

# *Proceedings*

---

## 2007 International Conference on Computational Intelligence and Security

### CIS 2007

*Harbin, Heilongjiang, China  
15–19 December 2007*



Los Alamitos, California  
Washington • Tokyo



# Table of Contents

## 2007 International Conference on Computational Intelligence and Security

### CIS 2007

#### Preface

#### Organizing Committee

#### Program Committee

#### Reviewers

#### Keynote Speakers

DRM Interoperability

*Ton Kalker*

Towards an Understanding of the Brain via Microscopic and Macroscopic Studies

*L.M. Patnaik*

Mining with Noise Knowledge: Error Aware Data Mining

*Xindong Wu*

Modeling Network Security Services in Tactical Networks

*Stephen D. Wolthusen*

#### VOLUME 1

#### Learning Theory and Algorithms

Mixing Matrix Recovery of Underdetermined Source Separation Based on Sparse Representation _____	1
<i>Chu-Jun Yao, Hai-Lin Liu, and Zhi-Tao Cui</i>	
Region Assessment of Soil Erosion Based on Naive Bayes _____	6
<i>Weihua Lin, Yonggang Wu, Dianhui Mao, and Yan Yu</i>	
A Bayesian Network Based Approach for Root-Cause-Analysis in Manufacturing Process _____	10
<i>Satyabrata Pradhan, Rajveer Singh, Komal Kachru, and Srinivas Narasimhamurthy</i>	
Step-Size Optimization EASI Algorithm for Blind Source Separation _____	15
<i>Weihong Fu, Xiaoniu Yang, and Naian Liu</i>	
Variable Step-Size Online Algorithm for Blind Separation Based on the Extended Infomax _____	19
<i>Xuansen He and Shouke Ma</i>	
A Novel Learning Method for ANFIS Using EM Algorithm and Emotional Learning _____	23
<i>Su Hongsheng and Zhao Feng</i>	
A Novel Method for Intelligence of Sensors Modeling _____	28
<i>Yi Hu, Yue Chang, and Yong Ni</i>	
An Effective Feature-Weighting Model for Question Classification _____	32
<i>Peng Huang, Jiajun Bu, Chun Chen, and Guang Qiu</i>	
P2P Traffic Identification Technique _____	37
<i>Li Jun, Zhang Shunyi, Liu Shidong, and Xuan Ye</i>	

Study on PIGA Test Method on Centrifuge _____ <i>Yong-hui Qiao, Yu Liu, and Bao-ku Su</i>	42
Parameters Selection for SVR Based on the SCEM-UA Algorithm and its Application on Monthly Runoff Prediction _____ <i>Liu Ji and Wang Bende</i>	48
Estimate and Track the PN Sequence of Weak DS-SS Signals _____ <i>Tianqi Zhang, Shaosheng Dai, Liufei Yang, and Xuesong Li</i>	52
A Smoothing Support Vector Machine Based on Quarter Penalty Function _____ <i>Min Jiang, Zhiqing Meng, and Gengui Zhou</i>	57
Fast Forecasting with Simplified Kernel Regression Machines _____ <i>Wenwu He and Zhizhong Wang</i>	60
An Accelerated SMO-Type Online Learning Algorithm _____ <i>Zhifeng Hao, Zhenhua He, and Xiaowei Yang</i>	65
An Improved MRF Based Unsupervised Change Detection Method _____ <i>Yuan Qi and Zhao Rong-chun</i>	70
Intrinsic Dimensionality Estimation with Neighborhood Convex Hull _____ <i>Chun-guang Li, Jun Guo, and Xiangfei Nie</i>	75

## Evolutionary Computation

A Novel Evolutionary Algorithm for Function Optimization Using MEC _____ <i>Lijie Li, Yongmei Lei, and Ying Zhang</i>	80
A New Tree Encoding for the Degree-Constrained Spanning Tree Problem _____ <i>Gengui Zhou, Zhiqing Meng, Zhenyu Cao, and Jian Cao</i>	85
A Novel Hybrid Real-Valued Genetic Algorithm for Optimization Problems _____ <i>Hong-qi Li and Li Li</i>	91
Global Optimization Method Based on the Statistical Genetic Algorithm for Solving Nonlinear Bilevel Programming Problems _____ <i>Hong Li, Yong-Chang Jiao, Li Zhang, and Fu-Shun Zhang</i>	96
Prediction of MHC Class II Binding Peptides Using a Multi-Objective Evolutionary Algorithm _____ <i>Wang Lian, Liu Juan, and Luo Fei</i>	101
A New Evolutionary Algorithm for Constrained Optimization Problems _____ <i>Yibo Hu and Yuping Wang</i>	105
An Improved Genetic Algorithm for Optimal Operation of Cascaded Reservoirs _____ <i>Na Li and Ya-dong Mei</i>	110
A Decision-Tree-Based Multi-objective Estimation of Distribution Algorithm _____ <i>Xiaoping Zhong and Weiji Li</i>	114
Performance Scalability of a Cooperative Coevolution Multiobjective Evolutionary Algorithm _____ <i>Tse Guan Tan, Jason Teo, and Hui Keng Lau</i>	119
Comparison between Particle Swarm Optimization, Differential Evolution and Multi-Parents Crossover _____ <i>Xing Xu and Yuanxiang Li</i>	124
PSO Algorithm Based Online Self-Tuning of PID Controller _____ <i>Xu-zhou Li, Fei Yu, and You-bo Wang</i>	128
A Self-Adaptive Particle Swarm Optimization Algorithm with Individual Coefficients Adjustment _____ <i>Zhengjia Wu and Jianzhong Zhou</i>	133
A GA Based Combinatorial Auction Algorithm for Multi-Robot Cooperative Hunting _____ <i>Jianwei Gong, Jianyong Qi, Guangming Xiong, Huiyan Chen, and Wanning Huang</i>	137
An Adaptive Parameter Control Strategy for Ant Colony Optimization _____ <i>Weixin Ling and Huanping Luo</i>	142

