2010 International Conference on **Computational Intelligence and Security**

(CIS 2010)

Nanning, Guangxi, China 11 – 14 December 2010



IEEE Catalog Number: CFP1022B-PRT ISBN:

978-1-4244-9114-8

2010 International Conference on Computational Intelligence and Security

CIS 2010

Table of Contents

Preface	XVi
Conference Organization	xvii
Program Committee and Additional Reviewers	xviii
Fuzzy and Intelligent Systems	
Chinese Sentiment Orientation Analysis	1
A Scenario-Based Architecture for Reliability Design of Artificial Intelligent Software Juguo Wang, Guoqi Li, and Yun Pu	6
The Analysis of Yeast Cell Morphology Using a Robot Scientist	10
IMP-Filters of R0-Algebras	15
Intelligent Digital Photo Management System Using Ontology and SWRL	18
New Results on H∞ Filter Design for Continue-Time Systems with Time-Varying Delay Yating Wang, Wuneng Zhou, Jinliang Liu, and Da Luo	23
Synchronization Algorithm for Multi-hop in Wireless Sensor Networks Hong Yao and Wuneng Zhou	28
Tool Wear Detection Based on Wavelet Packet and BP Neural Network	33
Neural Network Method for Solving Linear Fractional Programming	37

Data Mining

Semantic Modeling: Computational Models of the Concepts	42
A Fast HITON_PC Algorithm	47
An Algorithm of Dynamic Associate Rule Based on Sliding Windows	51
Online Segmentation Algorithm for Time Series Based on BIRCH Clustering Features	55
Yu Tu, Yubao Liu, and Zhijie Li	
A New Clustering Algorithm Based on Normalized Signal for Sparse Component Analysis	60
Jun-jie Yang and Hai-lin Liu	
Dynamic Fluzzy Clustering Algorithm for Web Documents Mining	64
A Novel GEP-Based Multiple-Layers Association Rule Mining Algorithm	68
Credit Card Customer Segmentation and Target Marketing Based on Data Mining	73
Wei Li, Xuemei Wu, Yayun Sun, and Quanju Zhang	
A Improved Fuzzy K-Subspace Clustering and Its Application in Multiple Dominant Sparse Component Analysis	77
The Study of Credit Risk Evaluation Based on DEA Method	8′
An Efficient Semantic Similarity Search on XML Documents	86
Evolutionary Computation	
Research on Feature Extraction Based on Genetic Algorithm in Text Categorization	91
Juan Zou and Jinhua Zheng The Comparison of Two Kinds of Bonroduction in Multiphicative Optimization	0.0
The Comparison of Two Kinds of Reproduction in Multiobjective Optimization	95
A Hybrid Approach for Solving Nonlinear Bilevel Programming Problems Using Genetic Algorithms Hecheng Li and Yuping Wang	100

A New Kind of Handling Constraint Method for Optimization	104
An Algorithm of Collision Detection Based on Hybrid Model	109
An Improved Genetic Algorithm for Job Shop Scheduling Problem	113
Industrial Clusters Evolution Research Based on the SGA	117
Hybrid Genetic Algorithm for the Multi-objective Flexible Scheduling Problem	122
An EOG Artifacts Correction Method Based on Subspace Independent Component Analysis	127
Evolutionary Algorithm for Zero-One Constrained Optimization Problems Based on Objective Penalty Function	132
A Novel Weight Design in Multi-objective Evolutionary Algorithm	137
A New Evolutionary Algorithm Based on Simplex Crossover and PSO Mutation for Constrained Optimization Problems	142
A New Genetic Algorithm and Its Convergence for Constrained Optimization Problems Dalian Liu, Chunfeng Xing, and Xuehai Shang	147
A Genetic Algorithm Based on Modularity Density for Detecting Community Structure in Complex Networks Chen Guoqiang and Guo Xiaofang	151
The Application of Dominant-Recessive Diploid Codes in MOGA	155
A Multi-objective Genetic Algorithm Approach Based on the Uniform Design Metmod	160
Xiaoshu Ma, Jing Huo, and Qun Wang	
Improved Electromagnetism-Like Mechanism Algorithm for Constrained Optimization Problem	165
A New Multi-objective Differential Evolution Algorithm	170

Multi-objective Optimization Problems	174
The Particle Swarm Optimization with Decaying ICMIC for Shortest Path Computation in Computer Networks	179
A Revised Discrete Particle Swarm Optimization for Cloud Workflow Scheduling	184
A Novel Hybrid Particle Swarm Optimization for Feature Selection and Kernel Optimization in Support Vector Regression	189
A Swarm Intelligence Algorithm Based on Boundary Mutation	195
Research on Double Objective Optimization of Master Production Schedule Based on Ant Colony Algorithm	200
Airport Taxi Scheduling Optimization Based on Genetic Algorithm	205
A Multi-agent Social Evolutionary Algorithm for Resource-Constrained Project Scheduling	209
Support Vector Machines and Learning Algorithms	
Existence of the Solution for General Complementarity Problems	214
Prediction Discrete Data Used BP Network Based on AGO	218
Motion Segmentation Using Central Distance Features and Low-Pass Filter	223
Performance Analysis Based on Transform Matrix of MLE in CICA	227
Privacy-Preserving Classification on Horizontally Partitioned Data Tian Tian, Duan Hua, and He Guoping	230
An Improved Side Information Generation Scheme for Wyner-Ziv Video Coding	234

