

Contents

A Biologically-Inspired Network for Generic Object Recognition Using CUDA	1
<i>Yuekai Wang, Xiaofeng Wu, Xiaoying Song, Wenqiang Zhang, Juyang Weng</i>	
On Lagrangians of Hypergraphs and Cliques	7
<i>Yuejian Peng, Cheng Zhao</i>	
Practice of Semi-automatic Formal Description of Terms in Knowledge Organization Systems	13
<i>Zhang Yunliang, Zhu Lijun, Qiao Xiaodong, Zhang Quan, Miao Jianming</i>	
Specific Dimension Stagnation Optimal Mutation of Particle Swarm Optimization Algorithm	19
<i>Daqing Zhang, Ling Wang</i>	
The Study of Natural Language Processing Based on Artificial Intelligence	25
<i>Xia Yunye, Zhu Meizheng, Li Xin</i>	
Using Spatial Reasoning in CPM Based Image Retrieval	33
<i>Shengsheng Wang, Chuo Dong, Dayou Liu</i>	
A WIA-PA Network Oriented Routing Algorithm Based on VCR	39
<i>Xiushuang Yi, Peijun Jiang, Xingwei Wang, Weixing Wu</i>	
Design and Implementation of Image-Based Monitoring and Tracking System	45
<i>Jen-Chao Tai, Hsin-Ming Lo</i>	
Face Recognition Based on Grain-Shape Features	55
<i>Weijun Dong, Mingquan Zhou, Guohua Geng</i>	

Fault Identification for Industrial Process Based on KPCA-SSVM	63
<i>Yinghua Yang, Qingchao Yu, Shukai Qin</i>	
High Accuracy Temperature Control Research on Charge Stable Colloidal Crystals	71
<i>Shangqi Gao, Hao Yang, Zhibin Sun, Yuanda Jiang, Guangjie Zhai, Ming Li</i>	
Optimum Design of PID Controller Parameters by Improved Particle Swarm Optimization Algorithm	79
<i>Xiaodong Chen, Yumin Zhang</i>	
Research on Fuzzy-Neural Networks Controller in Thermostatic and Humidistatic Aircondition System	85
<i>Xing Li, Dingguo Shao, Wei Lv</i>	
A String Matching Algorithm Based on Real Scaling	93
<i>Zhang Ying, Chang Guiran, Jia Jie</i>	
An Approach for System Model Identification	99
<i>Xiaoping Xu, Fucui Qian, Feng Wang</i>	
Extracting Characteristics from Corrosion Surface of Carbon Steel Based on WPT and SVD	105
<i>Li Guo-bin, Li Ting-ju</i>	
Study Actuality of Immune Optimization Algorithm and It's Future Development	113
<i>Shi Weili, Zhang Wenbo, Bai Baoxing, Xu Honghua, Miao Yu</i>	
Fuzzy Rough Set Based on Dominance Relations	119
<i>Zhang Xiaoyan, Xu Weihua</i>	
The Study on the Internal Diameter Measuring System for the Small Bores	127
<i>Runzhong Miao, Zhanfang Chen, Rui Li, Zhiwen Yang, Shufang Wu</i>	
Moving Object Detection and Tracking in Mobile Robot System Based on Omni-Vision and Laser Rangefinder	133
<i>Jin-xiang Wang, Xiao-feng Jin</i>	
Robot Path Planning Based on Random Expansion of Ant Colony Optimization	141
<i>Jinke Bai, Lijia Chen, He Jin, Ruixia Chen, Haitao Mao</i>	
Moving Human Head Detection for Automatic Passenger Counting System	147
<i>Xiaowei Liu, Shasha Tian, Jiafu Jiang, Jing Shen</i>	

