2008 International Symposium on Intelligent Information Technology Application Workshops

(IITAW)

Shanghai, China
21-22 December 2008

Pages 1-547
# TABLE OF CONTENTS

## SESSION 1: NEURAL NETWORKS AND SOFT COMPUTING

**Immunity Genetic Algorithm Based on Elitist Strategy and its Application to the TSP Problem**

Liang Yan, Yang Kongyu .......................................................... 1

**An Improved Attribute Reduction Algorithm Based on Attribute Importance Function**

Longzhen Duan, Zhenyu Xiahou, Erying Zhong, Qing Zhou, Longjun Huang, Yan Xiao .......................................................... 5

**Decision-Making Analysis on Industrial and Mining Enterprise Resettlement Projects**

Song Chen, Shunfa Cao .......................................................... 10

**A Searching Mechanism Based on Dynamic Topology Regularization in Gnutella Network**

Chun Ying Kang .......................................................... 14

**A Study on Roughness Coefficient Using BP Neural Network**

Changjun Zhu, Enhui Jiang, Jinliang Zhang, Junhua Li, Lianjun Zhao .......................................................... 18

**Polygon Auto-Construction Algorithm Based on Vector External Product of Virtual Arc**

Yun Ling, Yi Ouyang, Min Zhang .......................................................... 22

**A New Hybrid Ant Colony Algorithm for Clustering Problem**

Gao Shang .......................................................... 26

**The Environmental Quality Evaluation Based on BP Neural Network and PSO and Case Study**

Xiaoguo Zhou, Wenzhong Zhang, Wei Yuan, Qingchao Liu .......................................................... 30

**Combined Kernel SVM and Its Application on Network Security Risk Evaluation**

Cong-Cong Li, Ai-ling Guo, Dan Li .......................................................... 34

**Application Research of Support Vector Machine in Network Security Risk Evaluation**

Cong-Cong Li, Ai-ling Guo, Dan Li .......................................................... 38

**Toward Domain-Driven Data Mining**

Zhengxiang Zhu, Jifa Gu, Wenzin Yang, Xingsen Li .......................................................... 42

**Selection of Suppliers Based on Rough Set Theory and VIKOR Algorithm**

Jiaagang Guo, Wei Zhang .......................................................... 47

**The Application of Intelligent System on Transforming Process of Alcohol**

Peng Dong, Feng Dai, Songtao Wu .......................................................... 51

**The Construction of Index System Based on Improved Genetic Algorithm and Neural Network**

Peng Dong, Feng Dai, Songtao Wu .......................................................... 56

**The Application of Genetic Algorithm on the Training of Neural Network for Acoustic Target Classification**

Weimin Hou, Ming Bao, Yan Shang, Jing Wang .......................................................... 60

**Modeling of the Combustion Optimizing Based on Fuzzy Neural Networks**

Huilin Fu, Youcheng Xie, Lei Chen, Zhongli Shen .......................................................... 64

**Optimization Study on Resource Equilibrium with Fixed Time Limit for a Project Based on SPSO Algorithm**

Qingfu Li, Jixian Guo, Mingxing Yi .......................................................... 68
Genetic Algorithm for TDRS Communication Scheduling with Resource Constraints ..............................................72
Zong-li Li, Xin Meng, Shu-qian Liu, Sheng-lei Zhang, Wei Zheng

A Study of Corporate Financial Crisis Prediction System: Based on BP Artificial Neural Network ..........................................................76
Xin Zhao

An Empirical Study of Data Mining in Performance Evaluation of HRM .................................................................80
Xin Zhao

Studies of Knowledge Reductions Based on Bayesian Rough Set Model .................................................................84
Jiaming Zhong, Dingfang Li

Research on Electronic Commerce Customer Value Data Mining Based on Rough Logic .............................................88
Jiaming Zhong, Dingfang Li

Research on the Building and Reasoning of Travel Ontology ..............................................................................92
Huaming Gong, Jianyi Guo, Zhengtao Yu, Yuanhong Zhang, Zhengshan Xue

A K-means Clustering Algorithm with Meliorated Initial Centers and its Application to Partition of Diet Structures ...........................................96
Jianwen Xie, Yuanbiao Zhang, Weigang Jiang

Integration of TACO and BP Neural Network ..................................................................................101
Jing Leng

Non-Linear Correlation Discovery-Based Technique in Data Mining ..............................................................105
Bo Liu

The Logic Properties of Association Rules and its Application ........................................................................110
Bo Liu

An Intelligent Diagnosis to Type 2 Diabetes Based on QPSO Algorithm and WLS-SVM ........................................115
Chi Yue, Liu Xin, Xia Kewen, Su Chang

An Application-Level Signatures Extracting Algorithm Based on Offset Constraint .....................................120
Wen Long, Yang Xin, Yixian Yang

A Fast Watershed-Based Image Segmentation Algorithm Using Local Merging Strategy ............................................124
Sheng Chen, Zhanfeng Shen, Jiancheng Luo, Lijing Gao

A Bayesian Dynamic Forecast Model Based on Neural Network ...............................................................128
Chaohong Song, Qiang Luo, Feng Shi

