Table of Contents

Business Intelligence and Applications

Study on Optimization Technique and Simulation of Supply Chain Based on the Returnable Pattern ........................................... 1
   Wenqing Sun

Research on Latecomer Strategy of Internet Business Model Innovation ................................................................. 7
   Jiao Gao, Zhaoyang Sun, Xiaofei Zhang, and Jinxing Liu

Construction and Application of Real-time Monitoring System of Landslide .............................................................. 15
   Hongde WANG, Youlong GAO, Qilang LE, and Shangtao PAN

Curvatures Estimation on Surface Reconstructed With Conformal Alpha Shape ......................................................... 24
   Lin Li and SuJuan Rui

A Study of Product Configuration Management Model and Evaluation for Aviation Subcontract Production ......................... 32
   Xilan Feng, Zhiqiang Jiang, Xianzhang Feng, and Jinfa Shi

Study on Service Scheduling Based on PSO and Market ........................................... 40
   Wang Gang and Fengxia Yin

Research of Audit Project Schedule Management Based on Critical Chain ................................................................. 49
   Yi Yang

Industry Innovation Cluster Evolution Based on Knowledge Spillover Effects ................................................................. 57
   Wen Yu, Jing Gao, and Shuping Cheng

Product Positioning Research of P & G Camay ........................................... 65
   Li Ming and Tang Ke

Computer Engineering and Applications

3-Kn-Residual Graphs ........................................... 72
   Jiangdong Liao and Ming Luo

DBS Analysis on Functor-argument Structure of Ancient Chinese .................. 78
   Qiuxiang Feng, Roland Hausser, and Rongpei Wang

xii
Research and Simulation on Immunity to Noise of Duffing Oscillator  
Su Liyun, Li Jiaojun, Liu Ruihua, and Liu Renbin  ..........  86

Experiment Analysis on the Bubble Sort Algorithm and Its Improved Algorithms  
Ping Yu, You Yang, and Yan Gan  ......................................................  95

Methods of Obtaining Miss distance Based on Image Measurement Technology  
Kang LI, Shaoqing YANG, and Songtao LIU  .................................  103

Semi-supervised Multi-class Classification Algorithm Based on Local Learning  
Lv Jia  ...........................................................................................................  111

Fuzzy Support Vector Machine based on the Posterior Probability Weighting Membership  
Yan Wei and Xiao Wu  ...............................................................  119

Support Vector Machine based on Hybrid Kernel Function  
Xia Wu, Wanmei Tang, and Xiao Wu  ....................................................  127

An Incremental Update Algorithm for Sequential Patterns Mining  
Zaiping Tao  .........................................................................................  134

Study of Three-Dimensional Virtual Simulation System Based on Aerial Photography Image Information  
Zhang Yi and Mu Sihui  ...........................................................................  141

3D Structural Geological Modeling based on Morphing Field  
Meng Xianhai, Li Jigang, and Yang Qin  ................................................  149

Classification of Interactive Patterns between Underlying Programs and Aspects  
GU Sishan, CAI Shubin, and LI Shixian  ..................................................  158

Communication Technology and Applications

Research on Multicast Routing Based On a New Chaos Genetic Algorithm  
Liu Ze-hua, Zou En, and Fang Shi-yong  ..................................................  167

Analysis for Competitive Game of Members of Distribution Channel Based on Single Product  
Wenqing Sun  .........................................................................................  174

Research on Warning Methods for the Intrusion of Airport Enclosure Based on Dual M-Z Fiber Optic System  
Jiang Lihui and Yang Ruoyu  ................................................................  180
A New Medium Access Control Protocol Application on the Hidden
Node Interference .............................................................. 188
Guobin Chen, Mei Rong, and Guangquan Zhang

Simulation Research of the Influence of Random Amplitude Disturbance
on MVDR Beam Former .................................................. 196
Yunfeng He, Gaoshun Song, Changming Wang, and Junsheng Jiao

Usable Speech Reconstruction Based on Wavelet Transform .......... 204
YueFang LI

Architecture of the Virtual District Platform in Broadcast Network
Foundation Scene ............................................................ 212
ZHANG Li, SHEN Qi, and SHI Zhen-lian

Research on Key Management Scheme for WSN Based on ECC ....... 219
Ming Lu

Study on Education Resource Discovery based on Mobile Agent in Grid
Environment ................................................................. 227
Li Mingyong, Ma Yan, Liang Yuanyuan, and Duan Wenshu

Design and Simulation of Routing Algorithm for Mobile Agents in
WSNs based on Genetic Algorithm .................................... 235
Zhenqiu Liang

A Fast Peer to Peer Network Routing Model ............................ 243
Aiming HUANG and Maoling PEN