Study on the Longitudinal and Lateral Coupled Controlling Method of an Intelligent Vehicle Platoon	153
<i>Cui Shengmin, Zhang Kun, Wang JiMeng</i>	
An Algorithm of Infrared and Visible Light Images Fusion Based on Infrared Object Extraction	159
<i>Haichao Zhang, Fangfang Zhang, Shibao Sun, Wen Yang, Yatao Wang</i>	
The Design of Ultra High-Speed Intelligent Data Acquisition System ...	167
<i>Xiaolei Cheng, Xiaoping Ouyang, Fang Liu</i>	
Simulation of Wealth Distribution	175
<i>Fangfeng Zhang, Tejaswini K. More, Xuehu Zhang</i>	
A Study on Human Integration of Audiovisual Spatial Information for Multi-sensor Fusion Technology	181
<i>Qi Li, Ning Gao, Qi Wu</i>	
Innovative Web-Based Tool for Safer Transitions of Patients through Healthcare Systems	187
<i>Ranjit Singh, Raj Sharman, Ashok Singh, Ron Brooks, Don McLean, Gurdev Singh</i>	
On the Design and Experiments of a Fluoro-Robotic Navigation System for Closed Intramedullary Nailing of Femur	195
<i>Sakol Nakdhamabhorn, Jackrit Suthakorn</i>	
Functional Size Measurement Using Use Case: <i>From the Viewpoint of Flow of Event</i>	205
<i>Xiaomin Zhang, Aihua Ren</i>	
Process-Based Measurement on Airworthy Software	211
<i>Fen Sun, Yumei Wu, Deming Zhong</i>	
An Improved Algorithm Based on Max-Min for Cloud Task Scheduling ,	217
<i>Gao Ming, Hao Li</i>	
Dynamic-Feedback-Based Connection Pool Framework for Database Cluster	225
<i>Sui Xin-zheng, Cheng Ren-hong</i>	
Loyalty-Based Resource Allocation Mechanism in Cloud Computing ...	233
<i>Yanbing Liu, Shasha Yang, Qingguo Lin, Gyoung-Bae Kim</i>	
Power Optimization of Parallel Storage System for Applications with Checkpointing	239
<i>Yong Dong</i>	

Research on Type-Safety Parallel Update	245
<i>Zhang Shi, Jiang Jian-Min</i>	
The Research on Cloud Resource Pricing Strategies Based on Cournot Equilibrium	253
<i>Bo Wang, Hao Li, Yuanyuan Miu, Bing Kong</i>	
Embedded Software Test Model Based on Hierarchical State Machine	261
<i>Shunkun Yang, Guangwei Zhang, Qingpei Hu, Hong Kong</i>	
RTEMS OS Porting on Embedded at91r40008 Platform	269
<i>Wu Kai, Li Fang</i>	
Embedded Mobile Internet Supervision System for Food Traceability Supplied to Hong Kong	275
<i>Xianyu Bao, Shaojing Wu</i>	
Abstract Mechanisms of GEF and Techniques for GEF Based Graphical Editors	281
<i>Deren Yang, Min Zhou, Fen Chen, Jianping Ma</i>	
An Implementation on Instruction Design Ontology	289
<i>Dongqing Xiao, Muyun Yang, Sheng Li, Tiejun Zhao</i>	
Application of DXF in Developing Vectorgraph Edition System for Laser Carve	297
<i>Yan Zhao, Hongyi Gu, Ying Che</i>	
Gantt Chart Generation Technology Based on Web Applying in Manufacturing Execution System	303
<i>Yadong Fang, Laihong Du</i>	
Legacy System User Interface Reengineering Based on the Agile Model Driven Approach	309
<i>Yen-Chieh Huang, Chih-Ping Chu</i>	
Research and Implementation on the AJAX Tag Framework Based on J2EE	315
<i>Yang Xiao-jie, Weng Wen-yong, Su Jian, Lu Dongxin</i>	
The Design and Realization of Core Asset Library on the Data Processing Domain	323
<i>Xinyu Zhang, Li Zheng</i>	
The Development and Realization of 3D Simulation Software System in Mobile Crane	329
<i>Xin Wang, Youguo Liang, Rumin Teng, Shunde Gao</i>	

Modeling Web Applications for Software Test	337
<i>Min Cao, Haiqiang Li</i>	
A Fully Concurrent Garbage Collector	343
<i>Delvin Defoe, Morgan Deters, Ron K. Cytron</i>	
A Metamodel for Internetwork Applications	365
<i>Zhiyi Ma, Hongjie Chen</i>	
Design and Implementation of Intermediate Representation and Framework for Web Applications	375
<i>Tomokazu Hayakawa, Shinya Hasegawa, Teruo Hikita</i>	
Design and Implementation of Market Management System Model Based on the Branch and Bound Algorithm and Internet of Things	385
<i>Yang Liu, Wenxing Bao</i>	
An Efficiency Optimization Strategy for Huge-Scale Data Handling	393
<i>Congqi Xia, Yonghua Zhu</i>	
Impact on Chunk Size on Deduplication and Disk Prefetch	399
<i>Kuniyasu Suzuki, Toshiki Yagi, Kengo Iijima, Cyrille Artho, Yoshihito Watanabe</i>	
Management Information Ontology Middleware and Its Needs Guidance Technology	415
<i>Yugang Zhu, Kaijun Chen, Xingming Guo, Yong He</i>	
Software Development of EVMIS Color LED Display	423
<i>Zeming Jiang, Chen Cheng, Xin Chen</i>	
The Definition and Implementation of a Framework for Web-Based Configurable Software	429
<i>Junjie Wu, Yonghua Zhu, Huaiyang Zhu</i>	
Dynamics Simulation of Engine Crankshaft Based on Adams/Engine	435
<i>Min Cheng, Jiping Bao, Qiankun Zhou</i>	
Finding Abnormal Behaviors of Object-Oriented Programs Based on Cumulative Analysis	441
<i>Xuemei Liu, Shuangmei Liu</i>	
Proof Automation of Program Termination	453
<i>Stefan Andrei, Kathlyn Doss, S. Kami Makki</i>	
Testing of Loop Join Points Using AspectJ	461
<i>Mutum Zico Meetei, Anita Goel, Siri Krishan Wasan</i>	

