Proceedings

The 3rd International Conference on Information Technology and Computer Science

ITCS 2011

23-24 July 2011  Huangshi, China

Editors

V.E. Muhin, National Technical University of Ukraine
W.B. Hu, Wuhan University

Sponsored by

Huangshi Institute of Technology
Research Association of Modern Education and Computer Science

Co-sponsored and supported by

Huazhong University of Science and Technology
National Technical University of Ukraine
Harbin Institute of Technology
Wuhan University
**TABLE OF CONTENTS**

Adaptive Tracking Control of Uncertain Electrostatic Micro-Actuators.......................................................1  
Wenlei Li, Ting Lan, Xuhua Shi and Weixing Lin

Novel Design of a Nonlinear Robust Governor for Turbine Generating System..........................................5  
Wenlei Li, Ting Lan, Xuhua Shi and Weixing Lin

A Routing Policy for Multi-Interface Multi-Channel Wireless Mesh Network  
Combined with Channel Assignment and its Application in Coal Mine......................................................9  
Xiaolong Feng, Zhong Han, Jiansheng Qian and Hu Zhong

The Information Fusion Kalman Filter Weighted by Scalars or Diagonal Matrices for Sequential Processing........14  
Peng Wang and Jiye Zhang

An Efficient Algorithm of Isoline Generating and Color Filling Based on Square Grid................................18  
Ai-guo Xu, Zhi Zhou and You-sheng Yu

DNA Algorithms of Incidence Chromatic Number.........................................................................................22  
Xikui Liu, Yan Li and Jin Xu

DNA Sequencing and the Shortest Superstring Problem...............................................................................26  
Xikui Liu, Yan Li and Jin Xu

Make and Improvement of Embedded Linux Root File System Cramfs Based on S3C2440..........................30  
Fan Liu and Fengxing Zhou

Fuzzy Sliding Mode Control and Synchronization for a Class of Uncertain Chaotic Systems.....................34  
Shu-hua Peng and Deng-hua Li

Tumor Classification Using Dataset Splitting Based Neural Network Ensemble........................................38  
Huijuan Lu, Wutao Chen, Xiaoqing Ma and Yi Lu

Ship Rolling Sequence Prediction Based on RBF-NAR Model........................................................................43  
L.S.Liu, X.F.Peng and J.H.Zhou

Position Dependencies among Multinomial Distribution for Motif Discovery Based on Gibbs Sampling....47  
Wei Wang and Lifang Liu

A New Depth-Aided Multidirectional Disocclusion Restoration Method for Depth-Image-Based Rendering...51  
Shihang Zhang, Yueheng Zhu and Lai-man Po

The Combined Scheme of LDPC-STBC for Asynchronous Cooperative MIMO Systems  
with a Linear Dispersion Structure..............................................................................................................55  
Shan Ding, Hongming Xu, Lijia Zhang and Shi Zhang

An Efficient Method for Slap Fingerprint Segmentation Based on Connected Component Analysis..............59  
Xiaoguang Chen and Mingyan Li
Alternating Lower-Upper Splitting Iterative Method for Positive Definite Linear Systems
Qian Xiang and Song-ping Wu

Molecular Dynamics and Mesoscopic Simulation for the Miscibility of Polypropylene/Polyamide-11 Blends
Luxia Yang, Yizheng Fu, Xiaoyan Liang and Liqiong Liao

A Method of Call-Search for UUV to Search Markovian Motion Target
Pan Chen and Xiao-feng Wu

Select the Optimal Web Services Based on QoS
Zhijin Qin and Xiangbin Han

The Multilayer Combined Input and Crossbar Queued Switches
Jun Wu, Yunhe Wang and Bin Li

Synchronized Output Regulation of Networked Dynamic Systems with Switching Topology
Teng Jiang, Xuejie Wang and Yanjun Li

Network Security Analysis Based on Host-based Attack Graph
Shangqin Zhong, Wenbin Yao, Haihui Ge and Yixian Yang

Analysis of the Delay of WiFi-based DTN Ferry Mechanism
Bao-ping Ding, Ming Chen, Guang-song Zhao and Xiu-lei Wang

A Novel Method on Accurate Computation of Residence Time of Water Molecules Around IONS
Mingyan Li, Xiaoguang Chen and Zhenhao Duan

High Security Trust Chain Model for Mobile Terminal
Xiehua Li, Jihong Cao, Mingsong Xu and Wenming Lu

Secure and Load-Balanced Routing in Wireless Sensor Networks
Jianmin Zhang, Qiushi Fang and Ping’an Li

Enhancing the Key Establishment Protocol on Wireless Sensor Networks
Jianmin Zhang, Rui Yang and Jian Li