Multi-agent Negotiation Model Based on RBF Neural Network Learning Mechanism .........................................131
Ning Liu, Dong Xia Zheng, Yao Hua Xiong

SESSION 2: INTELLIGENT CONTROL

Non-Fragile Guaranteed-Cost Robust H [infinity] Control for Uncertain Singular Time-Delay Systems ..........135
Yongbo Lai, Hui Yan

The Application of Decision Support System in ERP-Based Cost Control ...................................................139
Ping Kang

The Design and Simulation of Control System of Omni-Directional Mobile Robot ......................................143
Yanfei Liu, Qi Li, Shiqiang Jiang, Guoliang Zhang

An Intelligent Model for Urban Demand-Responsive Transport System Control .......................................147
Xu Jin, Dianhong Wang

Iterative Learning Control Study on Single Inverted Pendulum ........................................................................151
Xianhe Zhang, Jie Wu, Xisheng Zhan
The Leakage Control System Based on an Expert Controller for Air Preheat in Power Plant
Xunjin Zhan, Sunyi, Yu Yang

Robust Stability Analysis for Networked Control Systems
Zhizhong Huo, Zhixue Zhang

Study and Application of Key Technologies of LAN Remote Control
Ai-min Wang, Yu-xing Yang, Xiao Li

Supply Chain Cooperation Based Warranty Optimization
Peng Yang, Junqing Sun

Electromagnetic Clutch Based High-Low Carpet Jacquard Control System
Guangfeng Chen, Yanzhu Yang, Kun Zou, Yize Sun

Acceleration and Deceleration Control for Step Motor Base on UC/OS-II
Yansxia Liu, Liting Cao

Street Lamp Control System Based on Power Carrier Wave
Jun Liu, Cangxu Feng, Xuesong Suo, Aijun Yun

Global Robust Stability for Neural Networks with Delays
Zhonghua Li, Jianjun Wang

Congestion Control for Industrial Ethernet Using Network Calculus
Guitang Wang, Jun Liu, Huan Yao, Jing Ning

The Design of Improved Fuzzy Controller Based on MCU for Central Air Conditioner
Yingjun Guo, Yingbao Zhao, Zengli Li, Jianguang Liu

Derivation of Linearization Small Deviation Motion Equations of Blended Control System
Hua Zhai, Juan Liu, Zhi-jun Gu, Bo-zhao Zhou

TCSC Applied to Suppress Inter-area Mode Oscillation Based on PMU and Fuzzy Logic Control
Zhijian Liu, Hongchun Shu, Jilai Yu

Fault Detection of Singular Stochastic Systems via Observers
Zhuohuan Hu, Zhengzhi Han, Zuohua Tian

SESSION 3: INTELLIGENT SYSTEM

Research on Enterprise Application Integration Architecture and Development Approach
Xudong Song, Xueping Wang, Xiaobing Liu

From the Inference System Suitable for Human to the Inference System Suitable for Computer
Xunwei Zhou, Hong Bao

Study of Exponentially Cross-coupled Chaotic Systems for a Random Bit Generator
Zuowen Tan, Qi Wu

A Grid Model Design of Service-Oriented
Yuyan Jiang, Gouzheng Xing

Multi-Sensor Data Fusion Based on Fault Detection and Feedback for Integrated Navigation Systems
Jian Wang, Kun Liang

An Enhanced Anti-jamming Capability Method for Frequency Hopping Synchronization System
Qing Li, Fen Li, Yangshi Zhang
Intelligent Content Push for SCORM-based E-Learning Systems .................................................. 233
Yan Peng

The Usage of Semantic Condition Expression for Semantic Web Service Matchmaking ................ 237
Zhi-Hao Zeng, Shi Ying

Design and Implementation of a Novel User Interface for Embedded System ............................ 241
Lei Wang, Liang Pan, Xiaohui Sun, Hong Ni

An Intelligent Multi-Port Memory ................................................................................................. 245
Zuo Wang, Qi Zuo, Jiaxing Li

Research on the City Gas Network Resisting Engineering Geological Hazard Damage Warning and Decision Support System ........................................................................... 249
Peng Wang, Huai Li, Kun Dong

Research on Applications of Soft Computing Agents ................................................................. 253
Peiyou Chen, Jing Zhang

The Research of the Intelligent Fault Diagnosis System Optimized by GA for Marine Diesel Engine ............................................................... 257
Peng Li, Qi Jin, Haixia Gong

VOD System with Web Pages from PowerPoint File .................................................................... 261
Ying Peng, Chanle Wu, Huaiqiang Yao, Qing Xiong

Research on the Adjustment Order of Structural Parameters of the Decision Feedback Equalizer .................................................................................. 265
Jichang Guo, Zhen Lv, Xiangping Li

Crime Knowledge Management Approach Based on Intuition Concept Space ......................... 270
Ping He

Single-Document Automatic Abstracting System Based on Topic Partition ............................... 274
Yuanhong Zhang, Jianyi Guo, Huaiming Gong, Zhengshan Xue, Yanmei Zhang

Development of Web Information System of Corporation: An Exploring Research .................. 278
Weidong Guo

