

8th Joint Conference on Information Sciences 2005

(JCIS 2005)

**Salt Lake City, Utah
21 – 26 July 2005**

Volume 1 of 3

ISBN: 978-1-60560-322-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2005) by Joint Conference on Information Sciences
All rights reserved.

Printed by Curran Associates, Inc. (2009)

For permission requests, please contact Paul P Wang
at the address below.

Paul P Wang
2709 Montgomery Street
Durham, NC 27705

ppw@ee.duke.edu

TABLE OF CONTENTS

VOLUME 1

KEYNOTE PAPERS

Visions of Engineering in the New Global Economy	1
<i>Borko Fuhr</i>	
Perception Logic in Intelligent Systems	3
<i>Andrzej Skowron</i>	

FEATURED PAPERS

Trusting Answers from Web Applications	9
<i>Deborah McGuinness</i>	
Applied AI in Complex Systems: Examples and Lessons Learned	13
<i>Da Ruan</i>	

10TH INTERNATIONAL CONFERENCE ON FUZZY THEORY AND TECHNOLOGY (FTT)

FTT-1: FUZZY MATHEMATICAL STRUCTURES I

Automorphisms of the Algebra of Fuzzy Truth Values I	19
<i>C.L. Walker, E.A. Walker</i>	
Automorphisms of the Algebra of Fuzzy Truth Values II	23
<i>C.L. Walker, E.A. Walker</i>	
Dislocated Fuzzy Metric Spaces and Associated Topologies	25
<i>R. George, M.S. Khan</i>	
Algorithms for Operations on Pinned-Flags	31
<i>B.B. Makanda, V. Murali</i>	
On Idempotent Fuzzy Vector Spaces	35
<i>A.R. Meenakshi</i>	
Inclusion-Exclusion Principle for Fuzzy Sets	39
<i>V. Murali</i>	

FTT-2: FUZZY MATHEMATICAL STRUCTURES II

(s,t]-Fuzzy Graphs	43
<i>K.R. Bhutani, J.N. Mordeson, P. Kumar Saha</i>	
Fuzzy Weakest Precondition and Fuzzy Invariants	47
<i>V. Lopez, J. Montero, D. Gomez</i>	
An Extended Kth-Best Approach for Fuzzy Linear Bilevel Problems	53
<i>G. Zhang, J. Lu, R. Steele</i>	
Negations, Strict Monotonic t-Norms and t-Conorms for Finite Ordinal Scales	57
<i>I. Z. Batyrshin, I.I. Batyrshin</i>	

FTT-3: FUZZY DECISION MAKING

A Fuzzy Multicriteria Decision Making for Distribution Center Location Selection	61
<i>T.-C. Chu, S.-S. Liu, W.L. Liu</i>	
Fuzzy Techniques for Personnel Selection	65
<i>L. Canos, V. Liern</i>	
A Modified Model of Decision-Making Based on Lattice-Valued Logic LF(X)	69
<i>J. Ma, S. Chen, Y. Xu</i>	

FTT-4: FUZZY INFORMATION SYSTEMS

Intelligent Information Systems in Enterprise	73
<i>M. Nikravesh</i>	
Fuzzy Attribute Implications as Formulas of Logics with Truth-Evaluated Syntax	81
<i>V. Vychodil</i>	
Fuzzy Attribute Logic: Syntactic Entailment and Completeness	85
<i>V. Vychodil, R. Belohlavek</i>	
Reducing Attribute Implications from Data Tables with Fuzzy Attributes to Tables with Binary Attributes	89
<i>R. Belohlavek, V. Vychodil</i>	
Invariance to Scaling in Formal Concept Analysis of Data with Fuzzy Attributes	93
<i>R. Belohlavek</i>	
A Short Overview of DS_mT for Information Fusion	97
<i>J. Dezert, F. Smarandache</i>	

FTT-5: EXTENSIONS OF FUZZY LOGIC

Single Valued Neutrosophic Sets	101
<i>H. Wang, F. Smarandache, Y. Zhang, R. Sunderraman</i>	
Graded Fuzzy Logic	105
<i>G.-J. Wang</i>	
A New Method for Fuzzy Clustering: Vague Clustering	109
<i>F. Rui</i>	

FTT-6: APPLICATIONS IN MEDICINE AND FORECASTING

Augmentative Fuzzy Cognitive Maps with Case Based Reasoning	113
<i>V.C. Georgopoulos, C.D. Stylios</i>	
Fuzzy Cognitive Map Based Differential Diagnosis System for Dysarthria and Aprax	117
<i>V.C. Georgopoulos, G.A. Malandraki</i>	
Intelligent Reservoir Characterization and Modeling	121
<i>M. Nikravesh</i>	
Flood Forecast Based on Fuzzy Information Analysis	127
<i>L. Feng, X. Zhang</i>	
Cooperative Agent Framework	131
<i>J. Muhammad, L.J. Kohout</i>	

FTT-7: LATTICE-VALUED LOGICS

The Generalized Literals of Linguistic Term Propositional Logic L₆P(X)	135
<i>W. Wang, B. Jiang, Y. Xu</i>	
YinYang Bipolar L-sets and Bipolar L-Fuzzy Sets	139
<i>W.-R. Zhang</i>	
Soft-Resolution Method of Linguistic Hedges Lattice-Valued First-Order Logic	143
<i>L. Zou, P.K. Das, Y. Xu, D. Meng</i>	
Managing Intrusion-Detection Alerts Based on Fuzzy Comprehensive Evaluation	147
<i>C.P. Mu, H.K. Huang, S.F. Tian</i>	

FTT-8: HYBRID INTELLIGENT TECHNIQUES I

Fuzzy Genetic Network	151
<i>G. Resconi</i>	
Application of a Neural Network Approach to Implement a Bivariate Fuzzy Time Series Model	155
<i>K. Huang, H.-K. Yu, Y.-F. Lin</i>	
Negative Evidence and Quantum Mechanics	159
<i>M. J. Wierman</i>	
Fuzzy AR Model Based on Possibility Regression Analysis	163
<i>K. Ozawa, T. Niimura</i>	

FTT-9: HYBRID INTELLIGENT SYSTEMS II (SPECIAL INVITED SESSION)