A Simple and Effective Threshold Setting Approach for PRACH Detection in LTE System
Yang Ke, Qiushi Fang and Ping’an Li

The Document Clustering Techniques Research
Ke Yang

A Population-Based Encoding GA Approach to Container Stockpile Section Plan
Wenbin Hu and Zhengbing Hu

Study of GR-Chord Algorithm Based on Redundancy-Reducing of Routing Table
Haixia Li and Chuiwei Lu

A New High-Efficiency Architecture of FFT Processor for LTE-Advanced System
Jionhong Zheng, Ping Yang and Zongzhi Huang
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A New Wavelet-Based Digital Watermarking Algorithm</td>
<td>134</td>
</tr>
<tr>
<td>Wei Hu and Yinghong Qi</td>
<td></td>
</tr>
<tr>
<td>Optimal Robustness of Scale-Free Networks</td>
<td>138</td>
</tr>
<tr>
<td>Jianhua Zhang, Yunze Cai and Xiaoming Xu</td>
<td></td>
</tr>
<tr>
<td>Study on Incident Detection Technology for Transit Line Operation Based on GPS</td>
<td>142</td>
</tr>
<tr>
<td>Jian Zhang, Wenquan Li, Peng Zhang, Mei Wang and Bin Ran</td>
<td></td>
</tr>
<tr>
<td>K-Sensitive Edge Anonymity Model for Sensitive Relationship Preservation on Publishing Social Network</td>
<td>146</td>
</tr>
<tr>
<td>Jing Li, Jianmin Han, Fangwei Luo and Xiaoqiang Jiang</td>
<td></td>
</tr>
<tr>
<td>Fast Map-Matching Algorithm Based on Computational Geometry and Weights</td>
<td>150</td>
</tr>
<tr>
<td>Meng Yang and Bingjun Wang</td>
<td></td>
</tr>
<tr>
<td>An Improved Nearest Plane Algorithm for Closest Vector Problem</td>
<td>154</td>
</tr>
<tr>
<td>Chao-hai Xie and Ran Tao</td>
<td></td>
</tr>
<tr>
<td>Research of the P2P Worm Defense Mechanism Based on Trust Mechanism</td>
<td>158</td>
</tr>
<tr>
<td>Hao Xiong and Zhihong Wang</td>
<td></td>
</tr>
<tr>
<td>Motion Prediction with Gaussian Process Dynamical Models</td>
<td>162</td>
</tr>
<tr>
<td>Shi Qu, Lingda Wu, Yingmei Wei and Ronghuan Yu</td>
<td></td>
</tr>
<tr>
<td>Application of Data Mining in Alarm Processing of Communication Network</td>
<td>166</td>
</tr>
<tr>
<td>Huan An, Chunxiao Fan and Yuexin Wu</td>
<td></td>
</tr>
<tr>
<td>Simulation and Experiment of Chaotic System for Detecting Weak Periodic Signal</td>
<td>170</td>
</tr>
<tr>
<td>Minjie Du, Hui Li, Jinyan Cai and Limin Liu</td>
<td></td>
</tr>
<tr>
<td>Multi-Sensor Management: Multi-Sensor Scheduling For Target Tracking Using Fisher Information Matrix Perturbation</td>
<td>174</td>
</tr>
<tr>
<td>Jun Tong and Gan-lin Shan</td>
<td></td>
</tr>
<tr>
<td>An Algorithm Improving Frequency Resolution Based on DDS Calibration</td>
<td>178</td>
</tr>
<tr>
<td>Yuanbin Cai and Ying Zhou</td>
<td></td>
</tr>
<tr>
<td>The Processing of the Stroke Data in Aero Display Signal Test</td>
<td>182</td>
</tr>
<tr>
<td>Linhu Cong, Changjin Wang, Jin Cong and Chenchen Zhang</td>
<td></td>
</tr>
<tr>
<td>Conditional Random Fields Based Real-time Intrusion Detection Framework</td>
<td>186</td>
</tr>
<tr>
<td>Jiaojiao Gu, Wenzhi Jiang, Wenxuan Hu and Xiaoyu Zhang</td>
<td></td>
</tr>
<tr>
<td>A Method on Data Navigation Based on Semantic Correlations</td>
<td>190</td>
</tr>
<tr>
<td>Xin Jin, Xiaoman Wang, Jingjing Yan and Weitai Liang</td>
<td></td>
</tr>
<tr>
<td>Research on Data Consistencies Based on Mobile Real-Time Database</td>
<td>194</td>
</tr>
<tr>
<td>Jun Tie, Xiaorong Wang, Jia Jin and Zhongshuang Feng</td>
<td></td>
</tr>
</tbody>
</table>
Data Management System Applied to the Structural Intensity Analysis of Aircraft
Wenbin Liu, Geng Liu, Yabin Liu and Xiaonan Zhang

