

# **2015 International Conference on Computer Science and Applications (CSA 2015)**

**Wuhan, China  
20-22 November 2015**



**IEEE Catalog Number: CFP1548V-POD**  
**ISBN: 978-1-4799-9962-0**

**Copyright © 2015 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 publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1548V-POD
ISBN (Print-On-Demand):	978-1-4799-9962-0
ISBN (Online):	978-1-4799-9961-3

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

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# 2015 International Conference on Computer Science and Applications

## CSA 2015

### Table of Contents

Preface.....	.xi
Conference Organization.....	.xii
Program Committee.....	.xiii
Keynotes.....	.xvii

---

#### **Digital Signal Processing: Algorithms and Applications**

Stereo Camera Motion Estimation Based on Euclidean Reconstruction.....	1
<i>Ning-Hao Xu, Xin Du, and Yun-Fang Zhu</i>	
Learning Stereoscopic Visual Attention Model for 3D Video.....	6
<i>Gang-Jian Huang, Xin Du, and Yun-Fang Zhu</i>	
Unified Format Definition for Seismic Data.....	10
<i>Yong-Jiang Liu and Bi-Long Wen</i>	
An Image Classification Method Based on Multiple Visual Dictionaries.....	14
<i>Jian Zhang, Xiao-yin Zhang, Zhou Lei, and Wen-feng Shen</i>	
A Heuristic Algorithm on Space Information Flow.....	20
<i>Alfred Uwitonze, Yuan-Qing Ye, Jia-Qing Huang, and Wen-Qing Cheng</i>	
A Target Tracking Algorithm of Passive Sensor Normal Truncated Model.....	25
<i>Rong Wang, Xin-Xi Feng, Wei Du, and Xiao-Mei Yan</i>	
A Spark-Based Study on the Massive Video-Receive IO Issues.....	30
<i>Zhou Lei, Hong-Xun Lin, Hong-Guang Du, Wen-Feng Shen, Hui-Ran Zhang, and Yu Lei</i>	
Research on Metadata Management Scheme of Distributed File System.....	37
<i>Lin Huo and Ran Yi</i>	
Estimating the Tolerable Waiting Time Using Fuzzy Logic.....	42
<i>Meng-Ting Li, Xiang Li, and Jian Yin</i>	
A Framework for 2D Model-Based Pose Estimation.....	48
<i>Wei Wang, Guang-Jun Zhang, and Zhen-Zhong Wei</i>	

A Seam Deviation Real-Time Detection Method Based on Laser Vision Technology .....	52
<i>Wen-Ming Zhang, Xiao-Xi Liu, and Jian Xu</i>	
Handwriting Signature Identification Based on Improved Adaptive Median Filtering Algorithm .....	55
<i>Mei Wang, Xiao-Rong Lin, Liang Wang, Miao-Li Wen, and Hong-Yang Zan</i>	
Method of Detecting Logistics Driver's Fatigue State Based on Computer Vision .....	60
<i>Guo-Fang Zhao and Ai-Xia Han</i>	
A Long Time Tracker Based on Self-Correction and Random Selection Strategy .....	64
<i>Zhi-Qin Zhang and Yi Cai</i>	
Research on Mining Optimization of FP-Table Algorithm in Mobile Electricity Market .....	68
<i>Xuesong Zhang, Chuncheng Gao, Yong Dai, and Minghai Jiao</i>	
A Content-Based Intelligent Ranking Model for Microblog .....	73
<i>Hui-Xiang Xiong, Jin Hu, and Xu Yang</i>	
A Pore-Based Method for Fingerprint Liveness Detection .....	77
<i>Meng-Ya Lu, Zhi-Qiang Chen, and Wei-Guo Sheng</i>	
Rotation Invariant Common Sketch Extraction .....	82
<i>Si-Yuan Li, Ya-Li Yang, Yun-Feng Sun, and Dan Hui</i>	
The Financial Data of Anomaly Detection Research Based on Time Series .....	86
<i>Chen-Ming Guo, Ling-Yu Xu, Hui-Fang Liu, Lei Wang, Xiang Yu, and Bo Han</i>	
Destriping Line-Scan Color Image in Transform Domain .....	90
<i>Wen-Zhu Yang, Zhao-Hai Liu, Si-Le Wang, and Su-Kui Lu</i>	
Moving Shadow Detection Algorithm Using Multiple Features .....	95
<i>Wen-Hua Xie, Ji-Yong Zhao, and Yan-Ming Hu</i>	
The Algorithm Reseach of Detecting Single-Phase-to-Ground Fault Line on Distribution Network with Distributed Generation .....	99
<i>Qiang Fan, Kai Huang, Yong Xiao, Mei-Mei Xu, Jian-Guo Chen, and Wei Gu</i>	
SAR Image Denoising Method Based on Improved Wiener Filtering and P-M&LLT Partial Differential Equation .....	105
<i>Yang Cai, Xing-Tong Chen, and Li-Ya Dong</i>	
A New MPR Selection Algorithm Based on the Optimal Subset .....	109
<i>Hong Zhang, Wen-Jie Fan, and Chuan-Zhen Wang</i>	
CRAWL: A Trace Routing Algorithm Based on Hybrid Two-Layer Topology .....	113
<i>Li-Ming Zheng, Xiao-Dong Tan, Wei-Dong Sun, and Xiao-Dong Li</i>	
Integrated Blur Image Quality Assessment Based on Human Visual Perception .....	119
<i>Wei Wang, Hui Liu, Jin-Jin Zheng, and Jun-An Yang</i>	

