam</i>	
Generation of Electrical Power by using High Graded Permanent Magnet Linear Generator in Wave Energy Conversion	1261
<i>Md. Samiul Bashir and Omar Farrok</i>	
Information Retrieval System in Bangla Document Ranking using Latent Semantic Indexing	1266
<i>Md. Nesarul Hoque, Rabiul Islam and Md. Sajidul Karim</i>	
Detection Performance Analysis of Compressive Sensing in Cooperative Cognitive Radio Network	1271
<i>Teethiya Datta, Shohely Tasnim Anindo and Sk. Shariful Alam</i>	
Using Social Networks to Detect Malicious Bangla Text Content	1277
<i>Tanvirul Islam, Nadim Ahmed and Subhenur Latif</i>	
Classification of Bengali Questions Towards a Factoid Question Answering System	1281
<i>Syeda Tamanna Alam Monisha, Sourav Sarker and Md Mahadi Hasan Nahid</i>	
Evidential SVM for binary classification	1286
<i>Md. Eusha Kadir, Amin Ahsan Ali and Mohammad Shoyaib</i>	
Implementation of Principal Component Analysis on Masked and Non-masked Face Recognition	1292
<i>Md. Sabbir Ejaz, Md. Rabiul Islam, Md Sifatullah and Ananya Sarker</i>	
Brain Tumor Detection Using Convolutional Neural Network	1297
<i>Tonmoy Hossain, Fairuz Shadmani Shishir, Mohsena Ashraf, Md Abdullah Al Nasim and Faisal Muhammad Shah</i>	
Design of EEG Based Wheel Chair by Using Color Stimuli and Rhythm Analysis	1303
<i>Naful Hasan, Md. Mahmudul Hasan and Md. Akramul Alim</i>	

Throughput Analysis of Compressive Sensing in Cooperative Opportunistic Radio Network	1307
<i>Shohely Tasnim Anindo, Teethiya Datta and Sk. Shariful Alam</i>	
Effect of Solar Concentration on Performance of Perovskite Solar Cell: A detailed balance study	1313
<i>Md. Masud Rana, Shyamal Kumar Mandal and Md. Tariquzzaman</i>	
Design and Optimization of AlGaAs/InP Multi-junction Solar Cell	1318
<i>Md. Masud Rana, S. Md. Firoz Khan and Md. Shafin Shafayat</i>	
Cows Urine is a prominent source of electrolyte for Microbial Fuel Cell	1323
<i>Md. Abdul Halim, Md Ibrahim, Md. Rasel Molla, Rituparna Kundu, Md. Bokhari Hasan, and Md. Aminul Islam</i>	
An Intelligent Street Light System Based on Piezoelectricity Generator with Noticeable Zebra Crossing Point and Bus Stand.	1327
<i>A. Z. M. Tahmidul Kabir, Nirmol Deb Nath, Fukrul Hasan, Mirza Tanvir Sadik and Sakhwat Hossain Lisun</i>	
Design of a High Voltage Closed Loop Charge Pumping System with a self-regulation mechanism	1332
<i>Alif Md. Asif Khan, Tahmida Islam, Md Wasif Absar, Md Rubel Sarkar and Md Shariful Islam</i>	
Converter based Frequency Adjustment and Protection of Grid-tied Wind Farm	1339
<i>Kanij Ahmad, Nur Mohammad and Muhammad Quamruzzaman</i>	
BFAGC: A Bias-Free Adaptive Gamma Correction Method for Image Enhancement	1344
<i>Nazifa Akter, Sharmin Sultana, Rahat Hossain Faisal and Md. Mostafijur Rahman</i>	
Design of a Prototype of a Ferrofluid Based Soft Actuator	1350
<i>Tasnova Tanzil Khan, A. M. Harsha S. Abeykoon, Tanujjal Bora and Golam Fahad Mullick</i>	
Stable walking of an underactuated bipedal robot with unbalanced masses using one actuator	1355
<i>Mohammad Farhan Ferdous and Jannat Binta Alam</i>	
Contrast Enhancement using Mode-Separate Histogram Equalization	1361
<i>Sadia Khan Rupa, Md. Faishal Yousuf and Shanto Rahman</i>	
A Complete Device to Call Candidates and Time Management in Viva-voice	1367
<i>Mohammed Abdul Kader, Rajvi Sutra Dhar, Md. Saiful Islam, Naeemul Islam, Mohammad Abdur Razak and Yasir Arafat</i>	
Statistical Approach for Classifying Sentiment Reviews by Reducing Dimension using Truncated Singular Value Decomposition	1372
<i>Asmaul Husna, Habibur Rahman and Emrana Kabir Hashi</i>	
Design of a Cost Effective Smart Autonomous Power and Switch Controlled Led Street Light	1377
<i>Monir Hossain, Md. Tawhid Islam Opu, Mohaiminul Islam and Navila Rahman Nadi</i>	