Central Soccer Robot Auto-Adapted RGB Threshold Value Method
Wenying Tian and Lihua Wang

Reconfigurable SHA Chip Design Based on FPGA
Pengfa Deng, Zhenjun Du and Rong Chen

Prediction of Coal Mine Gas Concentration Based on Constructive Neural Network
Yueqin Zhang and Qianqian Zeng

A New Algorithm for Parameter Estimation of LFM Signal
Ning Han, Chao-xuan Shang and Gang Wang

A Multiple Spheres Weighted Support Vector Clustering Algorithm
Sheng Sun

Blind Separation of Excavator Noise Based on Independent Component Analysis
Lida Liao, Qinghua He, Guohao Zhang, Daqin Zhang and Zhongjie Wang

The Fog Sedimentation Rate Control and Simulation of Salt Spray System
Chen Zhao and Jun Wang

On The Prediction in Time Domain of Ship Non-Stationary Swaying Motions
Jian-jun Hou and Yan-sheng Qi

The Research of 3D Turning Page Effect-Based Axial Symmetry Algorithm
Tian-lin Yuan, Jia-ming He and Peng-sheng Gu

Study on Storage Model of Map/Reduce-Based Index Classification
Xiaoli Lu and Jiaming He

A New Mobile Widget Algorithm Used to Resist Tamper Based on Code Signature
Li-xia Jong, Jia-ming He and Ken Chen

Xiehua Li, Mingsong Xu, Jihong Cao and Haiyang Zhang

Optimization for Garbage Collection Algorithm Based on Embedded Java Virtual Machine
Zhi-jun Wu, Jia-ming He and Xing-bin Zeng

Research on the Location of the Target Based on Regular Triangle Array
Fan Yao and Lilie Feng

A Search Algorithm of Structured P2P Network Based on Semantic Routing
Chuiwei Lu, Donghan Liu and Wei Nie
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uyghur Named Entity Identification Basing on Maximum Entropy Model</td>
<td>327</td>
</tr>
<tr>
<td>Yong Yang, Chun Xu and Awudan Gulimire</td>
<td></td>
</tr>
<tr>
<td>The Research of Vehicle Recognition Based On SVM</td>
<td>331</td>
</tr>
<tr>
<td>Gang Tong, Kesheng Qin and Min Zhai</td>
<td></td>
</tr>
<tr>
<td>Research on Enterprise Evolution Based on Agent</td>
<td>335</td>
</tr>
<tr>
<td>Yanhua Shao</td>
<td></td>
</tr>
<tr>
<td>ESF-S: An Exception Supervision Framework for Service-Object Software at Service Level</td>
<td>339</td>
</tr>
<tr>
<td>Caoqing Jiang, Shi Ying, Xiangyang Jia, Hua Guan and Yuehua Ding</td>
<td></td>
</tr>
<tr>
<td>Study on Object Recognition Method Based on the Combination of Zernike Moment Invariants and BP Neural Network</td>
<td>343</td>
</tr>
<tr>
<td>Yuchan Xie and Zhonghai He</td>
<td></td>
</tr>
<tr>
<td>Two Special Formations Reconfiguration Based on Multi-Impulse Control Method</td>
<td>346</td>
</tr>
<tr>
<td>Zhi Zhang, Ying Liao, Xiongchun Liu and Hangxing Dong</td>
<td></td>
</tr>
<tr>
<td>A Method for Reducing the Number of Training Samples in KNN Text Classification</td>
<td>350</td>
</tr>
<tr>
<td>Wei Zheng, Guo-he Feng and Xuan Wang</td>
<td></td>
</tr>
<tr>
<td>Research on the Chessboard Representations of Dots-and-Boxes</td>
<td>354</td>
</tr>
<tr>
<td>Yu Yang, Shu-qin Li and Yan Zhao</td>
<td></td>
</tr>
<tr>
<td>Research on the Language Model Compression Combing Domain Compressing and Importance Pruning</td>
<td>358</td>
</tr>
<tr>
<td>Yu-dong Gao, Jia-ming He and Jin-xiang Li</td>
<td></td>
</tr>
<tr>
<td>Design and Research of Multimedia-Stream Filtering System Based on P2P</td>
<td>362</td>
</tr>
<tr>
<td>Guifang Wu, Chuiwei Lu, Li Ruan and Honghua Wu</td>
<td></td>
</tr>
<tr>
<td>Application and Study on QR-Based Least-Squares Method Algorithm in Concrete Ultrasonic Computerized Tomography</td>
<td>366</td>
</tr>
<tr>
<td>Yao Fan and Yanli Chu</td>
<td></td>
</tr>
<tr>
<td>Impact of Market Expansion on Brand Diffusion: The Case of Mini Passenger Vehicle in China</td>
<td>371</td>
</tr>
<tr>
<td>Xiaoyu Zhao, Aiguo Cheng, Zhihua Zhong and Yang Shen</td>
<td></td>
</tr>
<tr>
<td>A Novel Efficient Threshold Proxy Signature Scheme</td>
<td>375</td>
</tr>
<tr>
<td>Zhong Zhang and Qiu-liang Xu</td>
<td></td>
</tr>
<tr>
<td>A Shortest Path Problem on the Network with Stochastic Arc Length</td>
<td>378</td>
</tr>
<tr>
<td>Fangguo He</td>
<td></td>
</tr>
<tr>
<td>Numerical Study of Limit Cycles for Three Planar Polynomial Systems</td>
<td>382</td>
</tr>
<tr>
<td>Xiao-chun Hong and Bo Wu</td>
<td></td>
</tr>
<tr>
<td>Application of Embedded Industrial Computer in Aeroengine Test</td>
<td>386</td>
</tr>
<tr>
<td>Jin Xie</td>
<td></td>
</tr>
</tbody>
</table>
Bus Arrival Time Prediction Based on Error Weighted of Historical and Real-time Data
Cheng Sun, Min Sun and Qiushi Cui