The Research of Determining Class Testing Sequence 469
Dan Liu, Junhui Zhang, Hongyu Zhai, Li Li, Liu Liu, Xiaohui Yang

Twice Rewritings to Reduce Test Case Generation with Model Checker 475
Ye Tian, Ying Chen, Hongwei Zeng

Unit Testing Memory Management with Microsoft Pex 483
Xiaoyu Liu, Liang Zhou, Xiangpeng Zhao, Hongli Yang

White-Box Test Case Generation Based on Improved Genetic Algorithm 489
Peng Wang, Xiao-juan Hu, Ning-jia Qiu, Hua-min Yang

A Formal Method for Analyzing Trust Chain of Trusted Computing Platform 497
Yasha Chen, Yu Sun

A Novel Method for Searching Services of Cloud Computing 503
Tianji Wu, Kui Xiao, Kui Yang

A Quantitative Management Method of Software Development and Integration Projects 509
JiangHong Shu, Yong Duan, Fang Wang

Large Vocabulary Continuous Speech Recognition of Uyghur: Basic Research of Acoustic Model 515
Muhetaer Shadike, Li Xiao, Buheliqiguli Wasili

A Workflow Engine to Achieve a Better Management of Enterprise Workflow 523
Wei Li, Lihong Chen

Software Project Process Models: From Generic to Specific 529
Hao Wang, Xuke Du, Hefei Zhang

An Extended Role-Based Access Control Model 539
Zheng Yu

Research on Dependability Evaluation and Measurement of Ordnance Safety Critical Software 545
Ma Sasa, Zhao Yang, Zhou Lei, Zhao Shouwei

The Research of Web Security Model Based on JavaScript Hijacking Attack 555
Zhiguang Wang, Chongyang Bi, Wei Wang, Pingping Dong

Formalization of Risks and Control Activities in Business Process 565
Yasuhito Arimoto, Shusaku Iida, Kokichi Futatsugi

Implementation of Panorama Virtual Browser and Improvements	577
<i>Ranran Feng, Hongqiang Qian, Batbold Myagmarjav, Jiahuang Ji</i>	
Situation Analysis and Policy Research of Software Engineering Standardization of China	585
<i>Yangyang Zhang, Yuyu Yuan, Jørgen Bøegh</i>	
Algorithms for Multilevel Analysis of Growth Curves	595
<i>Xiaodong Wang, Jun Tian</i>	
Effects of Sample Size on Accuracy and Stability of Species Distribution Models: A Comparison of GARP and Maxent	601
<i>Xinmei Chen, Yuancai Lei</i>	
Matching Algorithm Based on Characteristic Matrix of R-Contiguous Bit	611
<i>Jianping Zhao, Hua Li, Jingshan Liu</i>	
Modeling and Simulation for Electric Field of Electrorotation Microchip with Ring Electrode	617
<i>Liu Ganghai, Yang Qihua</i>	
Particle Swarm Optimization Algorithm for the Application of Reactive Power Optimization Problem	625
<i>DianSheng Yang</i>	
Pulse Wave Detection for Ultrasound Imaging	633
<i>Xuemin Wang, Wei Wang, Xiaozuo Lu, Peng Zhou</i>	
The Integration of Security Systems Using WBSC	639
<i>Sanchai Rattananon, Suparerk Manitpornsut</i>	
Computer Simulation for a Catalytic Reaction on Fractal Surfaces by Monte Carlo Method	647
<i>He-Bei Gao, Hong Li</i>	
A New Interpolation Criterion for Computation of Two-Dimensional Manifolds	653
<i>Hengyi Sun, Yangyu Fan, Jing Zhang, Huimin Li, Meng Jia</i>	
Computer Simulation for Viscous Fingering Occurred in a Hele-Shaw Cell	659
<i>Jun Luo, Jianhua Zhang</i>	
Numerical Simulation of 3D Free Overfall Flows	665
<i>Jyh-Haw Tang, Ming-Kuan Sun</i>	