A Field Display Universal LED Configuration Design .................................................................. 282
Hai Tan, Bin Tang, Xinqin Zhou, Shaoming Pan, Shibin Pan

Reversible Data Hiding Based on Histogram Shifting of Prediction Errors ............................ 286
Wien Hong, Tung-Shou Chen, Chih-Wei Shiu

Multicast Services of Digital Television in a New Management Framework .......................... 290
Ming-Ju Yang, Wen-Chung Chang, Kao-Feng Yawn, Tsung-Chan Cheng, Cheng-Han Chung, Win-Jet Luo, Chia-Hui Ho

SESSION 4: MACHINE LEARNING

A New Method for MLE Training Based on Multi-model Weighting ........................................ 294
Yahui Wu, Jun Guo, Gang Liu

Index Weight Technology in Threat Evaluation Based on Improved Grey Theory .................. 298
Yongxin Li, Kaizhuo Wang

The Coal Mine Flood Prediction Research Based on Neural Network and D-S Theory of Evidence .................................................................................. 302
Yingmei Zhang, Zhenzhen Cheng
A New Grid Economy Architecture with Resources Pricing Fluctuation Based on Belief Function
Yongsheng Hao, Cao Chen, Guanfeng Liu, Shiqing Li

A Benefit Driven Grid Jobs Scheduling Heuristic Algorithm
Yongsheng Hao, Jun Wang, Shiqing Li, Guanfeng Liu

The Choice of Different Take-Back Models in CLSC
Yu-yan Wang

A Linear Genetic Programming with Reusable Gene
Zongyue Wang, Hongchao Ma

Post-Modernism Educational Phenomena Based on Web2.0 Culture
Weihua Jiang, Haiming Hu, Zhitong Zhu, Yinling Li

A Unified Process of Knowledge Representation and Acquaintance
Xixu Fu, Hui Wei

Research on Text Clustering Algorithm Based on K_means and SOM
Li Xinwu

Research on Semi-Automatic Construction of Domain Ontology Based on Machine Learning and Clustering Technique
Lin He, Han-qing Hou

Fuzzy Number Intuitionistic Fuzzy Set and Its Representation of Structured Element
Jinhui Hu, Yang Yang, Sizong Guo

Research on Several Main Issues in the Application of Agent
Guo-chang Li

Establishment of Dynamic Chain Model in Cold Roll Forming Process and Research on Node Intelligent Agent
Guo-chang Li

The Research of Search Engine Based on Semantic Web
Yi Jin, Zhuying Lin, Hongwei Lin

Application Research of SVM in The Evaluation of Scientific Research Project
Xuejun Wang, Jianfang Guo

On Malicious Software Classification
Jianhui Lin

A Resource Selection Algorithm Based on Binary Variable in Grid
Jianhua Adu, Hui Peng, Juhong Tie

Research on Multi-Class SVM Combining with LDA
Junjie Chen, Wei Zhao, Haifang Li

Web Services Dynamic Discovery Based on Modified CLIQUE Algorithm
Lixin Shen, Yan Chen, Zhiguo Wang, Weihong Yu, Sen He, Shoudong Zhang

Fuzzy Least Square Support Vector Machine Applied to Detect Damage for Fiber Smart Structures
Jianhong Xie

Study of Chinese Text Classification Algorithm on Semantic Web
Shiqun Yin, Fang Wang, Yuhui Qiu

An Improved Mobile Agent Communication Mechanism in Enterprise Information System
Ning Wang, Xiaowen Li
SESSION 5: PATTERN RECOGNITION

Research on an Improved Active Shape Models .......................................................... 390
Qingyan Liu, Yuan Liu

Application of Grey Relation Analysis in Image's Edge Detection of Pests in Stored Grain ........................................... 394
Long Zhou, Ming Fang, Xue-zi Wang, Mou Yi, Zhan-wu Yu

A LD-aCELP Speech Coding Algorithm Based on Modified SOFM Vector Quantizer ......................... 397
Shuhong Wu, Gang Zhang, Xueying Zhang, Qunqun Zhao

Research on the Algorithm of Tibetan Speech Recognition Based on DBN ........................................... 401
Xiuqin Pan, Xiaona Xu, Hong Zhang, Yue Zhao, Yongcun Cao

Research on the Algorithm of Noisy-Robust Tibetan Speech Recognition Based on RBF ......................... 405
Xiuqin Pan, Yong Lu, Yongcun Cao, Hong Zhang, Yue Zhao, Xiaona Xu

Research on the Algorithm of Small Object Detection of Image Based on Genetic Algorithm .................................................. 409
Xiuqin Pan, Yong Lu, Yue Zhao, Xiaona Xu, Yongcun Cao

The Application of Pattern Recognition on Modeling .............................................................................. 413
Ling Zhou, Jie Chen, A. Aghdam

The Study of Recognizing and Eliminating Fake Projectile Signals in the Sky Screen ................................. 416
Hanshan Li, Zhaohui Yuan, Zhiyong Lei, Hongwei Jiang

A Novel Radar Target Recognition Algorithm Based on SVM .......................................................... 420
Junxian Li, Limin Shen, Shuo Yang