Research on Code Generation Based on Process Model-driven Technology
Jianbin Liu and Guangqiang Han

The Design and Implementation of VPN Testing Tools Based on IPSEC
Siping Xu

Design of Automated Examination Timetabling System Based on Hybrid Genetic Algorithm
Yong OuYang and Hongfang Luo

Research of Aircraft’s 3D Pose Measurement Based on Images
Kai Zhang, Gan-lin Shan, Hai Chen and Bing Ji

Application of Fuzzy Neural Network Control in the Constant Temperature Water-Bath System
Haiduan Huang, Tonghui Cao, Hao Zhang and Hui He

On the Construction of Embedded PH process Automatic Control System
Li Yao

Simulation of Multi-Beam Interference Newton’s Rings
Bo Lv

A Dynamic Routing Algorithm in Wireless Sensor Networks Based on Ant Colony Optimization
Xinxin Zhou and Yan Zhao

A Survey of Task-Based Parallel Programming Models
Xin Li

On Performance Optimization of Iscsi San
Gui-fang Wu, Honghua Wu and Ling Chang

Design and Application of Automated English Writing Scoring System
Shaowu Cheng and Xianzhi Chen

Design of Real-Time Scheduler for Embedded Software Test System
Yichen Wang and Yikun Wang

Application of Experiment Design Method in System Simulation of Flight Vehicle
Xiaodong Yan

MP3 Decoding Design Application Based on Space 3200 Embedded Microprocessor
Qin Gao and Yake Zhang

One of the Adaptive Clustering Algorithm Based on Typical and Stochastic Data Sets
Changyun Jia and Liang Jin

Classification of Blended Edible Oils Based on Raman Spectroscopy with Chemometrics
Pengcheng Wang, Wubo Ding and Xiaojing Chen
On the Study of Intelligent Algorithm in the Auto-Generating Test Paper.........................................................457
Wenqing Qi

Existence of Oscillatory Solutions of Second Order Functional Equations with Damping Terms.................................461
Wei Lu and Weigao Ge

Analysis and Design of Online Bookstore Based on J2EE..........................................................................................465
Songlin Zhou

Research of Typhoon Rainstorm Amount Estimation Based-on Elman Neural Network..............................................469
Shihong Chen and He Chen

The Clustering Algorithm of Evolitional Data Stream Based on Density.................................................................473
Yuyu Meng and Liying Zheng

Research on Maneuvering Target Tracking for Passive Sensors Based on Truncation Gauss Probability Model.............478
Binbin Li, Xinxi Feng, Zhaoying Wang and Yu Lei

Study on Information Security Based on State Inspection Packet Filtering Technology..............................................481
Chao Gao and Jin Xie

Design of Information Platform of Smart Grid Based on Cloud Computing and RIA..................................................485
Caifeng Cao and Dedong Jian

Research on the Relation of the Dispels Voltage and Compensating Voltage in Flat FAIMS..........................................489
Lei Gao, Yinghui Ma, Shoujun Li and Xiaowen Xu