## Data Mining

A Multi-Focus Image Fusion Algorithm with DT-CWT _____	147
<i>Sun Wei and Wang Ke</i>	
A Fuzzy Fusion in Multitarget Tracking with Multisensor _____	152
<i>Xiaohui Chen and Yang Zhang</i>	
An Algorithm for Extracting Referential Integrity Relations Using Similarity during RDB-to-XML Translation _____	157
<i>Jangwon Kim, Dongwon Jeong, Jinhyung Kim, and Doo-Kwon Baik</i>	
Research on Algorithm of Web Classification Based on EP and FFSS _____	162
<i>Zufeng Wang and Weiping Wang</i>	
Discovery of Direct and Indirect Association Patterns in Large Transaction Databases _____	167
<i>Weimin Ouyang, Shuanghu Luo, and Qinhuang Huang</i>	
Associative Classification Using SVM-Based Discretization _____	171
<i>Cheong Hee Park and Moonhwi Lee</i>	
An Efficient Graph-Based Multi-Relational Data Mining Algorithm _____	176
<i>Jingfeng Guo, Lizhen Zheng, and Tieying Li</i>	
Analysis on Time-lagged Gene Clusters in Time Series Gene Expression Data _____	181
<i>Tao Zeng and Juan Liu</i>	
A Novel Local Features-Based Approach for Clustering Microarray Data _____	186
<i>Zhipeng Wang, Yuhai Zhao, and Ying Yin</i>	
Improved Variable Precision Rough Set Model and its Application to Distance Learning _____	191
<i>Ayad R. Abbas, Liu Juan, and Safaa O. Mahdi</i>	
A New Attribute Reduction Algorithm in Continuous Information Systems _____	196
<i>Yue-jin Lv, Hong-yun Zhang, Fen Quan, and Zhi-cheng Chen</i>	
Realization of a New Association Rule Mining Algorithm _____	201
<i>Jun Gao</i>	
A Study on the Method of Attribute Reduction Based on Rough Set under Fuzzy Equivalent Relation _____	205
<i>Guorui Jiang and Guojun Zang</i>	
Mining Maximally Common Substructures from XML Trees with Lists-Based Pattern-Growth Method _____	209
<i>Juryon Paik, Joochang Lee, Junghyun Nam, and Ung Mo Kim</i>	
The Algorithm of Objective Association Rules Mining Based on Binary _____	214
<i>Gang Fang, Zu-Kuan Wei, and Qian Yin</i>	
Fuzzy Factor in Switching Regression Models _____	218
<i>Xiaobing Yang, Lingmin He, and Jin Tan</i>	
Personalized Web Search Using User Profile _____	222
<i>Jingqiu Xu, Zhengyu Zhu, Xiang Ren, Yunyan Tian, and Ying Luo</i>	
Mining Temporal Web Interesting Patterns _____	227
<i>Xianwei Hu, Ying Yin, and Bin Zhang</i>	
Frequent Closed Informative Itemset Mining _____	232
<i>Huaiguo Fu, Micheal O. Foghlu, and Willie Donnelly</i>	
Data Extraction from Deep Web Pages _____	237
<i>Jufeng Yang, Guangshun Shi, Yan Zheng, and Qingren Wang</i>	
Web pages Classification Using Domain Ontology and Clustering _____	242
<i>Sima Soltani and Ahmad Abdollahzadeh Barforoush</i>	

