

2019 International Conference on Advances in the Emerging Computing Technologies (AECT 2019)

**Al Madinah Al Munawwarah, Saudi Arabia
10 February 2020**



**IEEE Catalog Number: CFP19U57-POD
ISBN: 978-1-7281-4453-5**

**Copyright © 2020 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:	CFP19U57-POD
ISBN (Print-On-Demand):	978-1-7281-4453-5
ISBN (Online):	978-1-7281-4452-8

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

2019 International Conference on Advances in the Emerging Computing Technologies (AECT)

AECT Papers

<i>Deep Learning Framework for Short Term Power Load Forecasting a Case Study of Individual Household Energy Customer</i> Khursheed Aurangzeb (King Saud University, Saudi Arabia)	1
<i>A Formal Approach to Validate Block-Chains</i> Roobaea Salim Alroobaea (Taif University & Taif, Saudi Arabia)	6
<i>Language Independent Sentiment Analysis</i> Muhammad Haroon Shakeel (Lahore University of Management Sciences, Pakistan), Safi Faizullah (Islamic University, Madina, Saudi Arabia), T. Alghamdi (Islamic University, Saudi Arabia), Imdadullah Khan (Lahore University of Management Sciences, Pakistan)	12
<i>An Overview of Privacy Issues in IoT Environments</i> Suha Al-Sharekh (Qassim University, Saudi Arabia), Khalil Al Shqeerat (Qassim University, Saudi Arabia)	17
<i>An Optimized Linear-Kernel Support Vector Machine for Electricity Load and Price Forecasting in Smart Grids</i> Junaid Masood (Comsats University Islamabad, Pakistan), Sakeena Javaid (COMSATS University, Islamabad, Pakistan), Sheeraz Ahmed (IQRA National University Peshawar & CAREER DYNAMICS INSTITUTE, Peshawar, Pakistan), Sameeh Ullah (Illinois State University USA, Pakistan), Nadeem Javaid (COMSATS Institute of Information Technology, Islamabad, Pakistan)	23
<i>Secure Online Banking with Biometrics</i> Anum Kiyani (Middlesex University, London, United Kingdom (Great Britain)), Aboubaker Lasebae (Middlesex University, United Kingdom (Great Britain)), Kamran Ali (Middlesex University & Global University Systems (GUS), United Kingdom (Great Britain)), Masood Ur-Rehman (University of Glasgow, United Kingdom (Great Britain))	29
<i>Comparative Analysis on Imbalanced Multi-class Classification for Malware Samples Using CNN</i> Arwa Alzammam (Imam Muhammad Ibn Saud Islamic University, Saudi Arabia), Hamad Binsalleeh (Imam Mohammad Ibn Saud Islamic University, Saudi Arabia), Basil AsSadhan (King Saud University, Saudi Arabia), Kostas Kyriakopoulos (Loughborough University, United Kingdom (Great Britain)), Sangarapillai Lambotharan (Loughborough University, United Kingdom (Great Britain))	35
<i>Roadmap for Security-as-a-Service CRAN in 5G Networks</i> M. Awais Javed (National University of Sciences and Technology, Pakistan), Shahzaib Tahir (National University of Sciences and Technology, Pakistan)	41
<i>An Intelligent Traffic System for Detecting Lane Based Rule Violation</i> Md. Islam (Bangladesh & BRAC University, Bangladesh), Faed Arnob (Brac University, Bangladesh), Ahnaf Choudhury (Brac University, Bangladesh)	47
<i>A Novel Multi-Chaos Based Compressive Sensing Encryption Technique</i> Jawad Ahmad (Edinburgh Napier University, United Kingdom (Great Britain)), Ahsen Tahir (University of Engineering and Technology Lahore, Pakistan), Jan Sher Khan (University of Gaziantep, Turkey), Atif Jameel (Pakistan Institute of Engineering and Applied Sciences (PIEAS), Pakistan), Qammer H Abbasi (University of Glasgow, United Kingdom (Great Britain)), Bill Buchanan (Edinburgh Napier University, United Kingdom (Great Britain))	53