Pattern Recognition

A Streamline Placement Method Highlighting Flow Field Topology Wenyao Zhang, Bo Sun, and Yi Wang	238
A Real-Time Pineapple Matching System Based on Speeded-Up Robust	
Features Bin Li, Maohua Wang, and Li Li	243
Unsupervised Image Change Detection Based on 2-D Fuzzy Entropy	248
Motion Analysis Based on Spatial-Temporal Visual Attention	253
A New Volume Rendering Algorithm of Data Field	258
The Research on Multi-viewpoint Navigation Based on Spherical Panoramic	
Images Xiong Shi, Xiaofeng Feng, and Jun Chen	261
A Novel Image Classification Method Based on Double Manifold Learning	265
An Improved DLDA Based Method- Nonparametric DLDA HuoRong Ren, ChunXiao Li, and HaiZhen Wang	270
An Adaptive Feature Extraction Method for Motor-Imagery BCI Systems	275
Essence of Two-Dimensional Principal Component Analysis	280
Infrared Face Recognition Based on Blood Perfusion and Weighted Block-DCT in Wavelet Domain He Cuiqun, Liu Guodong, and Xie Zhihua	283
DST Feature Based Locality Preserving Projections for Face Recognition	288
Access Control and Block/Stream Ciphers	
Efficient Client Puzzle Schemes to Mitigate DoS Attacks	293
On Trust Degree-Based Usage Control in DRM System	298
A Protocol of Secure Multi-party Multiplication Based on Bilinear Pairing	302

Research on Validity Evaluation of Mandatory Access Control Policy	
under LSM Framework	306
A Scheme for Confidentiality Protection of OpenID Authentication Mechanism	310
Constructions of Maiorana-McFarland's Bent Functions of Prescribed Degree Feng-rong Zhang, Yu-pu Hu, Hua Ma, and Min Xie	315
Correlation Power Analysis Against Stream Cipher MICKEY v2	320
Cryptosystems and Cryptanalysis	
Game-Based Analysis and Improvement of a Fair Contract Signing Protocol	325
Automated Static Code Analysis for Classifying Android Applications Using Machine Learning	329
Security Flaws and Improvements to a Direct Anonymous Attestation Scheme for Mobile Computing Platforms	334
Proxy Re-encryption from CLE to CBE	339
A New Threshold Signature Scheme to Withstand the Conspiracy Attack	343
Asymmetric Group Key Agreement with Traitor Traceability	347
Convertible Perfect Concurrent Signature Protocol	352
Tripartite Key Agreement Protocols Based on Digital Certification	357
Differential Fault Analysis on PRESENT Key Schedule	362
Improved Differential Cryptanalysis of Serpent	367
A Fully Anonymous Identity-Based Signcryption Scheme in the Standard Model	372
Hao Wang, Qiuliang Xu, Han Jiang, and Xiufeng Zhao	
New CCA-Secure Proxy Re-encryption Scheme without Random Oracles	377

Lattice-Based Proxy Signature	382
Yali Jiang, Fanyu Kong, and Xiuling Ju	
A New Technique of Anti-tampering Technology Based on AVS Video	386
Some New Optimal Pairings He Shang and Mingqiang Wang	390
Non-Adjacent Form Recursive Algorithm on Elliptic Curves Cryptograph	394
Security Management	
Target-Acquisition-Performance-Model-Based Quality Metric for Multisensor Image Fusion	398
Yang Cui, Li Qian, Wu Jie, and Zhang Jianqi	
A Neural Network Clustering Based Algorithm for Privacy Preserving Data Mining	401
Stergios G. Tsiafoulis and Vasilis C. Zorkadis	
Data Hiding in Block Truncation Coding	406
Continuous Verification Using Keystroke Dynamics	411
A Naive Feature Selection Method and Its Application in Network Intrusion Detection	416
Tieming Chen, Xiaoming Pan, Yiguang Xuan, Jixia Ma, and Jie Jiang	
(2, n) Secret Image Sharing Scheme with Ideal Contrast	421
Risk Assessment Model of Ship Integrated Navigation System Based on Fuzzy Artificial Neural Network	425
A Method to Prevent CW Sharing in DTV CAS	429
Energy Based Robust Video Hash Algorithm	433
Chaotic Synchronization with Single-Ring Erbium-Doped Fiber Laser Systems	437
Identity Authentication Based on Fuzzy Vault and Digital Certificate	441
USB Key-Based Dual-Factor Dynamic Authentication Scheme	446