Novel Method of Color Image Enhancement Based on Wavelet Analysis .................................................. 424
Jinyong Cheng, Caixia Liu

Dual Color Images Watermarking Algorithm Based on Symmetric Balanced Multiwavelet ...................... 428
Shujiao Liao

Vehicle Recognition Based on Support Vector Machine ................................................................................. 432
Bo Cui, Tongze Xue, Kaihe Yang

Research of Image Denoising Based on Edge Preservation ......................................................................... 436
Luo Qiang, Wang Jun, Luo Li, Hongjun He

Event Importance Analysis Based on Directed Graph ................................................................................. 440
Huilai Zhi, Zongtian Liu

The Clustering Algorithm Research of Image Emotional Characteristics Based on Ant Colony .................. 444
Haifang Li, Xia Wen, Hui Jin

Research of Relief Pattern Design Based on Improved Genetic Algorithm .................................................. 448
Luxin Tang, Huan Yao, Zhijun Zhang, Jun Liu

The Study of Driver Fatigue Monitor Algorithm Based on Skin Color Segmentation .................................. 452
Liying Lang, Haoxiang Qi

Perspective Correction Method for Chinese Document Images ......................................................................... 456
Wangbo Zhang, Xiaoyuan Li, Xingjie Ma

Research and Implementation of Emotional Feature Classification and Recognition in Speech Signal .................. 460
Wang Yu
A Highly-Efficient Face Recognition Method Based on Weighted LDA ................................................................. Ru-yan Wang, Xin Cui, Ming Xiong, Huan-jia Peng, Ke-wei Lv 464

Recognition of Time-frequency Image Ridge by PSO ......................................................................................... 468 Ming Yu, Jianchao Zeng, Jian Zhao, Xianguo Yan

An Approach for Quantitative Evaluation of the Degree of Facial Paralysis Based on Salient Point Detection ................................................................................................................................. 472 Junyu Dong, Lijing Ma, Qingqiang Li, Shengke Wang, Li-an Liu, Yang Lin, Muwei Jian

Image-Based Fitting Diffuse and Specular Reflectance of Object ........................................................................ 476 Huijian Han, Caixian Chen, Jiaye Wang

Fast Texture Synthesis Using Wavelet Coefficient Fitting ..................................................................................... 480 Muwei Jian, Shuan Liu, Junyu Dong

Trademark Image Retrieval Using Wavelet-based Shape Features ......................................................................... 485 Muwei Jian, Liang Xu

A Biological Approach to Speech Analysis ........................................................................................................... 490 Dan Yang, Bin Xu, Xu Wang

SESSION 6: INFORMATION SECURITY

Study and Analysis of the E-Commerce Security Based on WPKI ........................................................................ 493 Fang Liu, Qi Yang

The Credit Risk Assessment Method Based on Evidence Reasoning ...................................................................... 497 Xuemei Zhu, Ping Wang

An Improved Rao-Blackwellized Particle Filter for SLAM .................................................................................... 501 Haijun Wang, Shaoliang Wei, Yimin Chen

Application on Negotiating about ID3 Reasoning Method ....................................................................................... 505 Niu Xiaotai, Jia Zhentang

A Computation Model of Trustworthy Degree ........................................................................................................ 509 Yanfang Ma, Min Zhang

Analyze and Model the Primitive Attacking Mechanisms of Malicious Codes ......................................................... 513 Zemao Chen, Junge Zhao, Xiaoping Wu, Weimin Tang

A Modified Quantum-Behaved Particle Swarm Optimization for Constrained Optimization ................................ 517 Huaying Liu, Shaohua Xu, Xingzhu Liang

A Postorder Traversal Location Model Taking Security on Routes into Consideration ........................................ 521 Meng Yang, Jiping Cao, Jianshe Song, Jun Guo

A Digital Image Watermarking Scheme against Geometric Attacks ...................................................................... 525 Zhang Hengyi, Xi Chen, Xianling Wang, Kaiguo Yuan

Clustering and Similarity Analysis of File Names in EDonkey Systems ................................................................. 530 Min Zhang, Changjia Chen, Yan Wei

An Efficient Fast Mode Decision Algorithm Based on Motion Cost for H.264 Inter Prediction ................................ 536 Weipeng Ma, Shuyuan Yang, Li Gao, Chaoke Pei

Research of Intelligent Home Security Surveillance System Based on ZigBee ....................................................... 540 Jun Hou, Chengdong Wu, Zhongjia Yuan, Jiyuan Tan, Qiaojiqiao Wang, Yun Zhou

Fast Algorithm of the Inter Mode Decision for H.264/AVC ................................................................................... 544 Guihua Liu, Quanyang Feng
Fuzzy Particle Filter Used for Tracking of Leukocytes ................................................................. 548
Zhenjiang Cai, Zongli Lin

All Zero Block Detection Based on Statistics for AVS-M Intra Frame Prediction ........................................ 552
Yun Wu, Yong Zhao, Xuemin Wang, Yule Yuan, Ling Shen, Chunyu Yu

SESSION 7: INFORMATION PROCESSING

Image Watermarking Based on DC Component in DCT ........................................................................ 556
Gaorong Zeng, Zhengding Qiu