<i>High Performance Computing for Detecting Complex Diseases Using Deep Learning</i> Sahar Ibrahim Ghanem (Faculty of Engineering, Alexandria University, Alexandria, Egypt), Ahmed Ghoneim (Faculty of Engineering, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt), Nagia M Ghanem (Faculty of Engineering, Alexandria University, Egypt), Mohamed Ismail (Alexandria University, Egypt)	57
<i>Internet of Things: On the Opportunities, Applications, and Open Challenges in Saudi Arabia</i> Mohammad Ayoub Khan (University of Bisha & College of Computing and Information Technology, Saudi Arabia), Mohammad Tabrez Quasim (University of Bisha, Saudi Arabia), Fahad Alqarni (University of Bisha, Saudi Arabia), Abdulla Alharthy (University of Bisha, Saudi Arabia)	63
<i>Identifying Elevated and Shallow Respiratory Rate Using mmWave Radar Leveraging Machine Learning Algorithms</i> Syed Shah (University of Glasgow, United Kingdom (Great Britain)), Syed Shah (Institute of Business and Management Sciences, Pakistan), Syed Ikram Shah (National University of Science and Technology Islamabad, Pakistan), Daniyal Haider (University of Cergy Pontoise, France), Ahsen Tahir (University of Engineering and Technology Lahore, Pakistan), Jawad Ahmed (HITEC University, Taxila, Pakistan)	68
<i>Fog Computing for Leak Detection in On-shore Transmission Pipelines</i> Shuaib Mohammed (King Fahd University of Petroleum and Minerals, Saudi Arabia), Farouq Muhammad Aliyu (King Fahd University of Petroleum and Minerals, Saudi Arabia)	72
<i>Remote Sensing Based Vegetation Classification Using Machine Learning Algorithms</i> Mansoor Ahmad Arbab (University of Engineering & Technology Peshawar, Pakistan), Nasru Minallah (University of Engineering & Technology, Peshawar, Pakistan), Nasir Ahmad (University of Engineering & Technology Peshawar, Pakistan), Arbab Ahmad (University of Engineering and Technology Peshawar, Pakistan), Nouman Fazal (University of Engineering Technology Peshawar, Pakistan)	77
<i>Random Bit Generator Mechanism Based on Elliptic Curves and Secure Hash Function</i> Omar Reyad (Warsaw University of Technology, Poland), Kadry Hamed (Shaqra University, Saudi Arabia), Mohamed Karar (Menoufia University, Faculty of Electronic Engineering, Egypt)	83
<i>Structural Equation Modeling for Acceptance of Cloud Computing</i> Waqas Ahmed (UniKL Business School, Universiti Kuala Lumpur, Malaysia), Sheikh Muhammad Hizam (UBIS, Malaysia), Ilham Anwar Malik (Universiti Kuala Lumpur, Malaysia), Jawad Ali (Universiti Kuala Lumpur, Malaysia), Toqeer Ali (Islamic University of Madinah, Saudi Arabia)	89
<i>A Futuristic Blockchain Based Vehicular Network Architecture and Trust Management System</i> Usama Arshad (COMSATS University Islamabad, Pakistan), Sakeena Javaid (COMSATS University, Islamabad, Pakistan), Sheeraz Ahmed (IQRA National University Peshawar & CAREER DYNAMICS INSTITUTE, Peshawar, Pakistan), Beenish Seemab (COMSATS University Islamabad, Pakistan), Nadeem Javaid (COMSATS Institute of Information Technology, Islamabad, Pakistan)	95