Electrical Engineering and Applications

Reliability Modeling and Analysis of SCI Rings in Avionics System ..... 251
Xu Hongzhe, Huang Jun, and Zhou Yaoming

Global Stability for Stochastic Interval Neural Networks with Mixed
Time Delays .................................................................... 259
Junxiang Lu, Hong Xue, and Shanshan Wang

Optimization of Phase-Locked Loop Circuit Parameters Based On
Genetic Algorithm ............................................................. 267
Wang Dazhi, Chen Renyi, Li Jun, Ge Shuai, and Wang Xuming

Application Research on Intelligent Control Strategy in Mine Sewage
Processing ....................................................................... 275
Wei Huang, Jianchao Bi, and Chi Zhang

A New Embedded-based Relay Protection System of Transformer
Substation ........................................................................ 283
Lichao Huang and Jianchao Bi
Information Computing and Applications

An Improved Adaptive Particle Swarm Optimization Algorithm .......................... 331
Taibai Li and Wanmei Tang

Spiral MRI Reconstruction Based on Table-Lookup Gridding .......................... 339
Yanni Peng and Qing Huo Liu

A least Squares Support Vector Machine Sparseness Algorithm ........................ 346
Yang Li and Wanmei Tang

Efficient Dynamic Management of Distributed Metadata ............................... 354
Xue Wei and Zhu Ming

Automatic K-means Clustering Algorithm for Outlier Detection ..................... 363
Dajiang Lei, Qingsheng Zhu, Jun Chen, Hai Lin, and Peng Yang

Improved K-means Clustering Center Selecting Algorithm ............................ 373
Min Huang, Lei Yu, and Ying Chen

Implementation of an Improved Real-time Image Contrast Enhancement Technique Based on FPGA .......................................................... 380
Jieling Tang, Xiaqing Du, and Xiangkun Dong

Multi-objective Memetic Algorithm for Monitoring Resources Allocation in Service Composition ............................................................. 387
Pan He, Junhao Wen, Haijun Ren, Kaigui Wu, and Peng Li

Applied Study of Fuzzy Clustering Algorithm in Invasion Detection ............... 396
Lina Fei, Jijun Zhang, and Qingshui Li
Traveling Salesman Problems on a Cuboid using Discrete Particle Swarm Optimization .............................................. 404
Shoubao Su, Xibin Cao, and Xukun Zuo

Quantum Genetic Algorithm Using a Mixed Update Strategy ........ 412
Guisheng Yin, Jia Li, Hongbin Dong, and Jijie Wei

A Trust Model under Grid Computing Environment ............... 420
WANG Li-juan, ZHANG Guang-hui, and CHEN Shan

Information Education and Applications

Darboux Transformation and Explicit Solutions of a Couple Lattice Equation including the Discrete Nonlinear Schrödinger Equation ...... 428
Wen Xiaoyong

Effects of Scaffolding on Students’ Self-Regulation in Hypermedia English Learning .......................................................... 436
Haiyan Li

The Design and Implementation of Distance Teaching System based on Linux .............................................................. 443
Yuanyuan Liang, Yan Ma, and Wenshu Duan

The Design and Implementation of Engineering Training Center Website in Colleges and Universities ................................ 450
Shi Shuo, Yan Gang, Kang Junguang, Zhou Shuntong, and Ai Yueqiao

Intelligent System and Applications

Research on the Construction and Improvement to the Emergency Response Mechanism in Public Emergencies ..................... 458
Huang Hongchun and Song Yinghua

The Research on Finger Vein Image Preprocessing Based on Mathematical Morphology ................................................. 465
Liu Caixia

Formation Conditions for Transported Charges of Multineedle-to-cylinder Dielectric Barrier Discharge Based on the Orthogonal Design and Lissajous Figures ........................................... 472
Xiaojing WANG and Caixin SUN

Study of Interoperability Testing between Operating Systems Based on MDT and TTCN-3 .................................................. 482
Yu Bin, Tian Yang, and Yan Haihua
Research on the Incentive Compensation of Agent Based on Principal-agent Theory ........................................... 491
   Bingnan Liu and Yu Li

Towards a New Method for Interpolating of Triangular Fuzzy Numbers  . 498
   Yongchao Hou, Yun Qian, and Haiquan Qiu

Research on Application of Knowledge Management in Public Sectors ... 506
   Puyun Bi and Wei Jiang

Approximation of Common Fixed Points for Families of Mappings ...... 514
   Zhiming Ching

Design and Implement of BCI System based on Android Platform ...... 522
   Jinghai Yin, Jianfeng Hu, and Zhengdong Mu

A New Method of Version Management for Test Case ..................... 530
   CAI Jian-ping, LU Wen-liang, and XU Wen-yong