Voice Recognition Using Modular Neural Networks and Genetic Algorithms 167
P. Melin, F. Gonzalez, G. Martinez

Integrated Development Platform for Intelligent Control Systems Based on Type-2 Fuzzy Logic 171
R. Sepulveda, O. Castillo, O. Montiel, A. Rodriguez

Intelligent Control of Dynamic Systems Using Type-2 Fuzzy Logic and Evolutionary Computing 175
O. Castillo, G. Huesca, F. Valdez

Modular Neural Networks with Fuzzy Sugeno Integral for Human Face and Fingerprint Recognition 179
P. Melin, A. Mancilla, C. Gonzalez, D. Bravo

FTT-10: FUZZY NUMBERS (THEORY)

On the Weighted Interval Approximation of a Fuzzy Number 183
W. Zeng, H. Li, W. Ye

On Strongly Almost Convergent Sequences of Fuzzy Numbers 187
E. Savas

On Fuzzy Real Valued I(p)F sequence space 191
B. Choudhary, B.C. Tripathy

Fuzzy Integration and Luroth's Theorem 199
S.-C. Cheng, J. N. Mordeson

FTT-11: FUZZY NUMBERS (APPLICATIONS)

Arithmetical Operations of Exponential Fuzzy Numbers and Applications 203
C.-C. Wang, S.-H. Chen

A Metaheuristic Portfolio Selection Based on Soft Computing 207
M.J. Canos, V. Liern, J.V. Segura, E. Vercher

An Automated Fuzzy Finite Element Procedure For Frequency Response Function Analysis 211
M. De Munck, D. Moens, W. Desmet, D. Vandepitte

Using Parametric Functions to Solve Systems of Linear Fuzzy Equations 215
A. Vroman, G. Deschrijver, E.E. Kerre

8TH INTERNATIONAL CONFERENCE ON COMPUTER SCIENCE AND INFORMATICS (CSI)

CSI-1: NEW DEVELOPMENTS

An Electron Beam Lithography Method for Curvilinear Microstructure 219
Zhang Yu-Lin

Automatic Addressing for DNA Microarray Images 223
Lili Ma, YangQuan Chen, Dong Chen, Bart Weimer

Crossing the Objective-Subjective Divide in Information Space Organization 227
Stephen Davies, Roger King

An Efficient Framework for Data Stream Analysis 233
Gianfranco Cellarosi, Claudio Sartori

Comparative Study of Classification Algorithms 239
M Govindarajan, Rm. Chandrasekaran, B. Palaniappan

Researching Into Human-computer Interface for the Remote Supervision of Railway 243
Xu Weixiang, Liu Xumin, Xu Weixiang

CSI-2: DESIGN AUTOMATION

Automatic Generation of Minimal Mismatch Layouts for Capacitors Based on SA 247
Di Long, Xianlong Hong, Sheqing Dong

A Novel Incremental Algorithm for Non-slicing Floorplan with Low Time Complexity 251
Liu Yang, Xianlong Hong, Sheqin Dong, Yuchun Ma

Heterogeneous FPGA Floorplanning Based on Instance Augmentation 255
Rong Liu, Sheqin Dong, Xianlong Hong

Temporal Floorplanning Using Probability Solution Space Smoothing	259
<i>Shuyi Zheng, Sheqin Dong, Xianlong Hong</i>	

CSI-3: COMPUTING TECHNOLOGIES

Sufficient Conditions for Linear Dependency and Independency of Interval Vectors.....	263
<i>Hyo-Sung Ahn, YangQuan Chen</i>	
Achieving Full Parallelism for Cyclo-static Data Flow Graphs with Optimized Buff.....	267
<i>Ratnesh Verma, Dongming Peng</i>	
A Software Architecture Based on High-performance Middleware	271
<i>Jiameng Xie, Hong Peng, Donghui Yang, Zhonghua Zhu</i>	

CSI-4: GAME THEORY I

The Rebirth of Solved Games	275
<i>T. Nakamura, A. Cincotti, H. Iida</i>	
Study on Loop Problem in Opening Database for Chinese Chess Programs.....	281
<i>Jr-Chang Chen, Shi-Jim Yen, Shun-Chin Hsu</i>	
Master-like Opening Strategy in Computer Shogi.....	285
<i>Jun Nagashima, Tsuyoshi Hashimoto, Hiroyuki Iida</i>	
Tree Search in Two-Player Games - Using Bounded Common Interest to Prune.....	289
<i>H.H.L.M. Donkers</i>	

CSI-5: GAME THEORY II

Soft and Hard Connectivity in Go.....	293
<i>Keh-Hsun Chen</i>	
History and Territory Heuristics for Monte Carlo Go.....	299
<i>Bruno Bouzy</i>	
The Separation Game	303
<i>Tristan Cazenave</i>	
The Strategies for Simple One-Point Ko Situation of Computer Go.....	307
<i>Shi-Jie Huang, Shun-Shii Lin, Shi-Jim Yen</i>	

CSI-6: GRAPH THEORY & APPLICATIONS

B-ACO for the Irregularity Sum Problems.....	311
<i>Ay-Hwa Andy Liou, Tzong-Heng Chi, Kun-Yi Lin</i>	
Independent Domination on Graphs with Forbidden Vertices.....	317
<i>William Chung-Kung Yen</i>	
Approximation Algorithms for the Generalized Graph Partitioning Problems with Restrictions.....	321
<i>Jiping Liu, Cheng Zhao, Jian Liang Zhou</i>	
Efficient Approaches for Finding QoS Constrained Paths with Applications for Multicast Routing.....	325
<i>Tzay-Farn Shih, Chao-Cheng Shih</i>	

CSI-7: RELIABILITY AND SECURITY

An Approach in Designing Authorization Layer for Web Services Software Using Sys.....	329
<i>Weider D. Yu, Archana Mansukhani</i>	
Watermarking Spatial Data based on Cloud Modal.....	335
<i>Liu Bin, Hu Qiping LiDeyi</i>	
Research On Markov Chain Model for System Call Anomaly Detection.....	341
<i>QIAN Quan, WANG Xu-fa</i>	
A Low Cost RSA Chip Based on CRT.....	347
<i>Min Wu, Xiaoyang Zeng, Jun Han, Yongxin Ma, Yongyi Wu, Guoquan Zhang</i>	
Designing of RBAC Model For Secure Multiple Domain Environments.....	353
<i>Cungang Yang, Chang N. Zhang, Leon Pan</i>	