<i>Drive-By Road Condition Assessment Using Internet of Things Technology</i>	
Mohamed Abdelraheem (Assiut University, Egypt), Moumen El-Melegy (Assiut University, Egypt)	101
<i>An Efficient Key Management Scheme for Secure Demand-Response Communications in Smart Grid</i>	
Mourad Benmalek (Ecole Nationale Supérieure d'Informatique, Algeria), Yacine Challal (Ecole Nationale Supérieure d'Informatique, Algeria), Abdelouahid Derhab (King Saud University, Saudi Arabia), Zakaria Gheid (Ecole Nationale Supérieure d'Informatique, Algeria)	107
<i>An Improved RE Framework for IoT-Oriented Smart Applications Using Inetgrated Approach</i>	
Sarah Kaleem (Iqra National University, Peshawar, Pakistan), Sheeraz Ahmed (IQRA National University Peshawar & CAREER DYNAMICS INSTITUTE, Peshawar, Pakistan), Fasee Ullah (Sarhad University of Science and IT, Peshawar, Pakistan), Muhammad Babar (Iqra University, Islamabad, Pakistan), Najia Sheeraz (Career Dynamics Research Centre, Peshawar, Pakistan), Fazl e Hadi (Bahria University Islamabad, Pakistan)	113
<i>A Smart System for Recognizing Daily Human Activities Based on Wrist IMU Sensors</i>	
Ahmad Ayman (Arab Academy for Science, Technology, and Maritime Transport, Egypt), Omneya Attallah (Post Dr & Arab Academy for Science and Technology and Maritime Transport, Egypt), Heba A. Shaban (Arab Academy for Science, Technology & Maritime Transport, Egypt)	119
<i>Towards Energy Efficiency and Power Trading Exploiting Renewable Energy in Cloud Data Centers</i>	
Shahzad Aslam (COMSATS University Islamabad, Pakistan), Sheraz Aslam (Cyprus University of Technology, Cyprus), Khursheed Aurangzeb (King Saud University, Saudi Arabia), Syed Muhammad Mohsin (COMSATS University Islamabad, Islamabad, Pakistan)	125
<i>Educational Business Intelligence Framework Visualizing Significant Features Using Metaheuristic Algorithm and Feature Selection</i>	
Shamini Raja Kumaran (Universiti Teknologi Malaysia (UTM), Malaysia), Mohd Shahizan Othman (Universiti Teknologi Malaysia & Faculty of Computing, Malaysia), Lizawati Mi Yusuf (Universiti Teknologi Malaysia, Malaysia), Arda Yunianta (King Abdulaziz University, Saudi Arabia & Mulawarman University, Indonesia)	131
<i>A R2N2 Approach for Cardiac Behavior Forecast on Non Trending Big HealthCare Data.pdf</i>	
Anwar Ul Haque (Institute of Business Administration, Karachi, Pakistan), Tariq Mahmood (Institute of Business Administration, Karachi, Pakistan), Muhammad Sayeed Ghani (Institute of Business Administration, Pakistan)	137
<i>IoT for Smart Parking</i>	
Noura El Shabasy (British University in Egypt, Egypt), Mohammad M Abdellatif (The British University in Egypt, Egypt)	143
<i>Software Cost Estimation - A Comparative Study of COCOMO-II and Bailey-Basili Models</i>	
Muneeb Ullah (The University of Agriculture Peshawar, Pakistan), Rahman Ali (University of Peshawar, Pakistan), Abdullah Khan (Universiti Tun Hussein Onn Malaysia, Malaysia), Mukhtiar Ahmad (The University of Agriculture Peshawar, Pakistan), Tufail Khan (The University of Agriculture Peshawar, Pakistan), Farhan Mulk (The University of Agriculture Peshawar, Pakistan)	149
