

2019 International Conference on Computer, Information and Telecommunication Systems (CITS 2019)

**Beijing, China
28 – 31 August 2019**



**IEEE Catalog Number: CFP1969S-POD
ISBN: 978-1-7281-1375-3**

**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:	CFP1969S-POD
ISBN (Print-On-Demand):	978-1-7281-1375-3
ISBN (Online):	978-1-7281-1374-6

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

Papers Organized in Sessions

Information Technology 1

The School District Reorganization by Combining with Traffic Congestion Data	1
Tong Zhou and Yu Guo; Yang Yang; Zhenqiang Mi; Mohammad S. Obaidat	
HaBiTs: Blockchain-based Telesurgery Framework for Healthcare 4.0.....	6
Sudeep Tanwar; Rajesh Gupta; Sudhanshu Tyagi; Neeraj Kumar; Mohammad S. Obaidat; Balqies Sadoun	
A Fast Aerial Images Mosaic Method Based on ORB Feature and Homography Matrix.....	11
GuiQin Yang; Xing Chang; Jiang Zhanjun	
Performance Evaluation of Fingerprint Recognition Modules on Mobile Device Based on Rule of Three.....	16
Jiaying Guo; Yu Lu; Qian Xie; Qichao Guo	

Networking 1

On the Asymptotic Capacity of Slotted Multiple Access Channel	20
Fedor Ivanov; Pavel Rybin	
Switch Fault Tolerance in a Mirrored K-Ary N-Tree	25
Yamin Li; Wanming Chu	
Dynamic Service Selection based on User Feedback in the IoT Environment	30
Huilan Quan; Ryuichi Takahashi; Yoshiaki Fukazawa	
Research on Gateway Deployment for Throughput Optimization in Wireless Mesh Networks.....	35
Wei Liu; Chang Xu; Zhao Tian; Dong Kun Li; Guan Zhong Lu; Wei She	

Telecommunication Systems

Network polar coded-cooperative SC-FDMA system.....	40
Rahim Umar; Fengfan Yang; Shoaib Mughal	
A New Indoor Localization Algorithm Using Received Signal Strength Indicator Measurements and Statistical Feature of the Channel State Information	45
Chuanghui Ma; Mengwei Yang; Yi Jin; Kang Wu; Jun Yan	
Range Information and Amplitude-phase Information for Multi-carrier Radar Systems	50
Hao Luo; Xu Dazhuan; Yue Chen; Shengkai Xu	
An Integrated Visible-Light and Radio Frequency Communications System	55
Pravallika Dhulipalla; Minju Kang; Taejin Kim; Nathaniel Tan; Siddhantan Govindasamy; Michael Rahaim	

Information Technology 2

AIRS-x: An eXtension to the Original Artificial Immune Recognition Learning Algorithm	61
Dionysios Sotiropoulos; George Tsihrintzis; Dimitrios Giatzitzoglou	

Analysis of Appropriate Security Processes to Mitigate Risk in a Popular Election System.....	66
Segundo Moisés Toapanta Toapanta; Christopher Eduardo Solís Salazar; Daniel Humberto Plua Moran; Luis Enrique Mafra Gallegos; Rocio Maciel	
Prototype to Optimize the Management of Information Security Used by Internal Users in a Public Organization of Ecuador.....	71
Segundo Moisés Toapanta Toapanta; Francisco Xavier Castro De La Rosa; Eduardo Michael Navarrete Fernandez; Luis Enrique Mafra Gallegos; Fabrizio Dario Triviño	
A Short Survey and Challenges for Multiobjective Evolutionary Algorithms Based on Decomposition	76
Qian Xu, Zhanqi Xu; Tao Ma	

Networking 2

Link Congestion Prediction using Machine Learning for Software-Defined-Network Data Plane.....	81
Junying Wu; Yunfeng Peng; Meng Song; Manman Cui and Liang Zhang	
An Intelligent Parallel Algorithm for Online Virtual Network Embedding	86
Khoa TD Nguyen; Changcheng Huang	
A Secure Identity-based Deniable Authentication Protocol for MANETs	91
SK Hafizul Islam; Daya Sagar Gupta; Mohammad S. Obaidat	
Lightweight Two-dimensional Routing Mechanism Based on Agent Calculation.....	96
Yuanyuan Zhou; Wenlong Chen; Rong Xiao; Chengan Zhao; Tianzhu Shao	

Computer Systems 1

Finding Persistent Items using Invertible Bloom Lookup Table.....	101
Zhoudan Lv; Feng He; Lin Chen	
Real-time Resources Allocation Framework for Multi-Task Offloading in Mobile Cloud Computing.....	106
Zhiqiang Gu; Ryuichi Takahashi; Yoshiaki Fukazawa	
Wheeled robot navigation based on a unimodal potential function.....	111
Gregor Klančar; Gasper Music; Hao Chen; Marija Seder	
A new task scheduling strategy based on improved ant colony algorithm in IaaS layer	116
Li Liu; Taiyu Luo; Yuanyuan Du	

Information Technology 3

Research on Technology Empowerment in Digital Transformation of Library in Information Age	121
Chunmeng Weng; Jinzhu Cao; Feiyun Zhu	
Air Quality Forecasting Using SVR with Quasi-Linear Kernel	126
Huilin Zhu; Jinglu Hu	
A Deep Neural Network Based Hierarchical Multi-Label Classifier for Protein Function Prediction.....	131
Xin Yuan; Weite Li; Kui Lin; Jinglu Hu	

Evaluating the use of fuzzy logic in an educational game for offering adaptation	136
Konstantina Chrysafiadi; Maria Virvou; Spyros Papadimitriou	