Design and Research of Earthquake Auxiliary Rescue Vehicle ........... 538
   Qingjun Wang and Chengliang Guo

High-temperature FBG Sensor and Interrogation System for Aluminum Smelter Cell ......................................................... 545
   Meng Ling, Jiang Mingshun, Sui Qingmei, and Jia Lei

Sensitivity-tunable FBG Interrogation System Utilizing a Mechanically induced Long Period Fiber Grating ................................. 552
   Jiang Mingshun, Meng Ling, Sui Qingmei, and Jia Lei

Service Engineering and Applications

Identification of Deep Web Entries by Using Neural Network ............ 560
   Chunming Wu, Xianchun Zou, and Baohua Qiang

The Research of Outdoor Security Management System Based on Nhibernate ................................................................. 566
   Yan Ye and Chuanbo Zhou

Semantic Based Spreading Activation for S-SLN Service Automatic Recommendation .............................................................. 574
   Anping Zhao and Yu Yu

Network Video Surveillance System based on FPGA ....................... 582
   Bai-shen Wei, Ya-nan Luo, and Ming Tang

The Model Construction of Grid Environment for Community Cluster .. 590
   Yan Ma, Mingyong Li, Jinghua Tian, Wenshu Duan, and Wei Gong
The Parameter Auto-tuning Method Based on Self-learning Algorithm  .  597
  Chaohua Ao and Jianchao Bi

Intelligence Based Fusion Control Strategy for City Rubbish
Incineration System Based on DCS  .  605
  Hui Huang and Jianchao Bi

Research of Development Workflow and Comparison of Development
Trend Based on Open Source Ecommerce Platform  .  613
  Xinshi Chen, Tiewei Fu, and Xiaozhe Fan

Author Index  .  621
### Table of Contents

#### Business Intelligence and Applications

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Chain Operational Risk Management Based on Multi-agent</td>
<td>1</td>
</tr>
<tr>
<td><em>Zhang Daohai, Zhang Yanan, and Wang Wei</em></td>
<td></td>
</tr>
<tr>
<td>Research on the correlation of R &amp; D Human Resources with the</td>
<td>7</td>
</tr>
<tr>
<td>growth of Regional Economy</td>
<td></td>
</tr>
<tr>
<td><em>Lei Xiao and Han Botang</em></td>
<td></td>
</tr>
<tr>
<td>Linear Transfer Payment Contract of Closed-Loop Supply Chain with</td>
<td>14</td>
</tr>
<tr>
<td>Multi Retailers</td>
<td></td>
</tr>
<tr>
<td><em>Wen-jun GAO and Ju-hong CHEN</em></td>
<td></td>
</tr>
<tr>
<td>Economic Growth Model of Endogenous Institutions: Construction and</td>
<td>21</td>
</tr>
<tr>
<td>Deduction</td>
<td></td>
</tr>
<tr>
<td><em>Lin Yi and Chen Xiaoman</em></td>
<td></td>
</tr>
<tr>
<td>Summary of Domestic Tax Incentives Based on independent Innovation</td>
<td>27</td>
</tr>
<tr>
<td><em>Yu Zhang, Wei Dong Meng, and Jing Shi</em></td>
<td></td>
</tr>
<tr>
<td>Study on The Control of Line Balancing for Infant’s Costume Production</td>
<td>33</td>
</tr>
<tr>
<td><em>Weixin Yao</em></td>
<td></td>
</tr>
<tr>
<td>Research on Organizational Innovation Mode in Coal Logistics</td>
<td>39</td>
</tr>
<tr>
<td><em>Yang Yang, Wang Li-jie, Wang Wen-sheng, and Wang Hao-Yu</em></td>
<td></td>
</tr>
<tr>
<td>Research of Customer Relationship Management Solutions Based on</td>
<td>47</td>
</tr>
<tr>
<td>Data Mining</td>
<td></td>
</tr>
<tr>
<td><em>FENG Feng</em></td>
<td></td>
</tr>
<tr>
<td>Research on the Construction of Regional Property Rights Exchange</td>
<td>53</td>
</tr>
<tr>
<td><em>Yu-qiang Zhai</em></td>
<td></td>
</tr>
</tbody>
</table>

#### Computer Engineering and Applications

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Context-based Method for Petroleum Exploration Domain Ontology</td>
<td>60</td>
</tr>
<tr>
<td><em>Jike Ge, Zushu Li, and Taifu Li</em></td>
<td></td>
</tr>
<tr>
<td>The Installation and Runtime Dependency of Application in Linux</td>
<td>68</td>
</tr>
<tr>
<td><em>Li Li, Lan Yuqing, Zhou Wenbin, and Zhang Guanxiong</em></td>
<td></td>
</tr>
</tbody>
</table>
A Spectral Clustering-Based Dataset Structure Analysis and Outlier Detection Progress ........................................ 76
Lin Hai and Zhu Qingsheng