CSI-8: NETWORKS & INTERNET SYSTEMS

Recursive Mode Decision for Robust Video Transmission over Wireless Networks	357
<i>Feng Huang, Lifeng Sun, Yuzhuo Zhong</i>	
Design of Web-based Support Systems	363
<i>J. T. Yao</i>	
Achieving QoS for IEEE 802.16 in Mesh Mode	367
<i>Fuqiang Liu, Zhihui ZENG, Jian TAO, Qing LI, Zhangxi LIN</i>	
Implementing Wireless Broadband Digital Network for the Railway Information System	371
<i>Fumin Zou, Zgabgxi Lin, Xinhua Jiang</i>	

CSI-9: FUNDAMENTALS

The Longest Common Increasing Subsequence Problem	377
<i>Yongsheng Bai, Bob P. Weems</i>	
Finding All "Peaks" of a Special "Mountain"	383
<i>Baoqing Jiang, Wei Wang, Yang Xu</i>	
Incremental Refinement of Success Patterns of Logic Programs	387
<i>Lunjin Lu</i>	
A New Motion Editing Algorithm Based on Motion Capture Data	391
<i>Zhihua Chen, Lizhuang Ma, Yan Gao, Xiaomao Wu</i>	
Monitoring Complex Patterns of Events	395
<i>Lilian Harada, Yuuji Hotta</i>	

CSI-10: ARTIFICIAL INTELLIGENCE

Theoretical and Real-Life Reinforcement Learning	399
<i>Leona F. Fass</i>	
The Universal Robotic Service Architecture for Distributed Heterogeneous Robotic	403
<i>Michael Nooner, Han-Chieh Wei</i>	
Resolution Principle Based on Six Lattice-valued First Order Logic L6F(X)	407
<i>Dan Meng, Yang Xu, Huading Jia</i>	
The Scene Structure of Knowledge	411
<i>Yi Wang</i>	

CSI-11: APPLICATIONS

A Novel Variance-based Object Detection scheme for Railroad Ground Penetrating Radar Images	417
<i>Jitesh Batra, Dongming Peng, Robert Palmer</i>	
Internet-based System for Acquisition, Interpretation and Automatic Recognition	421
<i>Andrzej Izvorski, Katarzyna Chmurzynska, Piotr Radkowski, Ireneusz Wochlik</i>	
FPGA-Based Area-Efficient Specific Radar Signal Processor	425
<i>He Chen, Ming Liu, Yueqiu Han</i>	
Integration of a Heuristic Global Optimum Test and DIRECT Algorithm for Mutual I	429
<i>Ting-Hung Lin, Hua-Mei Chen</i>	

7TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL INTELLIGENCE AND NATURAL COMPUTING (CIN)

CIN-1: NEURAL NETWORKS AND LEARNING

Function Approximation Using the Cooperative PSO Neural Network	433
<i>Meiping Song, Guochang Gu, Xingce Wang, Rubo Zhang</i>	
Time Invariance and Liquid State Machines	437
<i>Eric Goodman, Dan Ventura</i>	
Solving Optimal Neural Layout by Gibbs Sampling	441
<i>Tao Jiang, Xu Peng, John S. Baras</i>	
Comparing High-Order Boolean Features	445
<i>Adam Drake, Dan Ventura</i>	

Towards Predicting Multi Million Neuron Interconnectivity involving Dendrites-Soma-Axon-Synapse: A Simulation Model	449
<i>N. Venkateswaran, R.V. Arjun, S.Haswath Narayanan, S. Karthik</i>	

CIN-2: EVOLUTIONARY COMPUTATION AND CONTROL

A Genetic Programming Methodology for the Solution of the Multiobjective Cell - Formation Problem	453
<i>Christos Dimopoulos</i>	
Research on Evolutionary Negative Selection Algorithms	457
<i>Wenjian Luo, Jiying Wang, Xufa Wang</i>	
A Relative Fitness Aware Rank-based Selection Procedure in GA	463
<i>Jiling Zhong, Yan-Qing Zhang</i>	
A Study in Pattern Assimilation for Adaptation and Control	467
<i>Steven Hulet, Brandon Rohrer, Sean Warnick</i>	
Defining Emergent Behavior for Mobile Robots	471
<i>Daniel P. Stormont</i>	

CIN-3: ARTIFICIAL IMMUNE SYSTEMS AND ANT ALGORITHMS

A Quick Regulation Algorithm Based on Immune Feedback Principle	475
<i>Yang Zhao-hua, Fang Jian-Cheng, Qi Zhenqiang</i>	
A General Classification Algorithm Based on Immune Network and Experimental Analyses of its Fault Tolerance Performance	479
<i>Xiaohui Huang, Wenjian Luo, Xufa Wang, Jiying Wang</i>	
An Intelligent Controller Based on Primary-Secondary Responding Mechanism of Immune System	485
<i>Bao Liu, Yongsheng Ding</i>	
Sizing, Shaping, and Topology Optimization of Truss Structure Using Ant Algorithm	489
<i>Guan-Chun Luh, Chun-Yi Lin</i>	
The Multilevel Ant Stigmergy Algorithm: An Industrial Case Study	493
<i>Peter Korosec, Jurij Silc</i>	
Multi-Modal Topological Optimization of Structure Using ACO Algorithm	497
<i>Guan-Chun Luh, Chun-Yin Wu, Chun-Yi Lin</i>	

CIN-4: INTELLIGENT SYSTEMS I

Memorising Remembrances in Computational Modelling of Interrupted Activities	501
<i>Mehdi Najjar, Philippe Fournier-Viger, Andre Mayers, Jean Halle</i>	
Intelligent Agents for Smart Decisions	505
<i>Amol Deshpande</i>	
A SOMO-based Recommendation System	509
<i>Mu-Chun Su, Chao Yu Chen, Yu-Xiang Zhao</i>	
A Fuzzy Neural Network Recognition Model of Home Network Events	513
<i>Huey-Ming Lee, Ching-Hao Mao, Shu-Yen Lee, Jan-Jo Chen</i>	
Intelligent Systems for Production Scheduling in High-Mix Low-Volume Manufacturing	517
<i>Ahad Ali</i>	