Two Stage Estimation in Data Processing ..................................................................................... 560
Pan Xiong, Chen Gang, Chen Yu

A Character Segmentation Method without Character Verification ..................................................... 564
Wenfa Qi, Xiaolong Li, Bin Yang

Design Data Acquisition and Processing for IMU ........................................................................... 568
Chunpeng Kang, Zhong Su

Fabric Color Difference Identification Based on Fuzzy Membership Criterion ........................................ 572
Liu Suyi, Wan Qian, Zhang Leduo

A New Particle Filter for Target Tracking ....................................................................................... 576
Wang Yali

The Opportunities and Challenges of Information Extraction ............................................................ 580
Qian Zhu, Xianyi Cheng

Kernel Discriminant Analysis Algorithm for Document Categorization ........................................... 584
Ziqiang Wang, Xu Qian

On the Classification of Prostate Pathological Images Based on Gleason Score .................................. 588
Xiangmin Xu, Xiaojie Xing, Yusheng Huang, Zhuocai Wang

A DSP Based Optimized JPEG2000 Algorithm for Real-time Application ........................................ 592
Wenda Wang, Yanling Hao

Real-Time Color Night-Vision for Visible and Thermal Images .......................................................... 595
Xiaojing Gu, ShaoYuan Sun, Jian’an Fang

A New Fuzzy Reasoning Algorithm Based on Choquet Fuzzy Integral ................................................ 599
Sufang An, Jichao Hu

A Conceptual Action Model of Reputation Mechanism and Corporate Governance .......................... 603
Yueping Wang, Leping Shen, Jin Zhu

Research on Data Exchange Based on Data Binding ........................................................................ 607
Jie Song, Nana Li, Bin Liu, Yongfeng Dong

Symbolic Dynamic Analysis of Physiological Time Series ................................................................ 611
Fuyuan Liao, Jue Wang

Feature Extraction in Text Clustering Based on Theme ........................................................................ 615
Nianyun Shi, Kong Jing, Jiuyun Xu, Yongxiang Duan, Chunhua Li

Eye Contour Extraction Method from Monocular Image with Monkey Face ....................................... 619
Dengyi Zhang, Cheng Zhang, Qu, Jianhui Zhao, Zhong Zhang, Youwang Ke, Bo Cai, Mingqi Qiao,
Huiyun Zhang

Hybrid Information Fashion Algorithm Based on Catastrophic Strategy ............................................ 623
Xiaogang Fu, Jinshou Yu
### SESSION 8: WIRELESS COMMUNICATION AND NETWORK

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research on Generation Algorithm of Network Two-Dimensional Code</td>
<td>633</td>
</tr>
<tr>
<td>Optimal Model for Energy-Efficient Clustering in Wireless Sensor Networks Using Global Simulated Annealing Genetic Algorithm</td>
<td>636</td>
</tr>
<tr>
<td>A Low-Power Routing Protocol for Wireless Sensor Networks Based on Data Aggregation</td>
<td>641</td>
</tr>
<tr>
<td>Design of RFID Base-Band Transmission Model and IP Core</td>
<td>645</td>
</tr>
<tr>
<td>Design of Logistic Monitoring Management System Based on RFID Technology</td>
<td>649</td>
</tr>
<tr>
<td>Synchronization Analysis of Complex Dynamical Networks with Coupling Time-Varying Delays</td>
<td>653</td>
</tr>
<tr>
<td>The Design of the Embedded Wireless Vehicles Monitoring Management System Based on GPRS: Evidence from China</td>
<td>657</td>
</tr>
<tr>
<td>Study on Self-Regulation and Performance of Administrators in China Universities with Computer-Aided Network</td>
<td>661</td>
</tr>
<tr>
<td>A Mobile Intelligent Training System for Cockpit</td>
<td>665</td>
</tr>
<tr>
<td>A Sub 1V High-Gain Low-Noise CMOS Downconversion Folded Mixer for 2.4GHz ISM Band Applications</td>
<td>669</td>
</tr>
<tr>
<td>An Extended Context Model in a RFID-Based Context-Aware Service System</td>
<td>673</td>
</tr>
<tr>
<td>An Algorithm to Find the kth Shortest Path in Halin Networks</td>
<td>678</td>
</tr>
</tbody>
</table>

### SESSION 9: CIRCUITS AND SYSTEMS

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study of Pulse Wave Velocity Noninvasive Detecting Instrument Based on Radial Artery and Finger Photoplethysmography Pulse Wave</td>
<td>682</td>
</tr>
<tr>
<td>Study of LAN Embedded NC System Based on ARM and DSP</td>
<td>686</td>
</tr>
<tr>
<td>Robot Path-Planning Based on Triangulation Tracing</td>
<td>690</td>
</tr>
<tr>
<td>An Optimization Algorithm for Computing the Minimal Test Set of Circuits</td>
<td>694</td>
</tr>
</tbody>
</table>
The Analysis of UWB System Throughput in Multipath Environment ................................................................. 698
Di Lin, Xuejun Sha, Xuanli Wu

Developing GIS Software with Component Technic .................................................................................. 703
Shengjun Xue, Liang Zhang