## Distributed and Multi-Agent Systems

A Multi-Agent Based Autonomic Management Architecture for Large-Scale Server Clusters _____	247
<i>Zhenghua Xue, Xiaoshe Dong, Weizhe Liu, Junyang Li, and Shihua Liao</i>	
Quantum Varying Deficit Round Robin Scheduling Over Priority Queues _____	252
<i>Weiming Tong and Jing Zhao</i>	
iRBO: Intelligent Role-Based Object for Object-Based Storage Device _____	257
<i>Yinliang Yue, Fang Wang, and Dan Feng</i>	
L-Chord: Routing Model for Chord Based on Layer-Dividing _____	262
<i>Biqing Wang and Peng He</i>	
Implementation and Performance Evaluation of an Adaptable Failure Detector for Distributed System _____	266
<i>Jingli Zhou, Guang Yang, Lijun Dong, and Gang Liu</i>	
An Adaptive Join Strategy in Distributed Data Stream Management System _____	271
<i>Xiaojing Li, Yu Gu, Dejun Yue, and Ge Yu</i>	
Topic-Oriented Search Model Based on Multi-Agent _____	276
<i>Jie Shen, Rong-shuang Sun, Liu-hua Wei, Hui Zhang, Yan Zhu, and Chen Chen</i>	
A Formal Open Framework Based on Agent for Testing Web Applications _____	281
<i>Huaikou Miao, Shengbo Chen, and Zhongsheng Qian</i>	
A Recognition Approach for Adversarial Planning Based on Complete Goal Graph _____	286
<i>Ji-Li Yin, Ying Liu, Jin-Yan Wang, Wen-Xiang Gu, and Yin-Ping Zhang</i>	
A Quantifiable Trust Model for Multi-agent System Based on Equal Relations _____	291
<i>Li Li, Hao Li, Gehao Lu, and ShaoWen Yao</i>	
A Multi-Agent and PSO Based Simulation for Human Behavior in Emergency Evacuation _____	296
<i>Yang Bo, Wang Cheng, Huang Hua, and Li Lijun</i>	

## Image Processing and Pattern Recognition

Theoretical Investigation on Post-Processed LDA for Face and Palmprint Recognition _____	301
<i>Jianye Hao, Wangmeng Zuo, and Kuanquan Wang</i>	
New Parallel Models for Face Recognition _____	306
<i>Heng Fui Liau, Kah Phooi Seng, Yee Wan Wong, and Li-Minn Ang</i>	
A Multi-Pattern Matching Algorithm on Multi-Language Mixed Texts for Content-Based Network Information Audit _____	310
<i>Qin-dong Sun, Qian Wang, and Xin-bo Huang</i>	
Face Detection from Greyscale Images Using Details from Categorized Wavelet Coefficients as Features for a Dynamic Counterpropagation Network _____	315
<i>Yeong Lee Seng, Li-Minn Ang, and Kah Phooi Seng</i>	
An Improved Competitive and Cooperative Learning Approach for Data Clustering _____	320
<i>Shao-ping Wang, Wen-jiang Pei, and Yiu-ming Cheung</i>	
Shape Modification of B-Spline Curve with Geometric Constraints _____	325
<i>Siyuan Cheng, Xiangwei Zhang, and Kelun Tang</i>	
A New Anisotropic Diffusion Equation with Adaptive Fidelity Term _____	330
<i>Xiaoli Sun and Guoxiang Song</i>	
An Effective Approach towards Contour-Shape Retrieval _____	335
<i>Junding Sun and Xiaosheng Wu</i>	
A Fast and Robust People Counting Method in Video Surveillance _____	339
<i>Enwei Zhang and Feng Chen</i>	
A Hard Decision Error Correction Scheme for Corrupted Arithmetic Codes _____	344
<i>Mengmeng Zhang, Yuehai Wang, Jingzhong Wang, and Shumin Zhou</i>	
Level Set Method for License Plate Localization Technology _____	347
<i>Yuwang Yang, Jun Tao, and Jingyu Yang</i>	