6TH INTERNATIONAL WORKSHOP ON FRONTIERS IN EVOLUTIONARY ALGORITHMS (FEA)

FEA-1

The Human Evolutionary Model: a New Approach for Solving Nonlinear Optimization Problems	521
<i>Oscar Montiel, Oscar Castillo, Patricia Melin, Antonio Rodriguez, Roberto Sepulveda</i>	
Automatic Program Generation Based on the Swarm	525
<i>Tim Charnecki, Donald Cooley</i>	
Evolutionary Optimization of Filter Parameters for Image Segmentation	529
<i>T Rupe, Jennifer Leopold, Anne Maglia, Daniel Tauritz</i>	
Evolutionary Optimization of Flexible AC Transmission System Device Placement	535
<i>John Chaloupek, Daniel R. Tauritz, B. McMillin, M.L. Crow</i>	
Multi-objective Genetic Algorithm for Semi-fragile Watermarking	539
<i>Diego Sal, Manuel Grana</i>	

A New Hypothesis on the Evolutionary Advantage of Sexual Reproduction	543
<i>Robert Lin</i>	
Genetic Algorithms for Multicast Routing with Multiple QoS Requirements	547
<i>Qijun Gu, Chao-Hsien Chu</i>	

FEA-2

Select and Accept	551
<i>Maria Cristina Peixoto Matos, Manuel Alberto M. Ferreira</i>	
Triplet Lens Design Using Hybrid Coded NSGA2	555
<i>Shaine Joseph</i>	
Evolution of Complex Systems	559
<i>Imrich Rukovansky</i>	
Evolution of Fitness-value Distribution : a Visual and Quantitative Investigation	563
<i>Sajalendu Dey</i>	
Multi-scale Stroke-based Rendering by Evolutionary Algorithm	567
<i>Hyung W. Kang, Uday K. Chakraborty, Charles K. Chui, Wenjie He</i>	
Design of Two-dimensional Iir Filters with Self-organizing Hierarchical PSO Algorithm	571
<i>Swagatam Das, Amit Konar, Uday K. Chakraborty</i>	

6TH INTERNATIONAL CONFERENCE ON COMPUTER VISION, PATTERN RECOGNITION AND IMAGE PROCESSING (CVP)

CVP-1: IMAGE PROCESSING I

Group Theoretic Approach to Recovery of Omnidirectional Images	575
<i>Amal Aajif, Robert Boyer</i>	
Watermarking with Quality Control for Binary Images	579
<i>Chun-E Zhang, Zheng-Ding Qiu</i>	
Nonlinear Image Restoration Methods Based on Robust Statistics	583
<i>Diye Jia, Fenggang Huang, Han Su</i>	
Image Enhancement by Composite Diffusion Processes	587
<i>Fenggang Huang, Diye Jia, Han Su</i>	
A Novel Approach to Track High-Speed Skater	591
<i>G.J. Liu, H.D. Cheng, X.L. Tang</i>	
A FOCUSS Based Super-resolution Method for ISAR Imaging	595
<i>Ping Cheng, Yicheng Jiang, Rongqing Xu</i>	
A Novel Approach to Illuminant Invariant Color Normalization	599
<i>H. D. Cheng, Xiaopeng Cai</i>	

CVP-2: IMAGE PROCESSING II

Piecewise Fuzzification of the Intensity and Texture Information for Color Image Enhancement	605
<i>H. D. Cheng, Rui Min</i>	
Microarray Image Segmentation and Quantification Using Extended Local Background	609
<i>Kai Zhang, M. Ma, H. Wang, Y. Wang, T. Wang, F. Shih, P. Soteropoulos</i>	
Hilbert-Huang Transform Based Speech Enhancement	613
<i>Liran Shen, XueYao Li, HuiQiang Wang, Rubo Zhang, Qingbo Yin</i>	
A Color Image Segmentation Algorithm and Its Application	619
<i>Miao Zhenjiang, M.-H. Gandelin, Yuan Baozong</i>	

VOLUME 2

Lossy Image Compression with Refactoring Matrices	623
<i>Ossian O. Vergara Villegas, Raúl Pinto Elías, Marcos A. Capistrán Ocampo</i>	
Precise Searching and Segment of the Hand and Fingers on Gesture Recognition	627
<i>Zhou Hang, Ruan Qiuqi</i>	

CVP-3: IMAGE PROCESSING III

Scalable Authentication Watermarking with High Precise Based on Chaotic Sequence	631
<i>Rongrong Ni, Qiuqi Ruan, H.D. Cheng</i>	
Homogeneity-based Image Watermarking	635
<i>Rongrong Ni</i>	
Compact Fingerprints for Image Authentication Based on PCA of DCT Coefficients	639
<i>Sheng Tang, Jin-Tao Li, Yong-Dong Zhang</i>	
A Coupled Bidirectional Flow for Feature Preserving Image Interpolation	643
<i>Shujun Fu, Heng-Da Cheng, Qiuqi Ruan, Wenqia Wang</i>	
Contour Extraction Based On Minimum Description Length	647
<i>Wen Furong, Yuan Baozong, Tang Xiaofang</i>	

CVP-4: IMAGE PROCESSING IV

Precise Gridding of Microarray Images by Detecting and Correcting Rotations in Subarrays	651
<i>Yu Wang, Frank Y. Shih, Marc Q. Ma</i>	
Multi-category SVMs-based Image Categorization	655
<i>Yutao Han, Xiaojun Qi</i>	
Analysis of Time-frequency Conglomeration of Hilbert-huang Transform	659
<i>Zhang Haiyong, Zhu Lijuan, Zou Yankun</i>	
A New Approach for Nonlinear Distortion Correction in Computer Vision Images	663
<i>Zhang Yanqing, Wang Zhiyan, Wang Bin</i>	
A Novel Markov Random Field Segmentation Algorithm and Its Application to Breast Ultrasound Image Analysis	667
<i>H. D. Cheng, Liming Hu, Jiawei Tian, Litao Sun</i>	