Probabilistic Model Based Image Retrieval Using Hypothesis Testing ................................................................. 86
Bo Li and Guoping Liu

Feature Extraction of Radar Emitter Signal Based on Empirical Mode Decomposition ........................................... 93
ZHUBin and JIN Wei-dong

Evaluation of Talent Training Ecological Environment Sustainable Development Based on Relational Database ........ 101
Hu Lin Rong

From Textual Use Cases to Message Sequence Charts ................................................................. 109
Mingyue Jiang and Zuohua Ding

A Quick-look Algorithm for Squint Mode SAR ...................................................................................... 117
Fang Li-li and Wang Xue-tian

Visualization System of Massive 2D Seismic Data .................................................................................. 125
Wen-qin Li and Da-qing Wang

The Study on Recommended Algorithm Based on User Behavior Interest Modeling ............................................. 133
Daiyun Weng and Li Yang

Improved Double Memberships of Fuzzy Support Vector Machine .......................................................... 141
Xiao Wu, Yan Wei, and Xia Wu

Communication Technology and Applications

Research on Cluster-Based Routing Algorithm for Improved Wireless Sensor ............................................................. 149
Li Yang and DaiYun Weng

Nonlinear System Identification Based on Adaptive Cloud C-means Clustering Algorithm ...................................... 159
Junlin Chang, Wei Zhang, and Xiaoping Ma

Design of Short Message Query System for Time Service Data Based on GSM .................................................... 167
Cuimin Zhao, Longxia Xu, and Xiaohui Li

Indoor Environmental Real-Time Monitoring System Based on 6LoWPAN Network .............................................. 175
Henan An, Bing Hu, and Hui Fan
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research of Complex Network Dynamics Evolution</td>
<td>183</td>
</tr>
<tr>
<td>Fangfeng Zhang, Jun Liu, and Chunling Zuo</td>
<td></td>
</tr>
<tr>
<td>Design of High Precision Positioning System Based on ZigBee</td>
<td>193</td>
</tr>
<tr>
<td>Wu Chengdong, Han Quancheng, Zhang Yunzhou, and Cheng Long</td>
<td></td>
</tr>
<tr>
<td>Snort-based Campus Network Security Intrusion Detection System</td>
<td>201</td>
</tr>
<tr>
<td>Li Yang and Daiyun Weng</td>
<td></td>
</tr>
<tr>
<td>Application and research in DSSS based on Chaotic Sequence</td>
<td>209</td>
</tr>
<tr>
<td>Wei Wang, Pingxian Yang, and Peng Guo</td>
<td></td>
</tr>
<tr>
<td>Research of Jamming Signal’s Feature Extraction of LFM Pulse-compression Radar</td>
<td>216</td>
</tr>
<tr>
<td>Yuqing Huang, Zaiying Yao, and Fanrong Shi</td>
<td></td>
</tr>
<tr>
<td>The Influence of the Carrier Frequency Inaccuracy and Multipath</td>
<td>224</td>
</tr>
<tr>
<td>Effects on Radio Interferometric Positioning System</td>
<td></td>
</tr>
<tr>
<td>Xu Guizhou, Zhang Lei, Wang Yuanfei, and Hu Yi-Hua</td>
<td></td>
</tr>
<tr>
<td>Research on The Denoising Algorithm of Speech Signal</td>
<td>232</td>
</tr>
<tr>
<td>Liu Caixia and Cheng Jinyong</td>
<td></td>
</tr>
</tbody>
</table>

**Electrical Engineering and Applications**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design of Control Software in IC forming &amp; Separation System</td>
<td>239</td>
</tr>
<tr>
<td>SONG Yue, YU Chi-Ye, LI Shan-Feng, HU Bing-Wu, and LI Jun</td>
<td></td>
</tr>
<tr>
<td>Optimal PMU Placement of the Power Systems Based on Incidence</td>
<td>246</td>
</tr>
<tr>
<td>Matrix for Direct Solution of Power Flow</td>
<td></td>
</tr>
<tr>
<td>J. L. Wang and L. Xia</td>
<td></td>
</tr>
<tr>
<td>Solving Solitary Wave Solutions of Whitham-Broer-Kaup Equation</td>
<td>254</td>
</tr>
<tr>
<td>with Homotopy Analysis Method</td>
<td></td>
</tr>
<tr>
<td>Xiuqiong Chen and Xiaoyang Zhou</td>
<td></td>
</tr>
<tr>
<td>Management and Maintenance of Video Surveillance and Control System</td>
<td>261</td>
</tr>
<tr>
<td>Lianqin Jia</td>
<td></td>
</tr>
<tr>
<td>Fault Diagnosis of Diesel Engine based on BP Neural Network</td>
<td>267</td>
</tr>
<tr>
<td>Kexin Yuan and Xuebing Guo</td>
<td></td>
</tr>
<tr>
<td>Robotic Dynamical Systems Design using Combined Adaptive Fuzzy</td>
<td>275</td>
</tr>
<tr>
<td>Method</td>
<td></td>
</tr>
<tr>
<td>Wen-da Zheng, Gang Liu, Jie Yang, Hou Hong-qing, and Wang Ming-hao</td>
<td></td>
</tr>
<tr>
<td>Essence of Information and Mathematical Model of Information</td>
<td>281</td>
</tr>
<tr>
<td>Measurement</td>
<td></td>
</tr>
<tr>
<td>Liu Liefeng, Zhou Yahong, and Chen Ling</td>
<td></td>
</tr>
</tbody>
</table>
Numerical Methods for Ordinary Differential Equations with Two Parameters ...................................................... 287
    Jiabo Tan