The Design and Debugging of CAN232 Converter with Acceptance Filter Based on ARM Microcontroller ................................................................................................................................. 706
Bing Jiang, Chongwei Zhang

Efficiency Improvements for RBF Based Surface Measurement from 3D Point Cloud ............................. 710
Yihua Ding, Jianhui Zhao, Yuanyuian Zhang, Chengjiang Long, Zhiyong Yuan

Research on Smart Antennas in FDD System ......................................................................................... 714
Xiaoyu Lu, Zufan Zhang

A Kind of RTU Based on Dual-MCU for Monitoring Remote Pharos ...................................................... 718
Yunping Wu, Wangbiao Li, Weida Su, Yu Lu, Conghui Chen, Shenzheng Cai

Image-position Technology of the Digital Circuit Fault Diagnosis Based on Lab Windows/ CVI .................... 721
Wei Su, Ying Liu, Nanping Dong

Optimum Design of Circuit Fault Diagnosis Software Based on Fault Dictionary Method .................. 726
Wei Su, Tongshun Fan, Yuping Wang

The LPT Data Acquisition Card Design of the Front-Wheel Vehicle Positioning Test Equipment Based on the I2C Bus ...................................................................................................................... 730
Changqing Cai

System Design and Experimental Analysis of Digital Pulse Compression Based on FPGA .......................... 734
Xiaojun Wang, Shuhua Wei, Guochen An

A Scalable Heterogeneous Multi-Processor Signal Processing System Based on the RapidIO Interconnect .................................................................................................................................................. 738
Xiongkui Zhang, Meiguo Gao, Guoman Liu

The Design of Radix-4 FFT by FPGA ........................................................................................................ 742
Zhijian Sun, Xuemei Liu, Zhongxing Ji

The Design of SAR Signal Processor’s Data Compress System in FPGA ............................................. 746
Zhijian Sun, Xuemei Liu, Zhongxing Ji

Implementation of the Quadrature Waveform Generator Based on DSP Builder ........................................ 750
Guohai Xiong, Xuejun Zhou, Peirong Ji

Primary Users Detect for Multiple-Antenna Cognitive Radio Based on Blind Source Separation ........ 754
Gang Xu, Yourong Lu, Jun He, Ning Hu

FPGA Implementation of High Speed FFT Algorithm Based on Split-Radix ........................................... 758
Peng Xu, Jin Shu Chen

Equivalence Checking for Intelligent Circuits ......................................................................................... 762
De-Hui Fan, Guang-Sheng Ma

ADP-Based Optimal Adaptive Waveform Selection in Cognitive Radar ................................................... 765
Bin Wang, Jinkuan Wang, Jing Li
### SESSION 10: INDUSTRIAL APPLICATION

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Improved Markov Error Correcting Method in Gray SVM for Power Load Forecasting</td>
<td>Dongxiao Niu, Jia Liang Lv, Xingzhi Zhang</td>
<td>768</td>
</tr>
<tr>
<td>Researching the Service-Quality to Power Customer Based on Ant Colony Algorithm and TOPSIS Method</td>
<td>Dongxiao Niu, Jialiang Lv, Zilong Qiu</td>
<td>772</td>
</tr>
<tr>
<td>An Adaptive Method of Detecting Calibrate Plate in Single View Traffic Accident Distance Measure System</td>
<td>Bai-hong Tan, Lixiao Ren, Yi Zhao</td>
<td>776</td>
</tr>
<tr>
<td>The Combination Forecasting Model for Urban Water Consumption Based on Support Vector Machines</td>
<td>Wei Sun, Xingxing Yan, Yanhong Li</td>
<td>780</td>
</tr>
<tr>
<td>Real Time Dense Smoke Simulation Based Particle System</td>
<td>Neng Wen Zhuo, Yunbo Rao</td>
<td>784</td>
</tr>
<tr>
<td>A New Kind of Hybrid Filter Based on the ICM and the Peak-and-Valley Filter</td>
<td>Xiang-guang Zhang</td>
<td>789</td>
</tr>
<tr>
<td>A New Kind of Super-Resolution Reconstruction Algorithm Based on the ICM and the Bicubic Interpolation</td>
<td>Xiang-guang Zhang</td>
<td>792</td>
</tr>
<tr>
<td>Research and Implementation of a Reconfigurable Low Power E0 Algorithm</td>
<td>Wei Li, Zibin Dai, Longmei Nan</td>
<td>796</td>
</tr>
<tr>
<td>Kalman Filter’s Application in Denoising of Power Spectrum Estimate in AR Process</td>
<td>Liqi Wang, Mingyi Wang, Liyong Zhang, Jianying Guo, Xiuchao Zhu</td>
<td>800</td>
</tr>
<tr>
<td>Research on a Kind of Self-Tuning Observer-Compensator Control Scheme</td>
<td>Jie Chen, Xuejun Hu, Lixin Xu</td>
<td>804</td>
</tr>
<tr>
<td>Research of Over-Heat Steam Temperature Optimizing Control of 300MW Power Plant</td>
<td>Jie Chen, Xuejun Hu, Lixin Xu</td>
<td>807</td>
</tr>
<tr>
<td>A Homogeneous Function Style in the Problem of Sure Resolution of Inhomogeneous Boundary Condition</td>
<td>Ling Zhou, Jie Chen, Lihua Chen, Jiang Ceng</td>
<td>811</td>
</tr>
<tr>
<td>A Method of Model Structural Optimization Based on GMDH</td>
<td>Ling Zhou, Jie Chen, Xuejun Hu</td>
<td>814</td>
</tr>
<tr>
<td>Research on an Emulational System About Estimation of the Underwater Target Azimuth Direction Finding</td>
<td>Wei Liu, Changming Wang, Qinjin Guan</td>
<td>818</td>
</tr>
<tr>
<td>Evaluating Airlines Safety Using Fuzzy Simulation Technique</td>
<td>Zhenwu Zhao</td>
<td>826</td>
</tr>
<tr>
<td>The Software Design of Var Compensator Used in Low Voltage Distribution System</td>
<td>Yanping Gao, Xinlian Zhang, Changhui Deng, Donggang He</td>
<td>830</td>
</tr>
</tbody>
</table>
A Bayesian Learning Model in the Agent-based Bilateral Negotiation Between the Coal Producers and Electric Power Generators
Mingwen Zhang, Zhongfu Tan, Jianhao Zhao, Li Li