Path Recognizing and Evaluating for Relational Contract in Medical Cooperation Platform Based on DSM...........493
Jing You

The Data Analysis of The Home-Care Demand, Prediction and Logit Model Estimation—
Based on the Stata Statistical Software Technology.................................................................................................497
Yu-jiao Li

Research on Mobile Agent in E-commerce Alliance.................................................................................................501
Shaojun Cao and Hongxia Huang

Fuzzy Cluster Analysis of Large Data under Semantic Web..........................................................................................505
En Zhou, Wen-tian Ji and Miao-cun Xu

The Design and Implementation of a Workflow Management System for Supply Chain Management.......................508
Shujiao Ma and Chunming Ye

Remote Monitoring System for Coal Mine Safety Based on Wireless Sensor Network..............................................512
Yingli Zhu, Jingjiang Song and Fuzhou Dong

Classified Frequency Sensitive Self-organizing Maps Algorithm Based On Variance Threshold.................................516
Dong-mei Chen and Hongsong Li
The Study of Sniffing Techniques and Defensive Strategy in WIFI

Shi Zheng

Design and Realization of the Henan Highway Maintenance Management and Supervision System Based on GIS

Zhihui Feng, Hong Chen, Pengtao Xue and Yanjie Zhu

XML Data to Relational Database Storage Mapping Technique

Chun-mei Chi and Gao Feng

Three Dimensional Simulation and Visualization of Larix Crown Models

Renbo Song

Multiple Positive Solutions for General Sturm-Liouville Boundary Value Problems on the Half-line

Yanmei Sun

The Solutions for Semi-Positone Boundary Value Problems with Linear Functional Boundary Conditions on the Half-Line

Yanmei Sun

Research of Realizing Dynamic Scene Based on SAI Technology

Song Tian and Qiong Zhao

A Study of Urban Land Carrying Capacity in Hebei Province

Aiqing Guo and Han Liu

S3C2410-Based Design of Touch Screen in General HMI System

Fei Yang and Lu Lv

The Research and Design of Intrusion Detection System in IPv6 Network

Lan Shi, Yu Zhou, Jing Li and Jingxuan Lin

A Research about the Impact of Segment Size on TCP Performance in Wireless Environment

Han Hu and Xin-e Li

An Image Acquisition and Processing System Design Based on FPGA

Yujun Tang, Yingjie Hu and Xia Wang

A Study on the Application of the Vehicle's Intelligent Weighing System

Jian Li

The Design of General Nonesuch Courses Website Based on B/S mode

Huiyan Li

On Interpolation of Triangular Fuzzy Numbers

Yongchao Hou and Yun Qian

Research and Implementation on Test and Diagnose Program by ATML

Jinling Zhou, Jianwang Hu, Kai Zhang and Cheng Zhao
Clustering Algorithm Study Based on HTS-SOM
Laixin Shen and Richang Hong

Research and Applications of Data Analysis Preparing for Materials Data Mining
Xianhao Miao and Gang Yu

The Data Analysis and Prediction of the Spiritual Comfort Demand of Home Care Security—
Based on the Stata Statistical Software Technology and Logit Model
Bao-qian Duan and Yu-jiao Li

Research and Implementation of LCD Driver Based on Embedded Linux
Junqin Wu and Jian Song

Constructing Algorithm for Distributed Concept Lattice Based on Semantic Heterogeneous Database
Liying Zheng, Minzhao Zhang and Rong Fu

Analysis on the Methods of Network Topology Discovery in IP Network
Fang Li, Yu Xia and Jun Cheng

An Empirical Study on Influencing Factors of IPO Underpricing
Xiaoyan Lv and Shan Zhai

Digital City Architecture and Key Technology
Su Ge, Ling Xu, Jianzhong Qiao and Shukuan Lin

On Problems Existing in Dynamic Weighting Toll Collection of Highway and Solutions
Yaoming Li

Security Study during Handover in LTE
Fatang Chen and Xian Ji

Computer Specialty English Teaching Innovation: Based on Students’ needs
Huix Yang and Bei Li

Case-Based Learning Technologies for Teacher Education
Xiaoxia Wang, Zhiping Li, Yong Chen and Zhigang Tan

Nonconforming H1-Galerkin Mixed Finite Element Method for Dual Phase Lagging Heat Conduction Equation
Yanmin Zhao, Jingyu Liao and Dongwei Shi

A Design of Paperless Examination System Based on ASP.NET
Lu Lv and Qin Gao

Superclose Analysis of a Nonconforming Finite Element for Nonlinear Viscoelastic Wave Equation
Fenling Wang, Mingzhi Fan and Dongwei Shi