Simulation Research on Effect of Coach Top-Window Opening on Internal and External Flow	673
<i>Xingjun Hu, Fengtao Ren, Peng Guo, Yang An</i>	
Ventilation Control and Risk Assessment for Fire Accident of Qing-Cao-Sha Water Tunnel	681
<i>Baoliang Zhang, Jue Ding, Yi Liu, Qingtao Wang, Peifen Weng</i>	
A New Method for Reducing Metal Artifacts of Flat Workpiece in Cone-Beam CT	687
<i>Feng Zhang, Li-zhong Lu, Qing-liang Li, Bin Yan, Lei Li</i>	
Configure Scheme of Mixed Computer Architecture for FMM Algorithm	693
<i>Min Cao, Zhen Cao</i>	
Radiative Properties Modeling for Complex Objects Using OpenGL	699
<i>Yu Ma, Shikui Dong, Heping Tan</i>	
Bounds on Pair-Connected Reliability of Networks with Edges Failure	705
<i>Hu Zhao, Wen Lu, Haixing Zhao</i>	
Rapid Calculation Preprocessing Model of N-Body Problem	711
<i>Shaoping Chen, Shesheng Zhang</i>	
Stability of a Continuous Type of Neural Networks with Recent-History Distributed Delays	719
<i>Yuejin Zhou, Juan Zhang, Yunjia Wang</i>	
The Numerical Fitting and Program Realization for Ordinary Differential Equation with Parameters to Be Determined	727
<i>Changlong Yu, Jufang Wang, Xianglin Wei</i>	
Dynamics Analysis of Blast in the Concrete by SPH Method	733
<i>Guannan Wu, Baoliang Zhang, Jue Ding, Qingtao Wang, Pu Song</i>	
Free Vibration Analysis of Ring-Stiffened Cylindrical Shells Based on Transfer Matrix Method	739
<i>Guanmo Xie</i>	
Implementation of ActiveX Control of Three-Dimensional Model Based on OpenGL	747
<i>Xiuli Gong, Youqing Guan</i>	

Meshless Method Based on Wavelet Function	755
<i>Dengfeng Wu, Kun He, Xin Ye</i>	
The Research and Development on the Mould Virtual Assembly System	761
<i>Dongfeng Xu, Yan Chen, Yun Liang</i>	
Breast Measurement of EIT with a Planar Electrode Array	769
<i>Wang Yan, Sha Hong</i>	
Finite Difference Time Domain Method Based on GPU for Solving Quickly Maxwell's Equations	775
<i>Zhen Shao, Shuangzi Sun, Hongxing Cai</i>	
TERPRED: A Dynamic Structural Data Analysis Tool	781
<i>Karl Walker, Carole L. Cramer, Steven F. Jennings, Xiuzhen Huang</i>	
An ECG Signal Processing System Based on MATLAB and MIT-BIH	787
<i>Tao Lin, Shuang Tian</i>	
Cone-Beam Computed Tomography Image Reconstruction Based on GPU	793
<i>Hongwei Xu, Fucang Jia, Wenyan Chen, Xiaodong Zhang</i>	
Analysis and Design on Environmental Risk Zoning Decision Support System Based on UML	799
<i>Weifang Shi, Weihua Zeng</i>	
Evaluation on Pollution Grade of Seawater Based on the D-S Evidence Theory	805
<i>Hengzhen Zhang, Xiaofeng Wang, Cuiju Luan, ShiShuang Jin</i>	
Study on Simulation of Sandstorm Based on OpenGL	811
<i>Wei-wei Gan, Xi-tang Tan</i>	
3D Morphology Algorithm Implementation and Application in High Quality Artificial Digital Core Modeling	817
<i>Guoping Luo, Linzhu Wang</i>	
Computation of Time-Dependent AIT Responses for Various Reservoirs Using Dynamic Invasion Model	823
<i>Jianhua Liu, Zhenhua Liu, Jianhua Zhang</i>	

**Petroleum Reserve Quality Evaluation System on Offshore
Fault-Block Oil and Gas Field** 829
Chenghua Ou, Nan Sun, Han Xiao

**The Application of BPR in Seismic Data Processing and Interpretation
Management** 835
*Jianyuan Fu, Jianku Sun, Huan Huang, Jinbiao Zhang, Hongde Yang,
Kexin Deng, Zixin Luo*

Author Index 843