Summation of Reciprocals and Alternating Related to - \( l \)th Power of Generalized Fibonacci Sequences ................................... 293
    Gaowen Xi and Shuyu Wang

Comparison of Digital Logic Circuits In Sub-threshold Region ........... 301
    Guoyan Ren

Information Computing and Applications

Improved Multi-Scale Retinex Algorithm for Medical Image Enhancement ................................................................. 307
    Qingyuan Meng, Deqian Bian, Mengfan Guo, Fengmei Lu, and Dongpu Liu

The Application of Cloud Computing in Universities’ Education Information Resources Management ............................................. 315
    Tianping Dong, Yan Ma, and Lunpeng Liu

A Particle Swarm Optimization for Data Placement Strategy in Cloud Computing ............................................................. 323
    Lizheng Guo, Shuguang Zhao, Shigen Shen, and Changyuan Jiang

On Diophantine Equation \( X(X+1)(X+2)(X+3) = 15Y(Y+1)(Y+2)(Y+3) \) ................................ 331
    Duan Huiming and Yu Jimin

Method of License Plate Location based on license plate texture and HSV color space ......................................................... 339
    Qing YAN

Some new bounds for the eigenvalues of Hadamard product of two irreducible M-matrices ........................................... 348
    Jiaozhen Zhao

A Research into the Mechanism of Coupling Interaction Knowledge Innovation of University-industry Collaboration .................. 355
    LI Chenglong and LIU Zhiyue

Image Denoising Method Applying PCA based on Integer Wavelet Transform ................................................................. 361
    Jing Peng

Practice Research on Computer-aiding Chinese Dialects Field Sampling 367
    Lan Jiang and Dalu Yin
Study on Facial Character Recognition Under Complex Illumination 375
  Xiaoyi Yang and Jianwei Li

Unsupervised Intrusion Feature Selection based on Genetic Algorithm
and FCM 382
  WU Jian

Research of Network Planning and Optimization Model 390
  Lihong Li, Shaohong Yan, Hong Wang, and Xiaodan Ma

Information Education and Applications

The Professional Education of English-teaching Majors and the
Management of Students Workshop 397
  Yuhua Li

Some Factors Affecting Nursing Curriculum Implementation 403
  Haihong Zhang and Wenzue Zhang

Teaching Quality Evaluation Based on Covariance Analysis Method 409
  JIANG Qing-qiong

Magnanimous Educational Resources Sharing Model based on MAS 415
  Zhong Guoxiang

Evaluation Research of Cultural soft Power Among Newly-promoted
Colleges and Universities 423
  Zhao Xiaojun

Intelligent System and Applications

Bionic Design and Simulation of Flexible Pectoral Fin of Labriform Fish 429
  Qiang Liu

A Modified Alternating Direction Method for Positive Definite Systems 437
  Qian Xiang, Songping Wu

Modeling Recommender Systems from Preference and Set-oriented
Perspectives 445
  Jia-jin Huang

Association of Attack Factors Based on Fuzzy Information Fusion 451
  Ning Sun, Xiangdong Fu, Shengcai Zhang, and Jizong Jiao

A Kind of Botnet Detection Method Based on State Transition of Zombie 459
  Li Hua JIANG and Wan Gang WANG

On System Changes, Plight and Institutional Innovation of Rural Land 467
  Liu Weibai and Li Zhong
A New Equivalent Condition of the Reverse Order Law for Reflexive Generalized Inverses of Two Matrix Products ........................... 475
Zhiping Xiong and Yingying Qin

Design and Implementation of Multi-soundcard Acquisition and Playback System .................................................. 481
Li Jie, Miao Changyun, Wu Zhigang, and Guo Cuijuan