A New MRF Framework with Dual Adaptive Contexts for Image Segmentation _____	351
<i>Ping Zhong, Fang Liu, and Runsheng Wang</i>	
Human Body Segmentation in the Presence of Occlusion _____	356
<i>Bi Sheng, Xiaoyan Shen, and Wang Qiang</i>	
An Effective Approach to Content-Based 3D Model Retrieval and Classification _____	361
<i>Ke Lu, Feng Zhao, and Ning He</i>	
3D Feature Extraction of Head based on Target Region Matching _____	366
<i>Haibin Yu, Jilin Liu, and Jingbiao Liu</i>	
Extraction of Semantic Keyframes Based on Visual Attention and Affective Models _____	371
<i>Zhi-Cheng Zhao and An-Ni Cai</i>	
A Color and Texture Feature Based Approach to License Plate Location _____	376
<i>Jia Li and Mei Xie</i>	
Saliency-Based Evaluation Strategy for Image Annotation _____	381
<i>Yong Ge, Jishang Wei, Xin Yang, and Xiuqing Wu</i>	
Study on Conversion Method of Color Space under a Big Color Gamut _____	386
<i>Hongxia Zhao and Tao Wang</i>	
Image Restoration Using Gaussian Particle Filters _____	391
<i>Yuelu Liu, Tingzhi Shen, and Xinyi Wang</i>	
Spectral Correspondence Using Local Similarity Analysis _____	395
<i>Jun Tang, Dong Liang, Nian Wang, and Zhao-Hong Jia</i>	
A Combined Feature for Fingerprint Recognition _____	400
<i>Monireh Abdoos and Nasser Mozayani</i>	
Face Recognition Using Topology Preserving Nonnegative Matrix Factorization _____	405
<i>Taipng Zhang, Bin Fang, Guanghui He, Jing Wen, and Yuanyan Tang</i>	
2D-NPP: An Extension of Neighborhood Preserving Projection _____	410
<i>Zirong Li and Minghui Du</i>	
Laser Printer Fuzzy Identification Based on Correlative Specific Area of Character Image _____	415
<i>Ning Wang and Guo-qiang Han</i>	
Improved Facial Feature Points Calibration Algorithm Based on ASM _____	420
<i>Dai Liming, Liu Miao, and Chen Yuanyuan</i>	
A Constrained Genetic Algorithm for Efficient Dimensionality Reduction for Pattern Classification _____	424
<i>Rajesh Chandrasekhara Panicker and Sadasivan Puthusserypady</i>	
Pruning Neighborhood Graph for Geodesic Distance Based Semi-Supervised Classification _____	428
<i>Chun-guang Li, Jun Guo, and Hong-gang Zhang</i>	
Traffic Signs Detection and Recognition by Improved RBFNN _____	433
<i>Yangping Wang, Jianwu Dang, and Zhengping Zhu</i>	
Extracting Digital Fingerprints from Chinese Documents _____	438
<i>Guo-Hua Liu, Hui-Dong Ma, Xu Li, and Peng Liang</i>	

## Intelligent and Fuzzy Systems

A Model for Fitting the Yield Curve Based on a Continuous Penalty Function _____	442
<i>Xuan Wang and Shi An</i>	
Case-Based Reasoning Combined with Information Entropy and Principal Component Analysis for Short-Term Load Forecasting _____	446
<i>Jinsha Yuan, Li Qu, Weihua Zhang, and Li Li</i>	
MPIDA: A Sensor Network Topology Inference Algorithm _____	451
<i>Tao Zhao, WanDong Cai, and YongJun Li</i>	
Exploring the Relationships between Personal Characteristics, Aims, and Reasons of Learning in Further Education by Associating Rule Mining _____	456
<i>Sheng-Fei Hsu, Dong-Her Shih, and Hui-Ling Yu</i>	

Image Retrieval with Simple Invariant Features Based Hierarchical Uniform Segmentation _____	461
<i>Mingxin Zhang, Zhaogan Lu, and Junyi Shen</i>	
A New Topic Influence Model Research in Online Community _____	466
<i>Jun-bo Gao, Bo-wen An, An-jun Song, and Xiao-feng Wang</i>	
Study of Immune PID Adaptive Controller and Its Applications in Thermal Control System _____	470
<i>Daogang Peng, Hao Zhang, Li Yang, and Longhu Xu</i>	
A Fuzzy Clustering Algorithm Based on Artificial Immune Principles _____	475
<i>Liu Furong, Wang Changhong, X.Z. Gao, and Wang Qiaoling</i>	
Construct a Real-time Selective Neural Group Network Controller for Internet-Based Teleoperation System _____	480
<i>Xiang Li and Yuechao Wang</i>	
Neurodynamic Analysis for Symmetric Schur Decomposition Problems _____	485
<i>Quanju Zhang, Yi Niu, Yajuan Yang, and Wenxue Niu</i>	
Fuzzy Control System Based on Wavelet Analysis _____	490
<i>Rui Wang, Zhaoming Lei, Hexu Sun, and Yi Zheng</i>	
Some Geometric Aggregation Operators Based on Interval-Valued Intuitionistic Fuzzy Sets and their Application to Group Decision Making _____	495
<i>Guiwu Wei and Xiaorong Wang</i>	
Fuzzy Distribution Games with Minimum Risk Criteria _____	500
<i>Bin Sun and Yan-Kui Liu</i>	
Bounds on the Value of Fuzzy Solution to Fuzzy Programming Problem _____	505
<i>Ming-Fa Zheng and Yan-Kui Liu</i>	
On Fuzzy Modulator for the PMSM Step Motion Control _____	510
<i>Zhaoming Lei, Hexu Sun, Yan Dong, and Yi Zheng</i>	
Fuzzy Random Portfolio Selection Problem _____	515
<i>Fang-Fang Hao and Yan-Kui Liu</i>	
A Fuzzy Model of Interval speed Continuous Petri Nets _____	520
<i>Yueying Peng, Weizhi Liao, and Kaoru Hirota</i>	
Selection of Delay Time Window and Delay Time in Phase Space Reconstruction _____	526
<i>Wei-Dong Cai, Yi-Qing Qin, and Bing-Ru Yang</i>	
A Novel Architecture for the Computation of the 2D-DWT _____	531
<i>Kaleem Fatima, Vijay Gopal Sarvepalli, and Zeeshan Nadeem Nakhi</i>	