CVP-5: PATTERN RECOGNITION I

External Forces for Snakes	671
<i>F. Turki, C. Ben Amar</i>	
A Hierarchical Face Recognition Framework Based on Integrating Template Matching	677
<i>Feng Xie, Guangyou Xu, Linmi Tao</i>	
Using the Hough Transform to Determine the Roundness (Smoothness) of Rock Partic	681
<i>G R Drevin</i>	
Mass Classification Based on Texture Features in Breast Ultrasound Image	687
<i>Heng-Da Cheng, Xiangjun Shi</i>	

CVP-6: PATTERN RECOGNITION II

Face Detection Using Hierarchical Integral Projections	691
<i>Ming Li, Baozong Yuan, Ming Liu</i>	
Generating Fuzzy Rules for Classifier Fusion	695
<i>Ming Liu, Baozong Yuan, Xiaofang Tang, Ming Li</i>	
I2D-PCA: An Efficient Subspace Method with Its Application to Palmprint Identification	699
<i>Qiang Li, Zhengding Qiu, Dongmei Sun</i>	
Face Recognition Using ICA and Class Information	703
<i>Lidan Zhang, Fenggang Huang, XianWei Li</i>	
Machine Printed Arabic Character Recognition Using S-GCM	707
<i>Liyang Zheng, Xianglong Tang</i>	
Automatic Detection of Microcalcification Clusters Using Fuzzy Logic and Wavelet	711
<i>H.D. Cheng, X.Y. Liu, X. J. Shi</i>	

CVP-7: COMPUTER VISION

Compensation for Automatic White Balance Correction with Histogram Equalization	715
<i>David Kirtley, Ping-Sing Tsai</i>	
A Novel Approach of Gait Recognition Based on Motion Analysis	719
<i>Han Su, Feng-Gang Huang, Di-Ye Jia</i>	
Morphometric Analysis of 3D Surfaces: Application to Hippocampal Shape in MCI	725
<i>Li Shen, Andrew Saykin, Fillia Makedon</i>	

Study on Similarity Measure of Superquadrics	729
<i>Weiwei Xing, Weibin Liu, Baozong Yuan</i>	
A Camera Calibration Method Based on Nonlinear Model and Improved Planar Pattern	733
<i>Zhang Yanqing, Wang Zhiyan, Wang Shengke</i>	

CVP-8: SOFT-COMPUTING

A High Performance Edge Detector Based on Fuzzy Logic and Inference Rules	739
<i>H. D. Cheng, Liming Hu</i>	
Feature Preserving Image Sharpening Using Fuzzy Bidirectional Flow	743
<i>Shujun Fu, Heng-Da Cheng, Qiuqi Ruan, Wenqia Wang</i>	
Multi-Scale Wavelet-Based Font Recognition of Chinese Character	747
<i>Xueyan Li, Jianhua Huang, Xianglong Tang</i>	
Fuzzy Logic Approach to Breast Ultrasound Image Enhancement	751
<i>Y.H. Guo, H.D. Cheng, J.W. Tian, W. Zhao</i>	
Bone Image Enhancement Based on Fuzzy Techniques	755
<i>Dansong Cheng, Heng-Da Cheng, Xianglong Tang, Zhiguo Yu</i>	

CVP-9: CVPRIP APPLICATIONS

A Comparative Study on Automated Pavement Crack Detection and Classification Systems	759
<i>H. D. Cheng, Liming Hu, Xiangjun Shi, C. Glazier, G. Kuhl</i>	
The Role of Computerized-Aid Diagnosis in Mass Classification Using Ultrasound	763
<i>Jia-Wei Tian, Li-Tao Sun, Yan-Hui Guo, H. D. Cheng</i>	
Dijkstra Algorithm for Accelerating Deformable Template Matching	767
<i>Liu Zhuofu, Liao Zhenpeng, Sang Erfang</i>	
Automatic Recognition of Car License Plate Numbers	771
<i>Minya Chen, Edward K. Wong</i>	
An Anomaly Detection Based on Vector Quantization	775
<i>Qingbo Yin, Rubo Zhang, Xueyao Li, Liran Shen, Huiqiang Wang</i>	
A Real-Time Lane Extraction System for the Wheelchair Robot	781
<i>Xiaojun Qi, Yinbing Ge</i>	
The Database for Digital Breast Sonography	785
<i>Ying-Tao Zhang, H. D. Cheng, Xiang-Long Tang, Yan-Hui Guo, Jia-Wei Tian</i>	

4TH INTERNATIONAL WORKSHOP ON INTELLIGENT MULTIMEDIA COMPUTING AND NETWORKING (IMM)

IMM-1: NETWORK ROUTING, SCHEDULING AND PROTOCOL

HeteCast: A Heterogeneous Qos Overlay Multicast Routing Scheme	789
<i>Jun Lu, Qiuqi Ruan, Rongrong Ni</i>	
Hierarchical Group Protocol for Parallel Transmission of Multimedia Data	793
<i>Yasutaka Nishimura, Tomoya Enokido, Makoto Takizawa</i>	
Packet Rescheduling in Real-Time using Token-passing Protocol in WDM Ring Access Networks	797
<i>I-Shyan Hwang, San-Nan Lee, Yen-Pin Kuo</i>	
LAWRRQ: A Queuing Management Algorithm for Scavenger Service	801
<i>Xiaofeng Chen, Lingdi Ping, Xuezheng Pan</i>	
Problems on Implementation of LQ Rate Control Schedule System for Multimedia Transmission	807
<i>Xiaofei Zhou, Kenneth Ong</i>	

IMM-2: STANDARD AND APPLICATIONS

Resource Conversion in MPEG-21 DIA	811
<i>Mariam Kimiaei Asadi, Jean-Claude Dufourd</i>	
A Semantic View Mechanism for User-centric Video Adaptation	815
<i>Dawei Ding, Wang Feng, Chong Wah Ngo, Qing Li</i>	
Fast Motion Estimation for MPEG-2 to H.264 Transcoding	819
<i>Gao Chen, Shou-xun Lin, Yong-dong Zhang, Feng Dai</i>	