Behavioral Learning for Data Adjacent Graph Construction in Semi-supervised Learning .....	125
<i>Zhen Liu, Jun-An Yang, Hui Liu, and Wei Wang</i>	
Chinese Natural Language Processing Based on Semantic Structure Tree .....	130
<i>Qi-Jin Yin, Shao-Ping Wang, Yi-Nan Miao, and Dou Xin</i>	
Improved One-Class SVM for Pattern Denoising .....	135
<i>Yong Tian, Xiao-Ming Wang, and Xiao-Huan Yang</i>	

## **Computer Applications Design, Implementation and Testing**

The Software Design of the Monitor and Simulate System Based on 1553B Bus .....	141
<i>Xiao-Min Zhang, Qing-Zhong Jia, and Jia-Yuan Shan</i>	
Design and Implementation of Warehouse Management System Based on B/S Mode .....	146
<i>Pin Liu, Guo-Qing Yao, Hong-Yue Cai, and Zhou Yang</i>	
Design Optimization and Implementation of Bootloader in Embedded System Development .....	151
<i>Chen Sha and Zhu-Ying Lin</i>	
Real-Time Grading Evaluation of Quality of Strokes in Chinese Characters Handwriting .....	157
<i>Rui-Fang Han, Wei-Hua An, En-Dong Xun, and Qi Li</i>	
Reduction of Feature Items Based on Thesaurus and Its Application in FCA .....	163
<i>Wei He and Shuang Li</i>	
Hand Segmentation Based on Improved Gaussian Mixture Model .....	168
<i>Yi Zheng and Ping Zheng</i>	
Hand Contour Detection Using Spatial Homomorphic Filtering and Variational Level Set .....	172
<i>Yi Zheng and Ping Zheng</i>	
A Research of DD Path Automatically Generated System .....	177
<i>Juan Zhang, Hong-Xin Liu, Yu-Qing Feng, and Yong-Hua Li</i>	
Emergency Call Using EEG and Android Operation System for Disabled People .....	180
<i>Hong-Yang Zan, Liang Zhu, Mei Wangm, Xue-Bin Qin, and Jzau-Sheng Lin</i>	
Short Message Service Using Steady-State Visual Evoked Potential and Android Operation System for Disabled People .....	184
<i>Mei Wang, Chang-Feng Xu, Hong-Yang Zan, Pai Wang, and Heng Zhang</i>	
The Research and Design of Smart Home System Based on MQX .....	188
<i>Hong Wang, Hong-Ning Bian, Hong-Xia Zhang, and Feng Zhang</i>	

Rainstorm Flood Building Risk Dynamic Assessment Conceptual Model Utilization Agent Based Modeling .....	191
<i>Wen-Ze Lai, Wen-Bo Li, Ying-Liang Huang, Wei-Xiang Wang, and Dan Xiao</i>	
A Constructing Method of Mongolia-Chinese-English Multilingual Semantic Net Based on WordNet .....	196
<i>Yu-Liang Zhang and Hasi</i>	
The Analysis of Customer Churns in e-Commerce Based on Decision Tree .....	199
<i>Feng Guo and Hui-Lin Qin</i>	
PGST: Using Personal and Global Factors in the Spatio-Temporal Domain for Mobility Relationship Measurement .....	204
<i>Tao Guan and Ke-Ren Wang</i>	
Design and Development of the Farmers' Personalized M-learning System .....	208
<i>Feng Yu, Cui-Ping Tan, Jun-Feng Zhang, Su-Fen Sun, Huai-Guo Zheng, Xin Liu, Hui Zhang, and Xiao-Jing Qin</i>	
Isogeometric Analysis: The Influence of Penalty Coefficients in Boundary Condition Treatments .....	213
<i>Feng Chang, Wei-Qiang Wang, Yan Liu, and Yan-Peng Qu</i>	
A New Feedback-Based Intra Refresh Method for Robust Video Coding .....	218
<i>Yi-Ran Zhou, Guang-Qiang Li, and Shu-Shi Ning</i>	
Abnormal Event Detection Using Recurrent Neural Network .....	222
<i>Xu-Gang Zhou and Li-Qing Zhang</i>	
A Novel Research on Feature Extraction of Acoustic Targets Based on Manifold Learning .....	227
<i>Hui Liu, Wei Wang, Jun-An Yang, and Zhen Liu</i>	
Transfer Learning by Fuzzy Neighborhood Density-Based Clustering and Re-sampling .....	232
<i>Zhen Liu, Jun-An Yang, Hui Liu, and Wei Wang</i>	
Analysis of the Development and Application of Salary Management System in Railway Enterprise .....	237
<i>Lei Ma and Yi Chun</i>	
A Software Testing Method Based on Error Propagation Slicing Technology .....	241
<i>Kun Wang and Yi-Chen Wang</i>	
A LS-SVM Based Nonlinearity Compensator for Thermocouple Vacuum Gauge .....	246
<i>Fu-Qiang Xie, Song Gao, Xing Qu, and Yao-Geng Tang</i>	
The Design of the GPS/BDS Dual Micro-track Recorder and the Application in Puclic Information .....	250
<i>Ya-Li Zhang, Jing Qin, and Xiang Huang</i>	