## VOLUME 2

Order Holon Modeling Method Based on Time Petri-Nets and its Solution with Particle Swarm Optimization _____	536
<i>Fuqing Zhao, Qiuyu Zhang, and Aihong Zhu</i>	
Research on Improving Training Speed of LMBP Algorithm and its Simulation in Application _____	540
<i>Wen-shang Xu, Qing-ming Yu, Yan-liang Sun, and Tian-wen Dong</i>	
A Dish Parallel BP for Traffic Flow Forecasting _____	546
<i>Guo-zhen Tan, Qing-qing Deng, Zhu Tian, and Ji-xiang Yang</i>	
An Improved Neural Network Model for Graduate Education Evaluation _____	550
<i>Bao Qiong, Gu Xingsheng, Shen Yongjun</i>	
Supervised FCNN Classification for Garment Seams _____	555
<i>Yonghui Pan, Fang Bao, and Shitong Wang</i>	
Simulation of T-S Fuzzy Neural Network to UASB Reactor Shocked by Toxic Loading _____	560
<i>Gang Cao, Mingyu Li, and Cehui Mo</i>	
The Off-Line and On-Line Fuzzy Backstepping Controllers for Rotary Inverted Pendulum System _____	565
<i>Mahsa Rahmani, Mahdi Aliyari Shoorehdeli, and Mohammad Teshnehlab</i>	
Dynamic System Modeling with Multilayer Recurrent Fuzzy Neural Network _____	570
<i>He Liu, Dao Huang, and Li Jia</i>	

## Cryptography and Security Techniques

Study of an Adaptive Immune Detection Algorithm for Anomaly Detection _____	574
<i>Ya-jing Zhang, Yi-ming Zhai, Zhen-bin Du, and Dian-tong Liu</i>	
A Method of Fine-Grained Authorization and Access Control for ASP Pages _____	579
<i>Ting Wang, Xingyuan Chen, Bin Zhang, and Lichun Pei</i>	
The Research and Application of Resource Dissemination Based on Credibility and UCON _____	584
<i>Fengying Wang and Fei Wang</i>	
A Flexible Subscription Model for Broadcasted Digital Contents _____	589
<i>Franz Kollmann</i>	
A Biometric Verification System Addressing Privacy Concerns _____	594
<i>Stelvio Cimato, Marco Gamassi, Vincenzo Piuri, Roberto Sassi, Fabio Stelvio Cimato, Marco Gamassi, Vincenzo Piuri, Roberto Sassi, and Fabio Scotti</i>	
A New Forward-Secure Threshold Signature Scheme Based on Schnorr Cryptosystem _____	599
<i>Guosheng Cheng and Cuilan Yun</i>	
A Novel Trust Community Based on Direct Certifying for Pervasive Computing Systems _____	604
<i>Zhiyu Peng, Shanping Li, and Xin Lin</i>	
Audio-Visual Recognition System with Intra-Modal Fusion _____	609
<i>Yee Wan Wong, Kah Phooi Seng, Li-Minn Ang, Wan Yong Khor, Heng and Fui Liau</i>	
An Efficient Credential-Based Scheme for Cross-Domain File Sharing _____	614
<i>Lanxiang Chen and Dan Feng</i>	
An Effective Genetic Algorithm for Self-Inverse S-Boxes _____	618
<i>Hua Chen and Dengguo Feng</i>	
Design of an Instruction for Fast and Efficient S-Box Implementation _____	623
<i>Meifeng Li, Guanzhong Dai, Hang Liu, and Wei Hu</i>	
Pairing-Based Proxy Signature Scheme with Proxy Signer's Privacy Protection _____	627
<i>Zhao Jianjun and Liu Jingsen</i>	
An Improved Key Agreement Protocol Based on Key Association Set for Dynamic Peer Group _____	632
<i>Chuyuan Wei, Ying Hao, Cheng Lv, and Liping Qian</i>	
Efficient Zaps and Signatures of Knowledge _____	637
<i>Chunming Tang, Dingyi Pei, and Zheng-An Yao</i>	
Game-Based Analysis of Multi-Party Non-Repudiation Protocols _____	642
<i>Wang Xueming and Li Xiang</i>	
Forward Security for an Efficient Password-Based Authenticated Key Exchange _____	647
<i>Tingjun Liu, Shuhua Wu, and Yuefei Zhu</i>	
A Note on Shacham and Waters Ring Signatures _____	652
<i>Puwen Wei, Mingqiang Wang, and Wei Wang</i>	
Generalized Synchronization Theorem for Undirectional Discrete Systems with Application in Encryption Scheme _____	657
<i>Ye Ji, Ting Liu, Lequan Min, Geng Zhao, and Xiaohong Qin</i>	
A Provable Secure Key Management Program for Wireless Sensor Network _____	662
<i>Liufei Wu, Yuqing Zhang, and Fengjiao Wang</i>	
A Single Key MAC Based on Hash127 _____	667
<i>Jin Xu and Dayin Wang</i>	
To Solve the High Degree Congruence $x^n \equiv a \pmod{p}$ in $GF(p)$ _____	672
<i>Shenghui Su and Shuwang Lv</i>	
Improvement on a Generalized Scheme of Proxy Signature Based on Elliptic Curves _____	677
<i>Zuowen Tan</i>	
A Robust Estimator for Evaluating Internet Worm Infection Rate _____	682
<i>Yan Deng, Guanzhong Dai, and Shuxin Chen</i>	
A Typical Set Method of Intrusion Detection Technology Base on Computer Audit Data _____	687
<i>Duan Xuetao, Jia Chunfu, and Fu Yubing</i>	