Texture Analysis for Shadow Removing and Tracking of Vehicle in Traffic Monitoring System
Di Luo, Xiangnian Huang

SESSION 11: MANAGEMENT SCIENCE AND ENGINEERING

The Design of Recommending Diagnosis in the Management System of Physical Health Examination
Junwei Li, Qing Yang, Yuying Huang

The Concept and Model of Adaptive and Flexible Enterprise Workflow
Huang Zong Xiang

The Research on Optimal Contract Design in the Quality Management of Reverse Supply Chain under Asymmetric Information
Shen Liang

Modes of Fluctuation in Aluminum Futures Prices
Ye Wang, Li Wang, Jinzi Li, Yin Cao

Empirical Analysis on the Contribution of the Industrial Structure to China's Economic Growth
Fangyuan Lu, Zhixing Cao

Research on Volatility of the Return by Stages in China Stock Market
Fangyuan Lu, Hui Kang

Stable Analysis on Supply Chain System Based on Pulse Process Theory
Liu Xun

ISP Selection in E-Business Based on Fuzzy Extension Judgment Theory
Jin Wang

Appraisal on the Competitiveness of Commercial Bank of China Based on Factor Analysis
Bin Xia, Bin Pan, Hui Xia

Component Configuration Test Based on Mutation
Bin Xia, Bin Pan

Option Rights Program Innovation in One State-Owned Enterprise in China
Chen Qian, Yunhong Hao

Customer Segmentation Model Based on Retail Consumer Behavior Analysis
Minghua Han

Market Demand Risk Analysis on the Decision of Enterprises' Optimum Stock
Songtao Wu, Feng Dai, Ruohing Ma

Balanced Job Bounds Calculation for Approximating the E-Commerce Development Platform for 3-Tiered Web Applications: Performance Factors
Lun Li, Minghua Jiang, Shuqing Ma

Researching on Grey Incidence Between Logistics Industry and Economic Development
Yanfeng Chu, Sifeng Liu

An Analysis of C2C E-Commerce Taxation in China
Min Xu, Luming Yang
The Application of Bar Code Forgery-Proof Technology in the Product Sales
Ting Chen

Research on the Credit Risk Evaluation and Forecast of Housing Mortgage Loans
Fei Wang, Zhigang Song

Analysis of EM Channel of Producing Well
Jintao Yu, Mingli Ding, Tingwei Liang

Research of the Supply Chain Inventory Manager Dynamic Simulation Training Based on HLA
Xirui Gu, Jianshe Song, Jun Guo, Meng Yang

Enterprise Application Integration: An Overview
Yan Du, Wuliang Peng, Li Zhou

SESSION 12: OTHER RELATED TOPICS

What Drives a Successful E-Learning? A Comparative Research between China Mainland and Taiwan
Yong-gui Shi, Pu Liu, Chunping Huang, Nai Cai

Error Analysis and Improvement Design of Auto-digital Phasometer (II)
Chunyang Wu, Hongguang Ma, Xiaohei Zhu, Haitao Han

Returns to College Education in China
Min Fan, Zhujun Fan, Xiaojian Yu

Application of Quotient Space Theory in Cases Organization
Haifang Li, Hui Jin, Dahu Zhang

The Self-Adaptive Design Model of Architecture-Centric Granularity Service Cluster
Xiaona Xia, Baoxiang Cao

Altitude and Speed Sensor with Digital Compensation Technique
Hongwei Jiang, Zhaohui Yuan, Xiaobing Guo

The Requirements Change Analysis for Different Level Users
Jiayi Zhu, Yunjuan Liang, Yuesheng Gu

Parameter Estimation of the AR Model Based on Interval Analysis
Wei-feng Yang, Fang-ling Zeng

DA Simulator Design of Inertial Platform in Self-calibration
Wei-feng Meng, Ru Wang