The research on the Technology of Sleep Wake-up Mode based on S3C6410 and Windows CE6.0 ................................. 488
Lihua Song, Yang Jian, and Ke Xiao

Application of Hybrid Genetic Algorithm in Aerial Defense Target Assignment ........................................................... 495
Zhao Jian-jun, Wang Yi, and Yao Yue-ting

Classification Algorithm based on Improved ID3 in Bank Loan Application ................................................................. 501
Yi He, Jian-chao Han, and Shao-hua Zeng

Exploring the Construction of Engineering Project Management Information ............................................................... 508
Yuan Hailin and Zhang Shengnan

The Application of Queuing Theory in Colleague Student’s Registration ................................................................. 514
Liu Xiaojun and Chen Beibei

Service Engineering and Applications

Establishment of WMO Information System in Beijing .................. 520
Wang Fudi, Yao Yan, Li Xiang, Jiang Lipeng, and Zhu Ting

Building the Relationship between Web Entities Incrementally .......... 528
Ding Yanhui and Wang Hongguo

Application of Fuzzy Optimization Theory to Ancient Ceramics Classification ............................................................... 537
Wenzhi Yu

Design and Implementation on Teaching Information Management System of Adult Education Based on Service-oriented Architecture ...... 544
Li GuoLin, Xue Zhimei, Zhu Yulian, Li Qiang, and Liu Jiping

The Design of Monitoring System for City Intelligent Street Lamp Based on GPRS-Internet Technology .......................... 553
Ke Chen, Lijun Zhang, Sansi Li, and Wende Ke

Towards Description Logics based Cloud Service for UML Verification ... 561
Ren Li, Dan Yang, Haibo Hu, and Jianhua Luo
An Algorithm of Training SVR Based on its Approximate Hyper-plane  . .  569
  ZENG Shaohua, Hanshu Qin, Yan Wei, and He He

Design and Implementation of Barcode Management Information System  . . . . .  577
  Daiyun Weng and Li Yang

Author Index  ................................................  585
# Table of Contents

## Business Intelligence and Applications

- **E-commerce Information Processing Based on Dynamic Fuzzy Logic**
  Qiong HONG and Hao ZHANG
  1

- **Method to Recognize the Key Factors Impact the Customer Equity Value**
  Zhong Xie and Bin Dan
  7

- **On the Tourism Competitiveness of Scenic Spots Based on Fuzzy Comprehensive Evaluation Method**
  Zhang Yanhong and Lu Lijun
  13

- **Simulating Analysis of Complex Supply Chain Networks Invulnerability**
  CHEN Hui-huang
  19

- **Global Existence and Blow-up for the Quasi-linear Parabolic Equation with Nonlinear Boundary Condition**
  Botao Chen and Yongsheng Mi
  26

- **An Energy-saving Industry Chain of Computer Games in Trend of Mobilization and Sport-virtualization**
  Huizi Wangchen and Huixin Tan
  31

- **A Study of the influencing factors of Consumption Per Capita in Jiangxi Province Based on Multiple Regression Analysis**
  ZHANG Faming and YE Zhaoqing
  38

- **Research on the Customer Expectation Goal of BTOT Model**
  Chen Daqiang and Huang Hua
  44

## Computer Engineering and Applications

- **Design and Implementation of Software Testing Cases Management System Based on J2EE**
  Jianjun LU, Ning SU, and Anxin ZHAO
  58