<i>Progression Towards an e-Management Centralized Blood Donation System in Saudi Arabia</i>	
Fawaz Alharbi (Shaqra University, Saudi Arabia)	154
<i>Tree-Based Bagging and Boosting Algorithms for Proactive Invoice Management</i>	
Mohd Atir (S&P Global, India)	159
<i>Automatic Breast Cancer Classification from Histopathological Images</i>	
Fatma Anwar (Alexandria University, Egypt), Omneya Attallah (Post Dr & Arab Academy for Science and Technology and Maritime Transport, Egypt), Nagia M Ghanem (Faculty of Engineering, Alexandria University, Egypt), Mohamed Ismail (Alexandria University, Egypt)	165
<i>Supervised Topic Modeling Using Word Embedding with Machine Learning Techniques</i>	
Rana Nassif (Student, Arab Academy for Science & Technology and Maritime Transport, Saudi Arabia), Mohamed Waleed Fakhr (Arab Academy for Science and Technology & AAST, Egypt)	171
<i>Medical Imaging for the Detection of Tuberculosis Using Chest Radio Graphs</i>	
Abnash Zaman (Shaheed Benazir Bhutto Women University Peshawar Pakistan, Pakistan), Sheema Khattak (Shaheed Benazir Bhutto Women University Peshawar, Pakistan), Zohaib Hassan (Iqra National University, Peshawar, Pakistan)	177
<i>Clustering Based UAV Base Station Positioning for Enhanced Network Capacity</i>	
Metin Ozturk (University of Glasgow, United Kingdom (Great Britain)), Joao Nadas (University of Glasgow, United Kingdom (Great Britain)), Paulo Valente Klaine (University of Glasgow, United Kingdom (Great Britain)), Sajjad Hussain (University of Glasgow, United Kingdom (Great Britain)), Muhammad Ali Imran (University of Glasgow, United Kingdom (Great Britain))	182
<i>Computerised Segmentation of Medical Images Using Neural Networks and GLCM</i>	
Faizal Khan (Shaqra University, Saudi Arabia), Sultan Refa Alotibi (College of Computing and Information Technology, Saudi Arabia)	188
<i>Short Term Load Forecasting on PRECON Dataset</i>	
Ahmad Nadeem (Lahore University of Management Sciences, Pakistan), Naveed Arshad (Lahore University of Management Sciences, Pakistan)	193
<i>Utilizing Graph Database for Inferring Domain-Disease Associations</i>	
Ahmed Elmoselhy (King Fahd University of Petroleum and Minerals, Saudi Arabia), Emad Ramadan (King Fahd University of Petroleum and Minerals, Saudi Arabia, Saudi Arabia)	199
<i>High Performance Big Data Graph Analytics Leveraging near Memory System</i>	
Ahsen Tahir (University of Engineering and Technology, Pakistan), Jawad Ahmad (Edinburgh Napier University, United Kingdom (Great Britain)), Syed Shah (University of Glasgow, United Kingdom (Great Britain)), Qammer H Abbasi (University of Glasgow, United Kingdom (Great Britain))	205
<i>Skin Lesions Identification Using Deep Convolutional Neural Network</i>	
Tasneem Alkarakatly (Umm Al-qura University, Saudi Arabia), Shatha Abdullah Eidhah (Umm Al-qura University, Saudi Arabia), Miaad Al-Sarawani (Umm Al-qura University, Saudi Arabia), Alaa Al-Sobhi (Umm Al-qura University, Saudi Arabia), Mohsin Bilal (Umm Al-Qura University, Saudi Arabia)	209