Networking 3

Improved LEACH-M Protocol for Aerial Sensor Networks	141
Li Tan; Minji Wang; Haoyu Wang; Li Liu	
Optimal Power Allocation Strategy for Multi-target Wireless Wideband Localization System via Genetic Algorithm	145
Fang Liu; Jun Yan	
A Physical Layer Key Generation Scheme Based on Full-duplex Mode in wireless Networks without Fixed Infrastructure	149
Ziyi Zhuang; Shengming Jiang; Yanli Xu; Xiang Luo; Xin Cheng	
A Secure Protocol in MAC Layer of Cognitive Radio Networks	154
Huayi Wu; Baohua Bai	

Computer Systems 2

A Novel Data Compression Technique Incorporated with Computer Offloading in RGB-D SLAM	158
Biwei Li; Yu Guo; Zhenqiang Mi; Yang Yang; Mohammad S. Obaidat	
Scheduling Different Types of Gang Jobs in Distributed Systems	163
Georgios L. Stavrinides; Helen Karatza	
Min Norm Failure Vector Guided Yield Optimization Method for Nanometer SRAM Design.....	168
Chengzhi Jiang; Xiaoming Fan; Yan Xing; Chao Duan; Jiaqi Zhang	
Performance Analysis of Hatch Filtering for Cycle Slips Detection in Single Frequency RTK Positioning.....	172
Salma Zainab Farooq; Echoda Ngedede; Joshua Ada; Dongkai Yang	

Information Technology 4

Understanding Face Age Estimation: humans and machine	177
Jhan Saad Alarifi	
Specification of software requirements with support of business process ontologies	182
Jorge Luís Gregorio; Hilda Oliveira and Simone Prado; Lukas Figueiredo	
Face Recognition Using Depth Images Based on Convolutional Neural Network	187
Juxiang Chen; Zhihao Zhang; Liansheng Yao; Bo Li; Tong Chen	
Model of foresight work habits of agile software team members by personality traits	191
Vanja Catic Kuko; Denis Mušić; Jasmin Azemović; Zanin Vežzović	

Information Technology 5

Knowledge Management System Design using Gamification: A Case study of the e-Government Laboratory, Universitas Indonesia.....	196
Mochammad Arief Hermawan Sutoyo; Dana Sensuse; Hendri Priyambowo; Shidiq Hakim; Deki Satria; Afifah Nurzahrah	

CoNN: Collaborative Neural Network for Personalized Representation Learning with Application to Scalable Task Classification	201
Nanxing Li; Yiqiang Sheng; Ni Hong	
An Optimization Based on General Airport of Complex Condition	206
Huimin Zhang; Fanrong Sun; JingJing Qian	
Medical Handwritten Prescription Recognition Using CRNN	211
Roger Achkar; Khodor Ghayad	

Security 1

An Efficient EUF-ID-CMA Secure Identity-based Short Signature Scheme using Discrete Logarithm.....	216
C. S. Meshram; Mohammad S. Obaidat; Kuei-Fang Hsiao	
Multilevel Permission Extraction in Android Applications for Malware Detection	221
Zhen Wang; Kai Li; Yan Hu; Akira Fukuda; Weiqiang Kong	
Analysis of Authentication System Based on Keystroke Dynamics	226
Amanzhol Daribay; Mohammad S. Obaidat; P. Venkata Krishna	
Model of Shared Secret Applied to a Voting System for the National Electoral Council of Ecuador	232
Segundo Moisés Toapanta Toapanta; Felix Gustavo Mendoza Quimi; Máximo Tandazo; Luis Enrique Mafla Gallegos; Luis Antonio Palomino Romero	

Information Technology 6

BloHosT: Blockchain Enabled Smart Tourism and Hospitality Management.....	237
Sudeep Tanwar; Umesh Bodkhe; Pronaya Bhattacharya; Sudhanshu Tyagi; Neeraj Kumar; Mohammad S. Obaidat	
Simplified Structure for Parameterizing Lp-Norm-Minimized Variable Filters	242
Tian-Bo Deng	
Multi-factor Influenced Integrated Driving Behavior Clustering Analysis Evaluation Model.....	246
Shaojie Liu; Ning Wang; Xiaoting Wang	
Building a Biomedical Ontology for Chronic Liver Disease	251
Kanwal Wahab; Usman Qamar; Khawaja Sarmad Arif; Usman Ali	

Information Technology 7

Automatic Pavement Crack Detection Using HMRf-EM Algorithm	256
Mingyuan Lin; Rundi Zhou; Qing Yan; Xin Xu	
Optimization of Flue Gas Uplift Model Based on Eddy-dissipation Rate of Flight Turbulence	261
Xinmiao Yan; Jiemin Zhou; Fanrong Sun	
Automatic Classification of Discourse in Chinese Classroom Based on Multi-feature Fusion.....	266
Lili Xu; Xiuling He; Jing Zhang; Yangyang Li	
Review on Development of Software and Information Services Industry in Beijing	271
Hongxia Wang; Shaojie Wen	

Security 2

Detecting Signal Spoofing and Jamming Attacks in UAV Networks using a Lightweight IDS	276
Menaka Pushpa Arthur	
Multi-level Reliable Security Mechanism Based on SpaceOS	281
Hongyi Liu, Xuan Hao; Liu Jingang	
A Hash Function based on Sponge Structure with Chaotic Mapping for Spinal Codes	286
Wensha Huang; Lina Wang	
Secure UAV Communication with Robust Communication and Trajectory Design.....	291
Wenlu Fan; Yang Wu; Shaohua Ju; Kun Zhang; Weiwei Yang	