

# **International Conference on Computer Science and Electronic Technology (CSET 2016)**

Advances in Computer Science Research Volume 48

Zhengzhou, China  
13-14 August 2016

**Editor:**

**Xiao Wu**

ISBN: 978-1-5108-2803-2

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2016) by Atlantis Press  
All rights reserved.  
<http://www.atlantis-press.com/php/pub.php?publication=cset-16>

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact the publisher:

Atlantis Press  
Amsterdam / Paris

Email: [contact@atlantis-press.com](mailto:contact@atlantis-press.com)

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

## TABLE OF CONTENTS

<b>OCControl: A Novel Congestion Protocol for Oceanic Delay Tolerant Networks.....</b>	1
<i>Bingxin Li, Xudong Zhang</i>	
<b>Adaptive Iteration Stopping Criterion for AMSS Equations.....</b>	7
<i>Changle Li, Gangfeng Liu, Jie Zhao</i>	
<b>Superluminal Transmission of the Information and Its Applications in Communications and Computer.....</b>	11
<i>Zi-Hua Zhang, Hua-An Zhang</i>	
<b>Research on Internet Model and Distributed Routing Algorithm.....</b>	15
<i>Jie Feng, Feng Liu, Qi Su</i>	
<b>Research on CAD Key Technology for Crystal Lamps with Body Shape Distribution .....</b>	19
<i>Yanxia Liang, Guangguang Dong</i>	
<b>Design and Development of Real-Time Interactive Big Data Visualization Application for Studio Use.....</b>	23
<i>Jinbao Song, Jinhong Song, Jianping Chai, Yachen Li</i>	
<b>How to Test Location-based Mobile Apps.....</b>	27
<i>Jing Cheng, Yi-An Zhu, Tao Zhang, Jerry Gao, Tao Wang</i>	
<b>Optimization of SU's Revenue Based on Price Compensation for Collision.....</b>	32
<i>Huan Huang, Xuxi Li, Xiuxiu Zhang, Jing Luo, Fengyang Zhang, Gang Xie</i>	
<b>Hybrid TDOA/AOA Localization Algorithm in Non-line-of-sight Environments .....</b>	37
<i>Rongpei Ni, Hui Xiong, Luning Xu, Yanchun Xie</i>	
<b>A Smoothing Multidimensional Filter Method for Nonlinear Complementarity Problems.....</b>	42
<i>Congwei Wu, Jiping Cao, Yahong Zhu</i>	
<b>Towards Ontology-Based Battlefield Information Fusion Framework for Decision Support .....</b>	45