Building Predictive Models for Infant Mortality Rate in Bangladesh	1383
<i>Mst Lucky Sultana, Mst Irin Sultana and Md Mahmudul Hasan</i>	
Details semiconductor losses calculation of single phase dual active bridge converter for fast charger station application	1389
<i>Mohammad Jalal Uddin</i>	
Artificial Intelligence Humanoid BONGO Robot in Bangladesh	1394
<i>A S M Ahsanul Sarkar Akib, Mohammad Farhan Ferdous, Milon Biswas and Hossain Mohammad Khondokar</i>	
Students Evaluation in AGILE After Completing Software Engineering Course	1400
<i>Sabbir M. Saleh and Supta Richard Philip</i>	
Improving Detection Accuracy for Imbalanced Network Intrusion Classification using Cluster-based Under-sampling with Random Forests	1406
<i>Md. Ochiuddin Miah, Sakib Shahriar Khan, Swakkhar Shatabda and Dewan Md. Farid</i>	
Development of an Automated Low-cost Book Scanner and Translator	1411
<i>Sabila Nawshin, Samir Kumar Das, Najia Hossain, Joyita Das Mela, Abu Shafin Mohammad Mahdee Jameel and Salekul Islam</i>	
Thermal Characteristics of Hybrid Photovoltaic Solar Thermal System during Summer. . .	1416
<i>Md. Faisal Kader, Md. Awal Khan and Md. Habibul Huq</i>	
Design & Implementation of Voice Command Based Bipedal Surveillance Robot	1423
<i>Himel Das, Himel Chakraborty and Md. Sarwar Uddin Chowdhury</i>	
Human Activity Recognition Using Smartphone Sensors: A Dense Neural Network Approach	1428
<i>Abdul Kadar Muhammad Masum, Sadia Jannat, Erfanul Hoque Bahadur, Md. Golam Rabiul Alam, Shahidul Islam Khan and Mohammad Robiul Alam</i>	
Seizure and Non-Seizure EEG Signals Detection Using 1-D Convolutional Neural Network Architecture of Deep Learning Algorithm	1434
<i>Tanima Tasmin Chowdhury, Afrin Hossain, Shaikh Anowarul Fattah and Celia Shahnaz</i>	
Sentiment Analysis of Bengali Texts on Online Restaurant Reviews Using Multinomial Naive Bayes	1438
<i>Omar Sharif, Mohammed Moshiul Hoque and Eftekhari Hossain</i>	
An IoT based Smart Energy Meter for the Idle Use of Electricity: An Industry Perspective	1444
<i>Abdul Kadar Muhammad Masum, Saquib Manzur, Md. Kalim Amzad Chy, Shahidul Islam Khan, Md. Golam Rabiul Alam and S.M. Taslim Reza</i>	
Analysis of Air Foils and Design of Blades for a Low-Speed 250W Vertical Axis Wind Turbine Suitable for Coastal Areas of Bangladesh	1450
<i>Mahtab Murshed, Md. Yeasin Arafat and M. Abdur Razzak</i>	
An Effective Combination of Microcontroller and PLC for Home Automation System	1456
<i>Mohammad Hanif, Nur Mohammad and Bijoy Harun</i>	

GRU-based Attention Mechanism for Human Activity Recognition	1462
<i>Md. Nazmul Haque, M. Tanjid Hasan Tonmoy, Saif Mahmud, Amin Ahsan Ali, Muhammad Asif Hossain Khan and Mohammad Shoyaib</i>	
Development of Myoelectric Robotic Hand using 3D Printer	1468
<i>Sivapong Nilwong, Delowar Hossain, Eneo Petoku and Genci Capi</i>	
Clinical Human Gait Classification: Extreme Learning Machine Approach	1472
<i>Prithvi Patil, K.Shusheel Kumar, Neha Gaud and Vijay Bhaskar Semwal</i>	
Wearable Visual-MIMO for Healthcare Applications	1478
<i>Tae-Ho Kwon, Ki-Soo An, Partha Pratim Banik and Ki-Doo Kim</i>	