- **Quaternin in DirectX**
  Tian biao Yang
  65
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trapezoidal Variational Integration of Hamiltonian Systems</td>
<td>72</td>
</tr>
<tr>
<td>Jiabo Tan</td>
<td></td>
</tr>
<tr>
<td>Application on Mining Association Rules with Attributes Reduction</td>
<td>78</td>
</tr>
<tr>
<td>Based on Fractal Dimension</td>
<td></td>
</tr>
<tr>
<td>Qixin Chen</td>
<td></td>
</tr>
<tr>
<td>Study of ADOX Application in SQL Server Skill Assessment</td>
<td>87</td>
</tr>
<tr>
<td>Chen Yaofei</td>
<td></td>
</tr>
<tr>
<td>Cost Estimation of Equipment Software in Earlier Period Based on</td>
<td>94</td>
</tr>
<tr>
<td>Wideband Delphi and Function Resolve</td>
<td></td>
</tr>
<tr>
<td>Zhang Minfang, Liu Woye, and Chen Jiansi</td>
<td></td>
</tr>
<tr>
<td>Performance Evaluation of Embedded Computer through Combining</td>
<td>100</td>
</tr>
<tr>
<td>Grey Trend Relational Degree with G1 Method</td>
<td></td>
</tr>
<tr>
<td>Zhou Yan-nian, Zhu Yi-an</td>
<td></td>
</tr>
<tr>
<td>Tentative Discussion on Network Security based on Data Encryption</td>
<td>106</td>
</tr>
<tr>
<td>Jinhua Wang and Xiaodong Liu</td>
<td></td>
</tr>
<tr>
<td>Exploration of Write-Ahead Logging</td>
<td>112</td>
</tr>
<tr>
<td>Haiyu Li</td>
<td></td>
</tr>
<tr>
<td>The Discussion and Application of Computer Boot Technology</td>
<td>120</td>
</tr>
<tr>
<td>Lin Chen and Ming Li</td>
<td></td>
</tr>
<tr>
<td>A Method Of Image Enhancement Base On Least Squares Support</td>
<td>127</td>
</tr>
<tr>
<td>Vector Machine</td>
<td></td>
</tr>
<tr>
<td>Hui Wan</td>
<td></td>
</tr>
<tr>
<td>Communication Technology and Applications</td>
<td></td>
</tr>
<tr>
<td>Transponder Landing System Antenna Array Design</td>
<td>134</td>
</tr>
<tr>
<td>Xiubin ZHAO, Yihuan YANG, and Jian-an ZHANG</td>
<td></td>
</tr>
<tr>
<td>New Delay-dependent Synchronization Criterion for Complex Dynamical</td>
<td>141</td>
</tr>
<tr>
<td>Networks with Coupling Delay</td>
<td></td>
</tr>
<tr>
<td>Degang Yang and Chunyan Hu</td>
<td></td>
</tr>
<tr>
<td>Communication Test Based on MFG for Agent System</td>
<td>149</td>
</tr>
<tr>
<td>Junyi Li and Hongbo Yan</td>
<td></td>
</tr>
<tr>
<td>Research of Rights Management Protocol for Mobile Devices</td>
<td>156</td>
</tr>
<tr>
<td>Zeng Rui and Wang Ying-yan</td>
<td></td>
</tr>
<tr>
<td>Application Analysis on EPON Technology Applied in Communication</td>
<td>163</td>
</tr>
<tr>
<td>System of Smart Substation</td>
<td></td>
</tr>
<tr>
<td>WEI Yong, XU Wei-guo, ZHANG Yong-li, and CHEN Zhi-hong</td>
<td></td>
</tr>
</tbody>
</table>
Design and Implementation for MY-FUN Mobile Client Software ........ 170
ZiLi Chen, YanXia Wang, and ZuXue Wei

A Research Model of Packet forwarding in Programmable Network .... 177
Xianchun Zou, Yan Ma, and Yuanyuan Liang

Research and Design on a New Operational Type of Campus Network ... 184
Zheng Zeng and Lin Chen

Research of Network Management System based on Active Network .... 190
Li Ming and Ma Yan

Feature Extraction of Radar Emitter Signal Based on Wavelet Packet and EMD ................................................................. 198
ZHUBin and JIN Weidong

Power Allocation for Cooperative Communication of Gaussian Channel Gains ................................................................. 206
Yuan Zhang and Shexiang Ma

A Practical Filter of Varying Rate Measurement of Multiple Airborne and Ground-based Radars ........................................... 213
FanXiongHua, Jiang Jing, and Gao Lan

Electrical Engineering and Applications

Study of Brushless DC Motor Control System with Current Hysteresis Loop ................................................................. 221
Li Zhengzhong and Gao Guofang

ADRC Algorithm of Furnace Temperature Control System .......... 228
Gao Guofang and Li Zhengzhong

A Method Research on Nonlinear System Identification Based on Neural Network ............................................................. 234
Xinghua Liu, Jiang Meng, and Jike Ge

Parallelized Monte Carlo Illumination Implementation in Ray Tracing by Using CUDA ......................................................... 241
Wang Wei and Liu Fuyan

Fuzzy Operation Forensics Research Based on Mathematical Morphology ................................................................. 247
Linhua Zhang, Wanyu Duan, and Hongli Guo

Design of Heating Furnace Temperature Control System Based on Fuzzy-PID Controller ................................................. 253
Gao Guofang and Li Zhengzhong
Characteristics of Rustling Sounds Created by the Cotton Fabrics with Variable-Rubbing Speeds ...................................................... 260
   Wang Hongshan and Zhang Pan

Construction and Application of Fuzzy Evaluation Model in Laboratory Project Based on AHP ................................................. 266
   TongKe CUI and BenGui LI

Feature Variable Selection based on Variable Contributions in Artificial Neural ................................................................. 273
   Jibin Chang, Li Yan, Yubin Liu, and Yucheng Liu

**Information Computing and Applications**

Generalized Least Square Estimation of Error-in-Variable Models and Its Statistical Property ......................................................... 280
   Haoqi Li

User Interest Data Discovery Mode .............................................. 286
   Qiong HONG and Hao ZHANG