<i>Xiaoli Li, Weihua Li, Youmiao Qu</i>	
<b>A Large-scale and Global Car Dataset for Verification .....</b>	49
<i>Lingji Hu, Xingcheng Luo, Jianhua Deng, Fengjie Lai, Jian Hu, Yongbin Yu</i>	
<b>Knowledge Structures Based Adaptive Testing Model.....</b>	53
<i>Xia Li, Hao Zhang, Huali Yang, Guixin Xing</i>	
<b>Design and Implementation of Photo Printer System Based on Wechat Public Platform.....</b>	57
<i>Fan Li, Xiangdong You</i>	
<b>Attack and Improvement of a Proxy Multi-Signature Scheme.....</b>	60
<i>Hongru Wei, Jiayuan Hu</i>	
<b>Design and Implementation of Photo Printing System Using WeChat and Electronic Payment.....</b>	64
<i>Zhixin Zhang, Xiangdong You</i>	
<b>A Trusted Recommendation Method Based on Social Circles.....</b>	67
<i>Chengjian Su, Genlang Chen, Guanghui Song</i>	
<b>The Design and Implementation of User Autonomous Encryption Cloud Storage System Based on Dokan .....</b>	73
<i>Jiawei Yin, Junxiang Yang, Yang Chen</i>	
<b>Design and Research of Intelligent Greenhouse Monitoring System Based on Internet of Things.....</b>	76
<i>Fujuan Li, Shihua Li, Zhisong Wang, Zhongfei Chen, Xinyuan Zhao</i>	
<b>Research on Intelligent Detecting Technology Based on Extension Fuzzy Method .....</b>	80
<i>Minghui Wang, Yongquan Yu, Ge Wei, Xiang Ren, Dan Liu, Yujing Wei</i>	
<b>Optimal Search on Navigation Equipment Troubleshooting Database .....</b>	84
<i>Minghai Li, Tianwei Li, Hairui Ma, Su Wang, Yili Liu, Dingding Guo</i>	
<b>A Quick Wideband Spectrum Sensing Algorithm Based On Analog Filter .....</b>	87
<i>Ningning Hou, Gang Xie</i>	
<b>NC-ODTN:Ocean DTN Network Coding Protocol.....</b>	92
<i>Xudong Zhang, Bingxin Li</i>	
<b>A New Algorithm for Mining Frequent Itemsets Based on Fp-Search Algorithm with K Road Pruning.....</b>	98
<i>Hao Jiang, Ruda Shen</i>	
<b>An Intelligent Visual Path-Planning Framework .....</b>	102
<i>Jingming Guo, Haoyu Ji, Tianchi Fu</i>	
<b>Petri Net-based Modeling and VHDL Implementation of Digital Systems.....</b>	108
<i>Jun Wan</i>	
<b>Design of FH/TH Hybrid Spread Spectrum System Based on FPGA .....</b>	112
<i>Longjun Liu, Hongwei Ding, Qianlin Liu, Weifeng Zhang</i>	