Towards Ad-hoc Multimedia Information Exploitation via Web Services and Mobile Agents	823
<i>Ben Falchuk</i>	
Ecological Network-Based Grid Middleware for Bioinformatics Applications	827
<i>L. Gao, L.-H Ren, Y.-S. Ding, H. Dai, S.-H. Shao</i>	

IMM-3: MULTIMEDIA STREAMING

Modeling of Aggregate Available Bandwidth in Many-to-One Data Transfer	831
<i>S.C. Hui, Jack Y. B. Lee</i>	
An Approach Towards Enabling Intelligent Networking Services for Distributed Multimedia Applications	835
<i>Srikanth Sundaragopalan, Ada Gavrilovska, Sanjay Kumar, Karsten Schwan</i>	
Distributed Admission Control of Video on Demand Services over Existing Telephone Network	839
<i>Md. Shamsul Alam, Md.Mahmudul Hasan, Md. N.I. Mondal</i>	
Transmission of Video Streaming over Ad Hoc Networks	843
<i>Meng-Yen Hsieh, Tzu-Chiang Chiang, Yueh-Min Huang</i>	
Playback-Adaptive Multi-Source Video Streaming	847
<i>S.C. Hui, Jack Y. B. Lee</i>	

IMM-4: CONTENT ANALYSIS

Content-based Image Retrieval using Joint Correlograms	851
<i>Adam Williams, Peter Yoon</i>	
Shot-based Retrieval by Integrating Color and Motion Features	855
<i>Yuxin Peng, Chong-Wah Ngo</i>	
Applying PC Network Technology to Assess New Multimedia Content Analysis Applications for Future Consumer Electronics Storage Devices	859
<i>Fons de Lange, Jan Nesvadba</i>	
An Improved Variable-Size Block-Matching Algorithm with Minimal Error	865
<i>Haifeng Wang, Hanqing Lu, Qinshan Liu</i>	

4TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL INTELLIGENCE IN ECONOMICS FINANCE (CEF)

CEF-1: AGENT-BASED MODELING OF FINANCIAL MARKETS

Learning Foreign Exchange Intervention Policies with an Artificial Market	869
<i>Hiroki Matsui, Kiyoshi Izumi, Satoshi Tojo</i>	
Interactive Estimation of Agent-Based Financial Markets Models	873
<i>Ihsan Ecemis, Eric Bonabeau, Trent Ashburn</i>	
Market Efficiency and Rational Expectation under Asymmetric Information and Uncertainty in Price Prediction	877
<i>Takuya Kato, Hideyuki Tanaka, Yu Chen, Hirotada Ohashi</i>	
What Causes Persistence of Stock Return Volatility? One Possible Explanation with an Artificial Stock Market	881
<i>Ryuichi Yamamoto</i>	
A Multi-period CAPM with Heterogeneous Beliefs	887
<i>Hendri Adriaens, Bas Donkers, Bertrand Melenberg</i>	
Avalanche Dynamics of the Financial Market	891
<i>Pei-Ling Zhou, Chun-Xia Yang, Tao Zhou, Min Xu, Jun Liu, Bing-Hong Wang</i>	

CEF-2: NEURAL NETWORKS (I)

Examining the Internal Complexity of a Neural Network Trained with Divisia Component Data	895
<i>Vincent A. Schmidt, Jane M. Binner</i>	
Evaluating the Performance of a EuroDivisia Index Using Artificial Intelligence Techniques	899
<i>J.M. Binner, A.M. Gazely, G. Kendall</i>	
An Exploratory Study for Neural Net Forecasting of Retail Sales Trends Using Economic Indicators	903
<i>Mike Orra, Gursel Serpen</i>	
Forecasting Exchange Rates with Nonlinear Models	907
<i>André Alves Portela Santos, Leandro dos Santos Coelho, Newton C. A. da Costa Jr</i>	
Predicting Exchange Rate Direction with Leading Indicators via Neural Network Model	911
<i>Fu-Ming Lee, Li-Hua Li, Chia-Yang Lin</i>	

The Self-Referential Construction for Computational Intelligence Processing in Economics and Finance	915
<i>Jishou Ruan, Yalou Huang</i>	

CEF-3: WAVELET ANALYSIS

The Fractal Behaviour of CAC 40 Returns Examined in the Time-Frequency Domain	919
<i>Serge Hayward</i>	
Second Generation Wavelet Transforms of Yield Curve Shifts.....	923
<i>Joel R. Barber, Mark L. Copper</i>	
Multiscale Time Series Analysis of the Taiwan Stock Market: A Wavelet-Based Approach.....	927
<i>Chueh-Yung Tsao, Chun-Ru Lin</i>	
Computational Forecasting of Two Exchange Rates.....	933
<i>Mak Kaboudan</i>	
Time-Series Data Analysis with Rough Sets	937
<i>Joseph Herbert, JingTao Yao</i>	

CEF-5: NEURAL NETWORKS (II)

Radial Basis Function Techniques for Regression Analysis of Economic Trends	941
<i>Marcus L. Roberts, Steven C. Gustafson</i>	
Investment Analysis of Real Estate by Using Radial Basis Probabilistic Neural Networks	945
<i>X.-G. Wang, Y.-S. Ding, X.-F. Zhang, Y.-Q. You, S.-H. Shao</i>	
Neural Networks for Extracting Implied Risk-Neutral Probability Density Surface of Stock Index Options	949
<i>Ing-Chyuan Wu</i>	
Correlation Prediction between Foreign Stock Exchanges.....	953
<i>Chiu-Che Tseng, Han-Chiu Huang, I-Wan Wang</i>	
Bayesian Analysis of Neural Network Models for Conditional Return Distribution	957
<i>Tatiana Miazhyńska, Sylvia Frühwirth-Schnatter, Georg Dorfner</i>	

CEF-6: FUZZY LOGIC

Analysis on Reciprocal Community Currency Using Fuzzy Measure Theory	961
<i>Masayuki Kokabu, Takafumi Ikeda, Osamu Katai, Takayuki Shiose, Hiroshi Kawakami</i>	
Ranking Stocks Using FMCDM.....	967
<i>Chung-Tsen Tsao</i>	
An Overview of Insurance Uses of Fuzzy Logic.....	971
<i>Arnold F. Shapiro</i>	