Method for Image Edge Detection Based on UGM model .................. 292
   Zhu Ya-hui and Peng Guo-hua

Study on Fusion based FNN Algorithm for Sign Language Recognition .. 298
   Ming Li

An Improved Ant Colony Clustering Algorithm .............................. 305
   Tao Weian, Ma Yan, Tian Jinghua, Li Mingyong, Duan Wenshu, and Liang Yuanyuan

Video Face Recognition and Pose Discrimination based on Neural Network .......................................................... 312
   Wang Xiaoping

Edge Detection of Color Image Based on HI*S* Color Space .............. 319
   Linhua Zhang, Xiuli Mao, and Chuanbin Zhou

Cross-platform Video Segmentation System based on Color Histogram .. 325
   Yin Jian, Wang Wei, and Wang Suhuan

Generation and Applications of DEM based on ArcGIS .................... 331
   Fang Liang, Jianxiong Zhang, Wenjuan Lian, and Weiling Lv

Effects of L1 Proficiency on L2 Self-embedded Complex Sentence Processing ................................................................. 338
   Ren Hulin

A New Method for Line Matching .................................................. 346
   Yanxia Wang, Ma Yan, and Qixin Chen
Improved Particle Swarm Optimization Based on Neighborhood Search  
  Wenxue Zhang

Research on Structural Similarity for Image Quality Assessment  
  Hui Dong, Xiuhua Ji, and Yuting Song

**Information Education and Applications**

Probe into E-education of “Algorithm and Data Structure”  
  Yanqin Tang, Zhe Xu, and Qing Li

Design of High-performance Network Learning Platform  
  Ma Handa

The Value Orientation of Curriculum Implementation in Vocational Nursing Education  
  Haihong Zhang and Wenxue Zhang

Deeply Research on Diversity Evaluation Mode of “Fundamentals of Programming”  
  LU Ling, LIU Hengyang, and HUANG XianYing

**Intelligent System and Applications**

Study of Constructing a Flash-based Practical Integrableware System  
  Chen Yaofei and Ni Yinghua

Design of Technology Innovation Based on Triz  
  PEI Xiaomin and Zhang Jun

Evolutionary Game Analysis of The Problem in Occupational-disease Appraisal  
  Xueping Zuo and Guangle Yan

  Xiong Ying and Huang Xiang

LD Factorization and Orthogonal Diagonal Factorization of Row (Column) Skew Symmetric Matrices  
  YUAN Hui-ping

Ejecting Interior Ballistic Design and Computation for Carrier Plane  
  Qinggui Chen, Qiang Qi, Haiyang Wang, Ruyan Zhao, and Bin Wang

Control Smoke Animations through Variational Guiding  
  Chen Yecheng and Liu Fuyan
Design and Implementation of Intelligent Recommendation System Platform Based on MVC ................................. 437
Hao ZHANG and Qiong HONG

Jinhua WANG and Zhiyong LI

A Low Complexity Parallel Iterative Decoding Algorithm for Turbo Product Codes ........................................ 449
Xueping WANG and Wen Luo

MVC Design and Application for Online Employment .................. 457
Huang HANYAN

The Relationship between North Pacific Oscillation and Summer Floods/Drougts over North China .................... 463
Zheng QIU YUE, Hu JING GUO, Shen BAIZHU, Gong ZHI QIANG, and Feng GUOLIN

Study on Embedded and Integrated Navigation System Based on ARM and DSP ............................................. 469
Aijun ZHANG, Xiaolin CHENG, and Yunfeng HE

Service Engineering and Applications

Design and Research on Information Services Management System ...... 477
Li YANG and Daiyun WENG

Research on Urban Public Traffic Network of Chongqing based on PAJEK .................................................... 485
Zhonghua ZHU and Degang YANG

Design of the Third-party Knowledge Service Platform Oriented to Full Lifecycle of Virtual Enterprise .................... 491
Yong FENG, Yan YANG, Yong-fang GUO, and Hong-yan XU

Empirical Analysis of Wuhan Weighted Bus-Stop Network Characteristics ...................................................... 498
Man ZHAO and Degang YANG

Opinion Mining by Generating the Summaries of Users’ Reviews ........ 505
Zhu DELI

The 3D Visual Research of Virtual Forest based on OpenGL .......... 512
Bo PENG, Chuanwen LUO, and Wangyang JIANG

Non-greedy Heuristic Web Spiders Search Algorithm .................. 518
Weiming YANG

Author Index .................................................... 524
Information Engineering and Applications
International Conference on Information Engineering and Applications (IEA 2011)
Zhu, R.; Ma, Y. (Eds.)
2012, XVIII, 1735 p. 660 illus., 58 illus. in color. In 3 volumes, not available separately. Hardcover