<b>Mining Weighted Rare Association Rules Using Sliding Window over Data Streams .....</b>	116
<i>Weimin Ouyang</i>	
<b>Analysis and Design of a Novel Metamaterial-Based Microstrip Antenna .....</b>	120
<i>Shiquan Zhang</i>	
<b>Research of Single Unit Fuzzy Event Cognitive Computing Based on Goal.....</b>	123
<i>Kang Feng, Xuemei Shi</i>	
<b>A Novel Learning Algorithm on Probability Measure for Intrusion Detection.....</b>	129
<i>Xiang Fang, Ying Jia</i>	
<b>Design and Realization of Topic Search Engine for Chinese Internet Fraud Information .....</b>	133
<i>Liang Hu, Ai-Chun Ding, Yu-Chi Zhu</i>	
<b>An Adaptive Algorithm of K-means on HSA Platform .....</b>	136
<i>Zhenshan Bao, Qi Luo, Wenbo Zhang</i>	
<b>A Circuit Fast Fault Diagnosis System Developed with PODEM Algorithm .....</b>	140
<i>Ke Liu, Weidong Lv, Qingyu Ou, Xueguang Zhou</i>	
<b>A Scribble-Based Interface for Mesh Segmentation .....</b>	144
<i>Fuyan Yang</i>	
<b>Improvement of Single-pulse Angle Measurement and Tracking Performance Based on Real-time Calibration System for Amplitude and Phase .....</b>	148
<i>Zhonghua Zhang, Huidong Qiao, Manxi Wang</i>	
<b>A Static Comprehensive Analytical Method for Buffer Overflow Vulnerability Detection .....</b>	151
<i>Bilin Shao, Jiafen Yan, Gengqing Bian, Yu Zhao, Dan Song</i>	
<b>Track Data Split Measure Based on Least Square Algorithm .....</b>	156
<i>Xingfu Zhang, Yanbo Li, Lei Liu, Feng Zhao, Jingfeng Song</i>	
<b>Mining Rare Sequential Patterns in Large Transaction Databases .....</b>	159
<i>Weimin Ouyang</i>	
<b>Design and Analysis of a 2-DOFs Right-angle-shape Piezoelectric Energy Harvester .....</b>	163
<i>Zhangfang Hu, Ruilin Xu, Yuan Luo, Ruyi Gan</i>	
<b>The Big Data Analysis of Two-degree Contacts on Hadoop.....</b>	167
<i>Hao Wu, Xiongfei Li</i>	
<b>Identification Methods for Bibliographic Reference Entries in Editable Scientific and Technical Documents.....</b>	172
<i>Yang Lei, Ying-Ai Tian, Ning Li, Qi Liang, Wei Zhao</i>	
<b>Secure Information Assets with Data: An Information Security Governance Framework Using Orchestrated Data Analytics from a Holistic Perspective .....</b>	179
<i>Huaying Chen, Zhijun Song</i>	
<b>A Novel Algorithm for Detecting Spatial-Temporal Trajectory Outlier.....</b>	184
<i>Shenglan Lv, Yifan Zhang, Genlin Ji, Bin Zhao</i>	
<b>Research on RoboCup Passing Ball Based on Partial Least Square .....</b>	191
<i>Yuan Song, Zekai Cheng</i>	
<b>Research of Electrical Equipment State Identification Based on K-means Clustering Algorithm .....</b>	196
<i>Liting Lei, Hui Xu, Rongrong Fan</i>	
<b>Design and Implementation of an Improved Costas Loop Circuits by Using FPGA .....</b>	201
<i>Fangcheng Xing, Suzhen Wang, Weihua Zong, Shujian Zhang</i>	
<b>Research on Phishing AP Attack Detection Technology Based on RSSI .....</b>	205
<i>Jie Ling, Shuangqi Jin</i>	
<b>Design of High Efficiency X-ray Detector.....</b>	209
<i>Bo Yang</i>	
<b>Neural Network Front-ends Based Speech Recognition in Reverberant Environments .....</b>	213
<i>Zhen Zhang, Peng Li</i>	
<b>Walk Alone and Be Fast: Trajectory Privacy-preserving in Complicated Environment .....</b>	219
<i>Zheng Huo, Ping He, Ruoyan Wei</i>	
<b>Analysis and Study of 3D Printing Speed and Molding Room Temperature on Mechanical Properties of PCB Epoxy Resin Substrate .....</b>	223
<i>Wei Song, Dejian Zhou</i>	
<b>An Outline of Big Data Emerging from Food Supply Chain and Potential Value in Food Management .....</b>	227
<i>Shuangyang Li, Feng Tan, Jiaqi Liu, Shaoyuan Cheng, Haoming Liu, Wally Keith, Xiang Dong</i>	
<b>Evaluation Method of Access Capacity Based on TSC in Distribution Network .....</b>	231
<i>Fengchuan Nie, Minfang Peng, Yong Xu, Haiyan Zhang, Liang Zhu, Hongwei Che, Zhengyi Liu</i>	
<b>Research on the Efficiency of Minesweeping Operation for Multi-Magnetic Minesweeping Gear .....</b>	234
<i>Xinqin Chen, Wei Zhang, Longteng Li, Yu Ge, Chang Shu, Xianyu Meng, Chengwen Zhu</i>	
<b>Diffusion Performance of Moisture in Conductive Adhesive Interconnection Structure.....</b>	238
<i>Yang Lu, Dejian Zhou</i>	