A Context-Based Analysis of Intrusion Detection for Policy Violation _____	692
<i>Kaiyu Wan, Vasu Alagar, and Zong Yuan Yang</i>	
DDoS Attack Detection Based on RLT Features _____	697
<i>Tu Xu, Dake He, and Yu Luo</i>	
Scenario Discovery Using Abstracted Correlation Graph _____	702
<i>Safaa O. Al-Mamory and Hong Li Zhang</i>	
A Parameter Selection Approach for Mixtures of Kernels Using Immune Evolutionary Algorithm and its Application to IDSs _____	707
<i>Chun Yang, Haidong Yang, and Feiqi Deng</i>	
A Hybrid Approach for Real-Time Network Intrusion Detection Systems _____	712
<i>Sang Min Lee, Dong Seong Kim, and Jong Sou Park</i>	
Research on the Resilience of Key Management in Sensor Networks _____	716
<i>Yulong Shen, Jianfeng Ma, and Qingqi Pei</i>	
A New Centralized Group Key Distribution and Revocation in Sensor Network _____	721
<i>Tegshbayar Gerelbayar and Jong Sou Park</i>	
An Efficient Identity-Based Short Signature Scheme from Bilinear Pairings _____	725
<i>Hongzhen Du and Qiaoyan Wen</i>	
A Tight Security Reduction Identity-Based Signature Scheme _____	730
<i>Li Kang, Xiaohu Tang, Xianhui Lu, and Jia Fan</i>	

## System Security and Management

Security Assurance for Dynamic Role Mapping in a Multi-Domain Environment _____	735
<i>Cuihua Zuo, Ruixuan Li, Hongmu Han, and Zhengding Lu</i>	
Toward Assessing Vulnerability and Risk of Sensor Networks under Node Compromise _____	740
<i>Dong Seong Kim, Yoonk Kyung Suh, and Jong Sou Park</i>	
A Security Model for Networked Manufacturing System _____	745
<i>Lujiong Wang, Aiping Li, and Liyun Xu</i>	
An Email Geographic Path-Based Technique for Spam Filtering _____	750
<i>Yu Jiang, Ni Zhang, and Binxing Fang</i>	
An Improved DAD Check Scheme MLD-Based in FHMIPv6 _____	754
<i>Wei Sun, Lin Chen, and Jian Song</i>	
An Efficient Survivability Hierarchy Analysis Model for Networked Information System _____	759
<i>Lejun Zhang, Lin Guo, Wu Yang, Wei Wang, and Yongtian Yang</i>	
Testing Approach of Component Security Based on Fault Injection _____	763
<i>JinFu Chen, Yansheng Lu, and Xiaodong Xie</i>	
A Novel Approach to Network Security Situation Awareness Based on Multi-Perspective Analysis _____	768
<i>Zhang Yong, Tan Xiaobin, and Xi Hongsheng</i>	
A Quantitative Evaluation Model for Network Security _____	773
<i>Dapeng Man, Wu Yang, Yongtian Yang, Wei Wang, and Lejun Zhang</i>	
A Period-Finding Method for Shor's Algorithm _____	778
<i>Weiqiang Zhang, Chen Xu, Feipeng Li, and Jiqiang Feng</i>	
Hidden-ID Authentication Scheme and its SVO-Logic Based Formal Analysis _____	781
<i>Jin Jiang, Lei Li, and Zhihong Huang</i>	
Research of Software Reliability Based on Synthetic Architecture _____	785
<i>Jun Wang, Jun Liu, and Weiru Chen</i>	
An EMAIL Based Automated Trust Negotiation Model _____	789
<i>Zhensong Liao, Hai Jin, Deqing Zou, and Chisong Li</i>	
An Artificial Intelligence Based Approach for Risk Management Using Attack Graph _____	794
<i>Somak Bhattacharya and S.K. Ghosh</i>	