CEF-7: NEURAL NETWORKS (III)

The Consistency of Self-Declared Hedge Fund Styles: A Return-Based Analysis with Self-Organizing Maps	975
<i>Ramin Baghai-Wadji, Rami El-Berry, Stefan Klocker, Markus Schwaiger</i>	
An Application of Kohonen's SOM for the Management of Benchmarking Policies	977
<i>Raquel Florez-Lopez</i>	
Estimating Female Labor Force Participation through Statistical and Machine Learning Methods: A Comparison	983
<i>Omar Zambrano, Claudio M. Rocco S., Marco Musellie</i>	
An Application of One-Class Support Vector Machine for Currency Crises Discrimination.....	987
<i>Claudio M. Rocco S.</i>	
Detection and Prediction of Relative Clustered Volatility in Financial Markets.....	991
<i>Karen Hovsepian, Peter C. Anselmo, Subhasish Mazumdar</i>	

CEF-8: AGENT-BASED MODELING: LEARNING & GAMES

On Variant Evolution of Party Competition	995
<i>Jie-Shin Lin</i>	
Efficiency and Traps of Social Learning: Some Computational Experiments.....	999
<i>Yuya Sasaki</i>	
Achieving Cooperation Using Artificial Immune Systems	1003
<i>Tzai-Der Wang, Colin Fyfe</i>	

Choosing Multi-Issue Negotiating Object Based on K-Armed Bandit Problem	1007
<i>Liming Wang, Yumei Chai, Houkuan Huang</i>	

CEF-9: EVOLUTIONARY METHODS

A Genetic Algorithm for the Structural Estimation of Games: A First Report	1011
<i>Victor Aguirregabiria, Pedro Mira</i>	
Using Fractal's Addition and GP for N-Steps Ahead Forecasting	1015
<i>Chao-Fu Hong, Chi-Liang Yang</i>	
Using GAs to Minimise the Bullwhip Effect in a Supply Chain	1019
<i>T. O'Donnell, L. Maguire, R. McIvor, P. Humphreys</i>	
Volatility Forecast by Discrete Stochastic Optimization and Genetic Algorithms	1023
<i>Irwin Ma, Tony Wong, Thiagas Sankar, Lisa Li</i>	

CEF-10: ECONOMIC SYSTEMS: THEORETICAL APPROACH

Properties of a Renewal Process Approximation for a Spin Market Model	1029
<i>Muffasir Badshah, Robert Boyer, Theodore Theodosopoulos</i>	
Dynamic Pricing on Commercial Websites: A Computationally Intensive Approach	1033
<i>Patrick Mullen, Kevin Seppi, Sean Warnick</i>	
Predicting Uncertain Outcomes Using Information Markets	1037
<i>Yiling Chen, Tracy Mullen, Chao-Hsien Chu</i>	
Escape Dynamics: A Continuous Time Approach	1041
<i>Dmitri Kolyuzhnov, Anna Bogomolova, Sergey Slobodyan</i>	
Implications of the Small Gain Theorem in the Design of an Economic Laboratory	1045
<i>N. Tran, C. Giraud-Carrier, K. Seppi, S. Warnick</i>	
The Value of Cooperation Within a Profit-Maximizing Organization	1049
<i>N. Tran, West, C. Giraud-Carrier, K. Seppi, S. Warnick, Johnson</i>	

CEF-11: FINANCIAL DATA MINING: MULTIMODEL APPROACH

Forecasting Agricultural Commodity Prices Using Hybrid Neural Networks	1053
<i>Tamer Shahwan, Martin Odening</i>	
Evolutionary Method for Real-Word Times Series Prediction	1059
<i>Tiago A. E. Ferreira, Germano C. Vasoncelos, Paulo J. L. Adeodato</i>	
Forecasting High-Frequency Financial Data Volatility via Nonparametric Algorithms: Evidence from Taiwan Financial Market	1063
<i>Wo-Chiang Lee</i>	
Time Series Financial Data Mining	1067
<i>Chiu-Che Tseng, Ching-Tsai Kang</i>	

CEF-12: FORECASTING VOLATILITY IN FINANCIAL MARKET (I)

A New Model in Forecasting Dynamic Correlations	1071
<i>Ray Y. Chou, Nathan Liu, Chun-Chou Wu</i>	
Measuring the Connection Strengths between Markets Using Artificial Neural Networks	1075
<i>Mona R. El Shazly</i>	
An Empirical Approach toward Realistic Modeling of Capital Market Volatility	1079
<i>Nan-Jye Wang, Kelu Wang</i>	
Boosting Frameworks in Financial Applications: From Volatility Forecasting to Portfolio Strategy Optimization	1085
<i>Valeriy V. Gavrishchaka</i>	
Trading Strategy Based on Grey Clustering in Financial Bear Market	1093
<i>Yen-Tseng Hsu, Hui-Fen Hung, Ming-Chung Liu, Chin-Tu Huang, Po-Tsang Yu</i>	

CEF-14: FINANCIAL MARKETS: THEORETICAL APPROACH

Financial Modelling of Customer Value	1097
<i>David Collings, Nicola Baxter</i>	
Prospect Theory and the Irrational Herding in Stock Markets	1103
<i>Len-Kuo Hu, Ching-Mann Huang, Yu-Shiu Lin</i>	

Options with Underlying Asset Driven by a Fractional Brownian Motion: Crossing Barriers Estimates	1107
<i>Roy Cerqueti, Giulia Rotundo</i>	
Financial Risk Assessment: A Property Investment Case Study	1111
<i>Enda J. Cummins</i>	