<i>Iris Segmentation Techniques to Recognize the Behavior of a Vigilant Driver</i> Abdullatif Baba (University of Turkish Aeronautical Association, Turkey)	214
<i>Design Considerations for a Virtual Reality-Based Nature Therapy to Release Stress</i> Norsuhani Zamin (Saudi Electronic University, Saudi Arabia), Mohd Daniel Azraff Rozmi (Universiti Teknologi PETRONAS, Malaysia), Oi Mean Foong (Universiti Teknologi PETRONAS, Malaysia), Dayang Rohaya Awang Rambli (Universiti Teknologi PETRONAS, Malaysia), Suziah Sulaiman (Universiti Teknologi PETRONAS, Malaysia), Nadia Diyana Mohd Muhaiyuddin (Universiti Utara Malaysia, Malaysia)	219
<i>Localization Error Computation for RSSI Based Positioning System in VANETs</i> Waqas Ahmad (Iqra National University, Peshawar, Pakistan), Sheeraz Ahmed (IQRA National University Peshawar & CAREER DYNAMICS INSTITUTE, Peshawar, Pakistan), Najia Sheeraz (Career Dynamics Research Centre, Peshawar, Pakistan), Ayub Khan (Iqra National University, Peshawar, Pakistan), Atif Ishtiaq (Iqra National University, Peshawar, Pakistan), Malka Saba (Career Dynamics Research Centre, Peshawar, Pakistan)	223
<i>Security Assessment of Internet of Things in Healthcare Environment</i> Dia Ali D (Ninevah University, Iraq), Ahmed Mahmood (Ninevah University, Iraq)	229
<i>Location Dependent Channel Characteristics for Implantable Devices</i> Muhammad Ilyas (Altinbas University, Turkey), Oguz Bayat (Altinbas University, Turkey), Osman Nuri Ucan (Altinbas University, Turkey), Muhammad Ali Imran (University of Glasgow, United Kingdom (Great Britain)), Qammer H Abbasi (University of Glasgow, United Kingdom (Great Britain))	233
<i>Sharing Mechanism of Intelligent Vehicles Trust Points Based on Blockchain for Vehicular Networks</i> Sharqa Hameed (COMSATS University Islamabad, Pakistan), Sakeena Javaid (COMSATS University, Islamabad, Pakistan), Sheeraz Ahmed (IQRA National University Peshawar & CAREER DYNAMICS INSTITUTE, Peshawar, Pakistan), Nadeem Javaid (COMSATS Institute of Information Technology, Islamabad, Pakistan)	237
<i>Modified Planar Rectangular Antenna Array for Wideband 5G MIMO Applications</i> Umair Rafique (Capital University of Science and Technology, Pakistan), Hisham Khalil (The University of Lahore, Pakistan)	243
<i>Dynamic Content and Failure Aware Task Offloading in Heterogeneous Mobile Cloud Networks</i> Abdullah Lakhani, dr (Southeast University of China & Southeast University china, China)	248
<i>A Wearable Millimeter Wave MIMO Antenna Design for High Frequency Applications</i> Muhammad Shafeeq (CECOS University of IT & Emerging Sciences, Peshawar, Pakistan), Muhammad Ibrahim (CECOS University of IT & Emerging Sciences, Peshawar, Pakistan), Abdul Hafeez (University of Engineering & Technology, Jaozai Campus, Pakistan), Tama Fouzder (University of Liberal Arts Bangladesh, Bangladesh)	254
<i>Performance Evaluation of Ad Hoc Routing Protocols in (FANETs)</i> Anas Alkhatieb (Umm Al-Qura University, Saudi Arabia), Emad Felemban (Umm Al Qura University, Saudi Arabia)	258
<i>Attribute Rule Performance in Data Mining for Software Deformity Prophecy Datasets Models</i> Salahuddin Shaikh (North China Electric Power University, China)	264
<i>Automatic Cell Phone Detection in Large Volume of Baggage Processing</i> Aftab Khan (University of Engineering and Technology (UET), Peshawar, Pakistan), Zahid Shah (UET Peshawar, Pakistan), Ali Khan (University of Engineering and Technology (UET), Peshawar, Pakistan)	270
<i>A Novel Deep Learning Framework for Intrusion Detection System</i> Mahwish Amjad (Institute of Business Administration, Pakistan), Hira Zahid (Institute of Business Administration, Pakistan), Sania Zafar (Institute of Business Administration, Pakistan), Tariq Mahmood (Institute of Business Administration, Karachi, Pakistan)	274
<i>Live Multimedia Streaming Multicast in Local Area Social Networking Environment of MANETs Using SLIM+ Protocol</i> Nazish Hussaini (University of Sindh, Pakistan, Pakistan)	280
<i>Profiling Vulnerabilities Threatening Dual Persona in Android Framework</i> Khushboo Siddiquie (National University of Sciences and Technology (NUST), Pakistan), Narmeen Shafqat (National University of Science and Technology, Pakistan), Ashraf Masood (National University of Sciences and Technology (NUST), Pakistan), Haider Abbas (National University of Sciences and Technology, Pakistan), Waleed Shahid (National University of Sciences and Technology, Islamabad, Pakistan)	286
<i>The Role of Business Intelligence and Analytics in Higher Education Quality: A Proposed Architecture</i> Ali S. Sorour (School of Computing and Digital Technologies, United Kingdom (Great Britain) & Staffordshire University, Saudi Arabia), Anthony Atkins (Staffordshire University, United Kingdom (Great Britain)), Clare Stanier (Staffordshire University, United Kingdom (Great Britain)), Fawaz Alharbi (Shaqra University, Saudi Arabia)	292
<i>Optimum Placement of Conformal Antenna Array Based on Path Loss Profile</i> Hisham Khalil (The University of Lahore, Pakistan)	298
<i>Big Data Driven Secure IoT Analytics with Trusted Execution Environments</i> MD Shihabul Islam (The University of Texas at Dallas, USA), Latifur Khan (University of Texas, USA)	303
<i>On the Implementation of a Secure Email System with ID-based Encryption</i> El-Tigani Abdelsatir (University of Khartoum, Sudan)	309
<i>Smart Detection and Acquisition Design of Ultrasonic Scanner for Inservice Inspection on Research Reactor</i> Khairul Handono (National Nuclear Energy Agency & PRFN BATAN, Indonesia), Indarzah Putra (National Nuclear Energy Agency, Indonesia), Ikhsan Shobari (National Nuclear Energy Agency, Indonesia), Ismet Isnaini (National Nuclear Energy Agency & PRFN BATAN, Indonesia), Kristedjo Kurnianto (Batan, Indonesia)	313