Game Theory Based Optimization of Security Configuration _____	799
<i>Jin Shi, Yin Lu, and Li Xie</i>	
Adaptive Trust Management in MANET _____	804
<i>Feng Yunfang</i>	
A New Provably Secure Authentication and Key Agreement Mechanism for SIP Using Certificateless Public-Key Cryptography _____	809
<i>Fengjiao Wang and Yuqing Zhang</i>	
A Model of Hierarchical Key Assignment Scheme with CRT _____	815
<i>Jing Zhao, Zhigang Zhang, and Maozhi Xu</i>	
A Game Theoretic Method for Decision and Analysis of the Optimal Active Defense Strategy _____	819
<i>Wei Jiang, Hong-Li Zhang, Zhi-Hong Tian, and Xin-Fang Song</i>	
Handling Information Release and Erasure in Multi-Threaded Programs _____	824
<i>Li Jiang, Lingdi Ping, and Xuezheng Pan</i>	
A Quantitative Security Model of IMS System _____	829
<i>Xiaofeng Qiu, Ning Zhi, and XinXin Niu</i>	
An Efficient Authentication Strategy for Reprogramming of Sensor Networks _____	833
<i>Jin Tan, JinTan Chen, and YanQiu Liu</i>	
Protecting XML Databases against Ontology-Based Inference Attack _____	838
<i>Lu Yang, Xiao Junmo, and Liu Jing</i>	
Image Encryption Algorithm of Double Scrambling Based on ASCII Code of Matrix Element _____	843
<i>Guodong Ye, Xiaoling Huang, and Changqing Zhu</i>	
SEA: Secure Encrypted-Data Aggregation in Mobile Wireless Sensor Networks _____	848
<i>Shih-I Huang and Shiuhyng Shieh</i>	
Multi-Perspective Quantization Model for Cyberspace Security Situation Awareness _____	853
<i>Tan Xiaobin, Zhang Yong, and Xi Hongsheng</i>	
Reinforcing Business Leaders' Role in Striving for Information Security _____	858
<i>Juhani Anttila</i>	

## Security Applications

Secure and Flexible Digital Rights Management in a Pervasive Usage Mode _____	863
<i>Ma Zhaofeng, Yang Yixian, and Niu Xinxin</i>	
Controlled Secret Leakage _____	868
<i>Tianjie Cao, Shi Huang, Hui Cui, Yipeng Wu, and Qihan Luo</i>	
A New Method Considering Creditability Degree and Connection of Buyers and Sellers in E-Broker System _____	873
<i>Shaomin Zhang and Wei Wang</i>	
Modified Original Smart Cards and Smart Card Clone Countermeasures _____	878
<i>Alfredo De Santis and Claudio Soriente</i>	
Design of a New Selective Video Encryption Scheme Based on H.264 _____	883
<i>Yajun Wang, Mian Cai, and Feng Tang</i>	
CMS System of DRM Technology Base that Use Web Contents Certification Code _____	888
<i>Young-bok Cho, Yong-zhen Li, Ning Sun, and Sang-Ho Lee</i>	
A Context-Aware Trust Establishment and Mapping Framework for Web Applications _____	892
<i>Yong Wang, Ming Li, Jingfeng Xue, Jingjing Hu, Longfei Zhang, and Lejian Liao</i>	
A Digital Fingerprint Coding Based on Turbo Codes _____	897
<i>Zhiguang Zhang, Xiaosu Chen, and Miao Zhou</i>	
A Stream Cipher Engine for Ad-Hoc Security _____	902
<i>Masa-aki Fukase and Tomoaki Sato</i>	
Secure Hop-Count Based Localization in Wireless Sensor Networks _____	907
<i>Yingpei Zeng, Shigeng Zhang, Shanqing Guo, and Xie Li</i>	

A Scheme for Protecting Mobile Agents Based on Combining Obfuscated Control Flow and Time Checking Technology _____	912
<i>Jiehong Wu, Yujie Zhang, Xiaowei Wang, and Guiran Chang</i>	
Identity-Based Key Issuing Protocol for Ad Hoc Networks _____	917
<i>Yongjun Ren, Jiandong Wang, Youdong Zhang, and Liming Fang</i>	
A New Statistical Hitting Set Attack on Anonymity Protocols _____	922
<i>Jing Liu, Hong-yun Xu, and Cheng Xie</i>	

## Watermarking and Information Hiding

Research on Video Watermarking Scheme Based on Chaos, DWT and JND Model _____	926
<i>Shu-Guo Yang, Sheng-He Sun, and Chun-Xia Li</i>	
Robust Watermark Model Based on Subliminal Channel _____	931
<i>Cheng Yang, Jianbo Liu, and Yaqing Niu</i>	
Two-Dimensional Wavelet Filters for Watermarking _____	935
<i>Jianwei Yang, Wenbing Chen, and Guosheng Cheng</i>	
Analysis on the Sensitivity Attack to Watermarking Schemes with Patchwork Detection Boundaries _____	940
<i>Qiyang Zhao, Zhonglin Wang, and Baolin Yin</i>	
A Blind Video Watermarking Algorithm Based on 3D Wavelet Transform _____	945
<i>Da-Wen Xu</i>	
Adaptive Encrypted Information Hiding Scheme for Images _____	950
<i>Bin Zhao, Kai Fan, Yue Wang, and Weidong Kou</i>	