Stereo Matching for Slanted Plane
Zhengang Zhai, Yao Lu, Hong Zhao, Yaozu An

Research and Application on .NET and COM Integrated Technology
Xuelei Wu, Chen Jia, BiLan Rong

Differential Correction Applications to the Estimation of Non-Cooperate Targets Motion
Zhijun Gu, Hua Zhai, Lei Chen

BLOB Driven Multimedia Management Design and Implementation
Hao Yan, Xing-chun Diao, Ting Wang

An Extended Process Model Supporting Software Evolution
Na Zhao, Fei Dai, Yong Yu, Tong Li

Formal Interaction Specification in a Reflective Information Model
Peng Ye, Shi Ying, Wen-Jie Yuan, Jun-Feng Yao, Ju-Bo Luo, Ming Hu
Two Edge-Disjoint Hamiltonian Paths in Crossed Cubes ........................................................................... 991
Deyi Ma, Hongmei Liu

Iterative Learning Identification Method for the Train Motion Model ................................................. 995
Yi Wang, Chi Qi

Analysis and Research of the Transient Composite Disturbance Signal of Power System
Based on HHT ........................................................................................................................................ 999
Cunxiang Yang, Shenghuai Dong, Zhanying Tong, Yuhao Wan

Synthesis of Analog Filter Based on Genetic Program and Network Topology
Transformation ............................................................................................................................................... 1003
Shaobo Li, Jianning Qiang, Juanjuan Wang, Gao Jie

The Research of the Variable Weight Parameter in the Synthetic Evaluation of
Information System Risk .......................................................................................................................... 1007
Jingmin Zhang, Zhijun Yin, Liwen Chen

Research of SVPWM Variable Frequency Speed Regulation System Based on
TMS320LF2407A .................................................................................................................................. 1011
Hongxia Wu, Xuezi Hu

Research on Voltage-Fed SVPWM Rectifier Based on TMS320F2812 .................................................. 1015
Xuezi Hu

The Design and Implementation of Vehicle Tail Gas Detection System Based on Virtual
Instrument ............................................................................................................................................... 1019
Wenlian Li, Yang Li, Fang Xiao

Knowledge-Based Framework for Real-Time Risk Assessment of Information Security
Inspired by Danger Model ......................................................................................................................... 1023
Zhi-Hua Hu, Yong-Sheng Ding, Jing-Wen Huang

Cognitive Immune System-Based Co-Evolutionary Information Retrieval Model ................................ 1027
Zhi-Hua Hu, Yong-Sheng Ding, Xing-Jia Lu

Research on Business Intelligence Pattern Based on the BIaaS ................................................................ 1031
Ting Fu

Application of Rough Sets in Evaluating System Safety Behavior ............................................................ 1035
Zhiming Qu

SESSION 13: INNOVATIVE COMPUTNG, INFORMATION AND CONTROL

Energy Management for Microprocessor Systems: Challenges and Existing Solutions ......................... 1039
Congfeng Jiang, Xianghua Xu, Jian Wan, Xindong You

Chaos Optimizing BP-NNG Speed Recognition in DTC System ............................................................ 1045
Chengzhi Cao, Fengkun Li, Kun Zhang, Hongbing Zhang, Hongli San

Fast Macroblock Selection Algorithm for Multiview Video Coding Based on Mode
Analyses .................................................................................................................................................... 1049
Zongju Peng, Mei Yu, Gangyi Jiang, Weiyue Liu, Feng Shao

Magnetic Flux Leakage Detection Technology for Well Casing on Neural Network ................................. 1053
Jinzhong Chen, Lin Li, Jinan Shi

Research and Realization of Improved Pattern Matching in License Plate Recognition .......................... 1057
Ping Wang, Wei Zhang

The Modeling Analysis of Manufacturing Execution System Based Upon Colored Petri
Nets ......................................................................................................................................................... 1061
Tao Liang, Qing Li, Jiwei Hua
Evolution Process Component Composition Based on Process Architecture ...........................................1065
   Fei Dai, Tong Li, Na Zhao, Yong Yu, Bi Huang

The Optimization and Improvement of the Apriori Algorithm .............................................................1069
   Yiwu Xie, Yutong Li, Chunli Wang, Mingyu Lu

Modeling and Identification of a Hovering Subminiature Rotorcraft..................................................1072
   Zhengbang Gong, Wei Feng, Tongyue Gao, Jun Luo

Approaches to Language Identification Using Gaussian Mixture Model and Linear Discriminant Analysis .................................................................1077
   Xiuhua Zeng, Jian Yang, Dan Xu

A Framework of Access Performance Optimization under Concurrent Access Environment ..........................................................1081
   Hao Chen, Bei Ji Zou, Fei Wu, Naizheng Bian

Research on Low Voltage Ride through of Doubly-Fed Induction Generator Wind Power System ..........................................................1085
   Yongfeng Ren, Hongyan Xu, Jianlin Li, Shuju Hu

A Software Component Classification Based on Facet and Neural Network .........................................1089
   Jun-Tao Liang, Xiao-Yuan Jiang

Optimal Design Study of Hilbert Convertor Based on Neural-Network Algorithm ................................1092
   Guimei Li, Zhezhao Zeng

Author Index