<i>Detecting DDoS Attack on SDN Due to Vulnerabilities in OpenFlow</i>	
Sarwan Ali (Lahore University of Management Science, Pakistan), Maria Alvi (Lahore University of Management Sciences, Pakistan), Safi Faizullah (Islamic University, Madina, Saudi Arabia), Muhammad Asad Khan (Hazara University, Pakistan), Abdullah M Alshantqi (Islamic University of Madinah, Saudi Arabia), Imdadullah Khan (Lahore University of Management Sciences, Pakistan)	319
<i>Towards Creating Fair Classification Models in Reality Mining Using Data Resampling Techniques</i>	
Ghassan F Bati (Umm Al-Qura University, Saudi Arabia)	325
<i>A Transparent and Trusted Property Registration System on Permissioned Blockchain</i>	
Toqeer Syed (Islamic University of Madinah & CSRDU, Saudi Arabia), Adnan Nadeem (Islamic University of Madinah, KSA & University of Surrey, United Kingdom (Great Britain)), Ali Alzahrani (Islamic University of Madinah, Saudi Arabia), Salman Jan (University of Kuala Lumpur, Malaysia)	329
<i>A Cost Effective IoT-based System for Monitoring Baby Incidents by Deaf Parents</i>	
Nour Bahbouh (Islamic University, Saudi Arabia), Ahmad Alkhodre (Islamic University of Medinah, Saudi Arabia), Adnan Ahmed Abi Sen (Islamic University, Saudi Arabia), Abdallah Namoun (Faculty of Computer and Information Systems, Islamic University of Madinah, Saudi Arabia), Sami Saad Albouq (IU, USA)	335
<i>Linking the Present and past in Virtual Worlds: A Case Study of Development and Navigation</i>	
Ihsan Rabbi (Pakistan), Sajida Akbar (University of Science and Technology Bannu, Pakistan), Umar Farooq (University of Science and Technology Bannu, Pakistan), Kashif Zia (Sohar University & Islamabad, Oman)	341
<i>Permissioned Blockchain-Based Security for SDN in IoT Cloud Networks</i>	
Safi Faizullah (Islamic University, Madina, Saudi Arabia), Muhammad Asad Khan (Hazara University, Pakistan), Ali Alzahrani (Islamic University of Madinah, Saudi Arabia), Imdadullah Khan (Umm Al-Qura University, Saudi Arabia)	347
<i>An Agile Holistic Framework to Support Teachers in Pedagogical Gamification Design</i>	
Alaa Saggah (Staffordshire University, United Kingdom (Great Britain)), Russell Campion (Staffordshire University, United Kingdom (Great Britain)), Anthony Atkins (Staffordshire University, United Kingdom (Great Britain))	353
<i>Distributed Linear Parameter Varying Model Predictive Controller with Event-Triggered Mechanism for Nonholonomic Mobile Robot</i>	
Aries Subiantoro (Universitas Indonesia, Indonesia), Muhammad Hadi (Universitas Indonesia, Indonesia), Abdul Muis (Universitas Indonesia, Indonesia)	359
<i>A Framework for Key Management Architecture for DTN (KMAD): Requirements and Design</i>	
Muhammad Nasir Mumtaz Bhutta (Information Systems Dept & King Faisal University, Saudi Arabia), Adnan Nadeem (Islamic University of Madinah, KSA & University of Surrey, United Kingdom (Great Britain))	365
<i>Power Efficient FPGA-based TCAM Architecture by Using Segmented Matchline Strategy</i>	
Najib Ur Rehman (CECOS University of IT & Emerging Sciences, Pakistan), Omer Mujahid (CECOS University of IT & Emerging Sciences, Peshawar, Pakistan), Zahid Ullah (CECOS University of IT & Emerging Sciences, Peshawar, Pakistan), Abdul Hafeez (University of Engineering & Technology, Jaozai Campus, Pakistan), Tama Fouzder (University of Liberal Arts Bangladesh, Bangladesh), Muhammad Ibrahim (CECOS University of IT & Emerging Sciences, Peshawar, Pakistan)	369
<i>A Generic Interval of Linguistic Variable Based Genetic Fuzzy Inference System; A Utility in Forestry Application</i>	
Sadaf Jabeen (LUMS, Pakistan), Mian Muhammad Awais (LUMS, Pakistan), Basit Shafiq (LUMS, Pakistan)	373
<i>Software Bug Prediction Employing Feature Selection and Deep Learning</i>	
Samar Abozeed (Computer and Systems Engineering, Faculty of Engineering, Egypt), Mustafa EINainay (Islamic University in Madinah, Saudi Arabia & Alexandria University and Virginia Tech, Egypt), Soheir Fouad (Computer and Systems Engineering, Egypt), Mohamed Abougabal (Faculty of Engineering, Alexandria University, Egypt)	379
<i>Stealth Assessment in Serious Games to Improve OO Learning Outcomes</i>	
Suhni Abbasi (Isra University, Hyderabad & Information Technology Centre, Sindh Agriculture University, Tandojam, Pakistan), Hameedullah Kazi (Isra University, Pakistan)	385