A Test Based on Beam Angle of Ultrasonic Transducer Array .....	255
<i>Jia-Xiao Wang, Peng Rao, Guang-Qi Luan, and Ming-Zhao Sun</i>	
Design and Development of Control Credit Loss Standardization System Based on Dimension Reduction Model .....	260
<i>Yong-Fei Shan, Shu-Hai Fan, Qun Pan, and Tian Xu</i>	
The Design of Function and Flow for Warehouse Management System in Pharmaceutical Enterprises —The Case of NATON .....	264
<i>Xia Wei, Ning Ling, Meng-Meng Ren, and Shu-Hai Fan</i>	
The Application of PDCA Cycle Management in Project Management .....	268
<i>Meng-Meng Ren, Ning Ling, Xia Wei, and Shu-Hai Fan</i>	
Analysis of Evolutionary Path of Enterprise Cooperative Innovation Based on Technical Inputs .....	273
<i>Qun Pan, Shu-Hai Fan, Yong-Fei Shan, and Tian Xu</i>	
The Design and Development of Warehouse Management Information System on Hongxing Logistics .....	278
<i>Ning Ling, Xia Wei, Meng-Meng Ren, and Shu-Hai Fan</i>	
The Design of Subway Station Console Extension Module .....	283
<i>Ya-Fang Wang, Na Wu, Xiu-Jie Zhai, and Xiao-Pan Wang</i>	

## **Web Service, Network and Information Security**

Safety Analysis Based on Stochastic Time Petri Nets .....	287
<i>Ying Peng, Shu-Zhen Yao, and Huo-Bin Tan</i>	
A Requirement-Driven Web Service Composition Modeling Framework .....	293
<i>Min Jiang and Xiu-Guo Zhang</i>	
Randomized Convergent Encryption in the Standard Model via UCEs .....	298
<i>Hui-Ge Wang, Ke-Fei Chen, Bao-Dong Qin, and Liang-Liang Wang</i>	
The Implementation of Adaptive Web Service Composition .....	303
<i>Zhuang Ma, Xiu-Guo Zhang, Zhi-Yi Zhu, and Hao Wang</i>	
Exception Classification and Handling Mechanism of CA-CCML Web Service Composition Language .....	308
<i>Jing-Fei Zhang, Xiu-Guo Zhang, Hao Wang, and Zhi-Yi Zhu</i>	
Research on Replica Strategy in Cloud Storage System .....	313
<i>Lin Huo and Ran Yi</i>	
A Construction Mechanism of Routing Service Chain Based on the Service Customization .....	318
<i>Xiao-Qiang Xi and Yan Zhang</i>	
Decipher the Hidden Secrets Behind Networks: Analyze the Influence Based on the Co-author Network .....	323
<i>Ran Li, Han Li, and Bo-Wen Liu</i>	

Technical and Economic Models of Information Security .....	329
<i>Ru-Yi Ye and Li-Jun Feng</i>	
Research on Method for Information Standardized Description and Transmission in Networked Fault Diagnosis .....	333
<i>Yu-Hao Shen and Cang-Hai Lu</i>	
Research on Technology of Process Hiding Based on VMM .....	339
<i>Wei-Liang Kong, Guang-Yu Zeng, and Deng-Yuan Zhou</i>	
Executable Program Code Segment Address Randomization .....	345
<i>Jian Lin, Yu-Dong Guo, Yu-Jia Man, and Shao-Huang Zhou</i>	
Web Service QoS Prediction with Adaptive Calibration .....	351
<i>Guo-Sheng Li and Na Wang</i>	
Research on Data Communication Between Intelligent Terminals of Medical Internet of Things .....	357
<i>Yong Cui, Gang Shi, Xiao-Song Liu, Wei Zhao, and Yong-Qing Li</i>	
Evaluation of Spatial Configuration and Cross-Regional Sharing of Urban Shelters .....	360
<i>Jia Yu, Jia-Hong Wen, Yong Jiang, Shao-Ni Du, Bang-Gu Liao, Wei-Jiang Li, Xian-De Li, and Jun Gao</i>	
Network Security Monitoring and Defense System Framework Design Using Mobile Agents Based on DoDAF .....	366
<i>Yan Tong, Jian Zhang, Ming-Di Xu, and Tao Qin</i>	
Demystifying the Resilient Clustering Protocols in Wireless Sensor Networks .....	371
<i>Muhammad Toufique and Hong-Bo Jiang</i>	
Research on Resource Allocation Scheme Based on Access Control in Cloud Computing Environment .....	377
<i>Jun-She Wang, Jin-Liang Liu, and Hong-Bin Zhang</i>	
<b>Author Index</b> .....	<b>381</b>