## Other Applications

Using Chain Graphical Model to Analyze the Efficacy of a Chinese Medicine _____	954
<i>Hui Zhao and Zhongguo Zheng</i>	
Gene Selection Using Neighborhood Rough Set from Gene Expression Profiles _____	959
<i>Shulin Wang, Huowang Chen, and Shutao Li</i>	
An Improved Algorithm for Iris Location _____	964
<i>Zhifang Wang, Xuehu Yan, Shenhong Chen, and Xiamu Niu</i>	
Dynamical Behavior of Three-Order Cellular Neural Network with Application in Image Secure Communication _____	968
<i>Fei Xiang, Huijuan Xiao, Shuisheng Qiu, and Chengliang Deng</i>	
Generalized Synchronization Theorem for Non-Autonomous Differential Equation with Application in Encryption Scheme _____	972
<i>Ting Liu, Ye Ji, Lequan Min, Geng Zhao, and Xiaohong Qin</i>	
The Representation of Chinese Semantic Knowledge and its Application in the Document Copy Detection _____	977
<i>Xu Li, Guo-Hua Liu, Hui-Dong Ma, and Lei Wang</i>	
Defaults Assessment of Mortgage Loan with Rough Set and SVM _____	981
<i>Bo Wang, Yongkui Liu, Yanyou Hao, and Shuang Liu</i>	
Optimistic Design of Jetty Road Height Based on Genetic Algorithms _____	986
<i>Yan-Long Qin, Ming-Chang Li, Zhao-Chen Sun, Yu-Xia Yang, and Hai-Bin Xu</i>	
Calculation and Analysis of Double-Fed VSCF Induction Generator Operating Performance _____	991
<i>Peng Cheng, Weili Li, Wenbiao Chen, and Deyuan Xia</i>	
Research on Refining Mesh of Ship Hatch Corner Based on Transition Element _____	995
<i>Pei-lin Liu, Feng Li, and Yi-jun Tan</i>	
Speech Tagging Based Improvement of the RSS Polymerization News _____	1000
<i>Ying Bi, Peijun Ma, Yixin Jing, and Doo-Kwon Baik</i>	

Low-Complexity Line-Based Motion Estimation Algorithm _____	1005
<i>Li Wern Chew, Li-Minn Ang, and Kah Phooi Seng</i>	
A Particle Swarm Optimization for Resource-Constrained Multi-Project Scheduling Problem _____	1010
<i>Deng Linyi and Lin Yan</i>	
A Data Engine for Controller Area Network _____	1015
<i>Weiming Tong, Chengde Tong, and Yong Liu</i>	
A Supply Chain Network Design Model for Deteriorating Items _____	1020
<i>Kai Tang, Chao Yang, and Jun Yang</i>	
The Study of Compost Quality Evaluation Modeling Method Based on Wavelet Neural Network for Sewage Treatment _____	1025
<i>Jingwen Tian, Meijuan Gao, Yanxia Liu, and Hao Zhou</i>	
Structural Analysis of Printed Mathematical Expression _____	1030
<i>Xue-dong Tian, Si Wang, and Xiao-yu Liu</i>	
System Level Assertion-Based Verification Environment for PCI/PCI-X and PCI-Express _____	1035
<i>Min An Song</i>	
Design of Automatic Database Schema Generator Based on XML Schema _____	1039
<i>JongSeon Lim, KyungSoo Joo, KyungSoo Kim, and MunYoung Choi</i>	
Application of Least Squares-Support Vector Machine for Measurement of Soluble Solids Content of Rice Vinegars Using Vis/NIR Spectroscopy _____	1044
<i>Fei Liu, Yong He, and Li Wang</i>	
Test Case Automate Generation from UML Sequence Diagram and OCL Expression _____	1048
<i>Bao-Lin Li, Zhi-shu Li, Li Qing, and Yan-Hong Chen</i>	
A Novel Cluster-Based Routing Algorithm in Ad Hoc Networks _____	1053
<i>Dongni Li</i>	
Estimation of System Power Consumption on Mobile Computing Devices _____	1058
<i>Niu Limin, Tan Xiaobin, and Yin Baoqun</i>	
Cluster-Based System-Level Fault Diagnosis in Hierarchical Ad-Hoc Networks _____	1062
<i>Dongni Li</i>	
An Energy Efficient Directed Diffusion Routing Protocol _____	1067
<i>Shousheng Zhao, Fengqi Yu, and Baohua Zhao</i>	
<b>Author Index _____</b>	<b>1072</b>