<b>Research on the Innovation Closed-loop Internet Financial Service Model of Traditional Industry</b>	242
<i>Maoguang Wang, Leilei Ge, Jiangping Zhao</i>	
<b>Two Schemes of Finger Vein Cryptosystem</b>	246
<i>Gesi Meng, Peiyu Fang</i>	
<b>Some Inequalities for the Generalized Trigonometric and Hyperbolic Functions</b>	251
<i>Baoju Sun</i>	
<b>Reliability Research of Vehicle Electric Window Control System Based on CAN-bus</b>	255
<i>Wansong Liu, Wenjun Xiao, Linhu Hui, Yi Wang</i>	
<b>Micro Channel and Heat Transfer Column Structure Effect on Heat Dissipation Performance of LTCC Microwave Component by Numerical Simulation Analysis</b>	259
<i>Zhiping Liao, Zhaohua Wu</i>	
<b>Technical and Economic Analysis on the Large-scale Application of Renewable Energy in Buildings</b>	263
<i>Di Li, Suiqi Han, Jie Li</i>	
<b>Design and Implementation of Fresh Food Micro Marketing Model - A Case Study of WeChat Toon</b>	270
<i>Ruonan Sun, Xinlei Jin, Na Zhang, Juanjuan Shan, Jian Xu</i>	
<b>Thermal Simulation for Continuous-flow PCR System</b>	273
<i>Shenglan Zeng, Bingyu Chen, Lingfeng Cai, Quanjun Liu</i>	
<b>Load Forecasting Method based on Rough Set and Information Fusion Theory</b>	277
<i>Lifeng Chen, Yuechun Jiang, Fei He, Jie Zhang, Xuqiong Yang</i>	
<b>The Designing of Junior High School Online English Listening Test in ITS</b>	281
<i>Wan Liu, Jia Ruan</i>	
<b>An Improved Method for Moving Target Detection Based on Spatial-temporal Fusion Filtering</b>	287
<i>Zhongmin Li, Haochen Wu, Guowei Zou</i>	
<b>Simulation Analysis on Mass Concrete Temperature Field of Navigation Lock in Changsha Integrated Hub</b>	290
<i>Ke Jin, Hui Peng, Chen Wen, Fan Wu, Shaofei Yin</i>	
<b>Experiment and Evaluation of Acute Rheumatic Fever Diagnosis Application</b>	295
<i>Sanjib Raj Pandey, Chio-Hong Lai, Xiaoming Yao, Jixin Ma</i>	
<b>The Application of Sparse Partial Least Squares Regression in Electricity Consumption of Yunnan Province</b>	299
<i>Shuting Peng, Lin Dai, Tingting Guo</i>	
<b>A Method of Subject Extension Pitch Extraction for Humming and Singing Signals</b>	304
<i>Jinghui Zhang, Shen Yang, Huahua Wu</i>	
<b>Electron Mobility Degradation Due to Remote Coulomb Scattering in Ge MOSFET</b>	310
<i>Haoyu Xu, Jing Zhang, Shuhua Wei, Xiaolei Wang, Wenwu Wang</i>	
<b>Investigation on the Dominant Key to Achieve Superior Ge Surface Passivation by GeOx Based on the Ozone Oxidation</b>	314
<i>Jie Zhang, Shuhua Wei, Jing Zhang, Xiaolei Wang, Wenwu Wang</i>	
<b>Comparative Study on Economic Performance of Tianjin under Multi-Indicator System</b>	318
<i>Xuelin Zheng, Zhanxin Ma</i>	
<b>Status and Prospects of Agricultural Information Technology</b>	322
<i>Jifang Liu, Jianzhai Wu, Jianhua Zhang, Jiajia Liu</i>	
<b>Research on the Severity Assessment of Unexpected Events Based on the Web Information</b>	328
<i>Huali Cai, Fang Wu, Yawei Jiang, Qi Duan, Jian Kang</i>	
<b>Research on Brand Value Evaluation Methods of Bank Enterprises</b>	331
<i>Huali Cai, Fang Wu, Jian Kang, Qi Duan, Yawei Jiang</i>	
<b>FDLDA: An Fast Direct LDA Algorithm For Face Recognition</b>	334
<i>Zhibo Guo, Kejun Lin, Yunyang Yan</i>	
<b>The Idea of Effectively Building the Next Generation of Information Security Protection System</b>	338
<i>Ying Wu</i>	
<b>TRIZ-based Patent Design Around for Enterprises: A Pencil Extender Device Innovative Redesign</b>	342
<i>Haiyan Zhang, Siyuan Cheng, Xuerong Yang, Jingping Zhou, Rui Wang</i>	
<b>Author Index</b>	