Game Analysis of Non-trusted Threshold Authentication Scheme Jie Wang and Yong-quan Cai	450
Network & Wireless Security	
The Bipanconnectivity and Hamiltonian-Connectivity of Enhanced Hypercube	454
A Reliable Service Quality Evaluation Model in the Web Services Community	457
An Adaptive Evaluation Model of Web Service Based on Artificial Immune Network	461
Wei-Tao Ha and Li-Ping Chen	
A Sheme of Mobile Platform Based on Trusted Computing	465
Securing GPRS Tunnel Protocol in 3G Core Network	469
Cluster Features of Bluetooth Mobile Phone Virus and Research on Strategies of Control & Prevention	474
A Sub-spectrum Sensing Scheme Based on Reputation in Cognitive Radio Networks	478
Secure Communication Model of WSN Based on Secret Sharing	483
Efficient and Reliable Broadcast Protocol for Clustered Wireless Sensor Networks JiangHong Guo and ZhiChu Zhong	488
Research on Wireless Sensor Network Security	493
Computing the Scattering Number of Bicyclic Graphs	497
On the Reliability of Unicyclic Networks with Vertex Failure	501
Observer-Based Adaptive Neural Network Robust Control of Nonlinear Time-Delay Systems with Unmodeled Dynamics	506
Robust Adaptive Neural Control for a Class of Stochastic Nonlinear Systems	511

Analysis of Fuzzy Membership Function Generation with Unsupervised	
Learning Using Self-Organizing Feature Map	515
Implementation and Improvement of Simulated Annealing Algorithm in Neural	
Net	519
Guo Jianlan, Chen Yuqiang, and Hu Xuanzi	
Efficient and Secure Authentication Protocol for VANET	523
TinyStream: A Lightweight and Novel Stream Cipher Scheme for Wireless Sensor Networks	528
Tieming Chen, Liang Ge, Xiaohao Wang, and Jiamei Cai	
Soft Information Improvement for PN Sequence Iterative Acquisition	533
Secure Signcryption Scheme Based on a Hybrid Encryption	537
Security Models and Methodologies	
P2P-Based Semantic Policy Infrastucture for Pervasive Computing	541
Design and Implementation of Object-Oriented Encryption Storage System Based on Trusted Computing Platform Junjian Chen, Jingning Liu, and Dan Feng	546
AMVPayword: Secure and Efficient Anonymous Payword-Based Micropayment Scheme	551
The Approach of ACARS Data Encryption and Authentication	556
Violence Detection in Movies with Auditory and Visual Cues	561
Other Applications	
Study on Commercial Bank Branches Performance Evaluation Using Self-Adaptive RBFNN and UDM Diao XiaoHua and Kang Shiying	566
An Improved Fog-Degrading Image Enhancement Algorithm Based on	
the Fuzzy Contrast	570
An Automatic Evaluation Method for Chinese Name Recognition	574

Probability Based Approach for Target Detection and Pose Estimation in Infrared Images	577
Weiguang Liu and Hailing Lai	
A Kind of Vector Space Representation Model Based on Semantic in the Field of English Standard Information	582
An Approach to Maximum Lifetime Multicast Delivery in Wireless Ad-Hoc Networks	586
Dingde Jiang, Xingwei Wang, Zhengzheng Xu, and Zhenhua Chen	
Discrete Bayesian-Based Scheme of Software Reliability Demonstration Testing with Decreasing Function for the Safety Critical Software	591
Generalized Additive Models of DEA and Generalized Non-Dominated Solution in Multi-objective Programming	596
Ship 3D Collaborate Design Integration System Research	601
An Efficient Solver for Differential Equations with Random Inputs	606
Capability Simulating Model for Complex Communication Network	611
Outward Foreign Direct Investment and Industry Structural Optimization: Analysis and Testing on Data of Republic of Korea	614
Research on Game Algorithm for Zhang Chess	619
Design Verification of BJUT Library Management System with PVS	624
A Method to Find Chromatically Unique Multipartite Graphs	629
Graph-Based Answer Passage Ranking for Question Answering	634
Automatic Speech Corpus Construction from Broadcasting Speech Databases	639
A Reputation Calculation Model in E-Shopping Websites	644
Stock Index Futures Margin Level Settings by Hill Estimation and Empirical Analysis	649

Feng Tianxiang, He Dingxiu, and Liu Hongxia Research of Signal Frequency Domain Resolution Based-EMD Meng Hou, Zeng-Li Liu, Haiyan Quan, and Yong-de Zhang	671
A BCH Code with the Distance 11 for Sensornets	676
Image Denoising Using Nonseparable Wavelet and SURE-LET	680
Author Index	685