CEF-15: INTEGRATING HUMAN AND COMPUTATIONAL INTELLIGENCE IN COMMERCIAL PRODUCT DESIGNS

Entrusting Users in Interactive Evolutionary Computation Directly Select Chromosomes for Evolving: A Case Study of Designing Mineral Water Bottles	1115
<i>Fang-Cheng Hsu, Ming-Hsiang Hung</i>	
Creative Design by Social Affiliation Based Interactive Evolutionary Computation	1119
<i>Hsiao-Fang Yang, Mu-Hua Lin, Chao-Fu Hong</i>	
A Comparison of Three Fitness Prediction Strategies for Interactive Genetic Algorithms	1123
<i>Leuo-hong Wang, Jun-de Liao</i>	
Evolutionary Interactive Genetic Algorithms: A Special Breed of Interactive Genetic Algorithms	1127
<i>Chien-Jen Huang, Chao-Fu Hong</i>	
Using Interactive Genetic Algorithm for Bundle Design	1131
<i>Wen-Shiu Lin, Hsin-Yi Wang</i>	
The Study of Idea Generation and New Product Design Based on Human-Based Genetic Algorithm	1135
<i>Wen-Shiu Lin, Lan-Ying Chan</i>	

CEF-16: CLASSIFIER SYSTEMS

Hybrid-agent Organization Modeling: A Logical-heuristic Approach	1139
<i>Ana Marostica, Cesar Briano, Ernesto Chinkes</i>	
Application of an Instance Based Learning Algorithm for Predicting Stock Market Index	1147
<i>Ruppa K. Thulasiram, Adenike Y. Bamgbade</i>	
The Application of EBO Model to Forecast Financial Distressed Companies	1151
<i>Kunhuang Huarng, Hui-Kuang Yu, Chong-Jiang Chen</i>	
FD Prediction Using the Bayes Classifier with MFA	1155
<i>Jigang Xie, Zhengding Qiu, Yanjun Han</i>	

CEF-17: FORECASTING VOLATILITY IN FINANCIAL MARKET (II)

Portfolio Value-at-Risk Forecasting with GA-based Extreme Value Theory	1159
<i>Ping-Chen Lin</i>	
Pricing and Hedging Derivative Securities Based on Neural Network Coefficient Model	1163
<i>Po-Chang Ko</i>	

CEF-18: FINANCIAL MARKETS: ECONOMETRIC APPROACH

Investor Sentiment and Excess Returns-Empirical Evidences from Taiwan Stock Market	1167
<i>Wen-Chen Lo, Ku-Jun Lin</i>	
Market Microstructure: Time Series Analysis	1171
<i>Yuriy Nevmyvaka, Katia Sycara</i>	
Using Data Mining Techniques for Detecting Noises and Pre-Processing Financial Time Series	1177
<i>Carson K.-S. Leung, Ruppa K. Thulasiram, Dmitri A. Bondarenko</i>	

CEF-19: FORECASTING VOLATILITY IN FINANCIAL MARKET (III)

Consolidation Strategies Based on Fuzzy Clustering	1181
<i>Yen-Tseng Hsu, Ming-Chung Liu, Hui-Fen Hung, Chin-Tu Huang, Dian-Lin Wu</i>	
Use the ϵ-Steps Ahead Predicting to Discover the Trading Signal	1185
<i>Chao-Fu Hong, Chi-Liang Yang</i>	
Volatility Forecasting with Sparse Bayesian Kernel Models	1189
<i>P. Tino, N. Nikolaev, X. Yao</i>	
Evaluating Efficiency of Index Fund Selections over the Fund's Future	1193
<i>Yukiko Orito</i>	

CEF-20: AGENT-BASED MODELING: POLICIES & INDUSTRIALS ECONOMICS

On Normative and Liberal Pension Policy in Model Economy with Genetic Learning	1197
<i>Lukas Pichl</i>	
New Mexico Tech Currency Markets Modeling Project	1201
<i>Peter C. Anselmo, Karen Hovsepian, Carlos Ulibarri, Mauro X. Trabatti</i>	
Co-Evolving Business Models: A Case Study with the Internet Service Provider (ISP) Industry	1205
<i>Ian Fenty, Eric Bonabeau, Juergen Branke</i>	
Lottery Markets--Design, Micro-Structure, and Macro-Behavior: An Agent-Based Computational Approach	1209
<i>Shu-Heng Chen, Bin-Tzong Chie, Chia-Wei Lee</i>	
Lottery Sales and Income Distribution	1213
<i>Shu-Heng Chen, Bin-Tzong Chie, Huei-Feng Fan</i>	

6TH ATLANTIC SYMPOSIUM ON COMPUTATIONAL BIOLOGY AND GENOME INFORMATION (CBG)

CBG-1: COMPUTATIONAL METHODS

Go-chart, a Toolkit for Visualization of Genes in the Context of Gene Ontology with Variable P-values	1217
<i>D. Shah, M. Ma, G. Tromp</i>	
Linking Multiple Genes to Human Chromosomal Locations to Facilitate Knowledge Discovery	1221
<i>T. Wang, M. Ma, P. Soteropoulos</i>	
Statistical Identification of Biclusters in Gene Expression Data	1225
<i>A. Chakraborty</i>	
Wavelet Analysis on Temporal Expression Profiles of Malaria Parasite	1231
<i>H. Cai, S. Agaian, J. Gu, Y. Wang</i>	
Precise Gridding of Microarray Images by Detecting and Correcting Rotations in Subarrays	1235
<i>Yu Wang, Frank Y. Shih, Marc Q. Ma</i>	
SNP Auto-calling Using Support Vector Machines	1239
<i>K. Zhang, M. Ma, H.-Y. Wang, Y. Wang, M. Baerjee, A. Karmaker, F. Shih, J. Wang, H. Li</i>	

VOLUME 3

CBG-2: METABOLIC NETWORKS

Exploring Protein Networks with a Semantic Similarity Measure Across Gene Ontology	1243
<i>Z. Lubovac, J. Gamalielsson, B. Olsson, A. Lindlof</i>	
Efficient Validation of Metabolic Pathway Databases	1249
<i>L. Felix, G. Valiente</i>	
Testing Feasibility in Metabolic Pathways is As Easy As Matrix	1253
<i>R. Nigam</i>	
A Combined Approach to the Identification of Transcription Factor Binding Sites in Prokaryote	1257
<i>H.K. Dai, L. Zhao</i>	

CBG-3: STRUCTURE ALIGNMENT

Finding Global Similarities Between Proteins Using Vector Algorithms	1261
<i>S. Hamel</i>	
Randomized Algorithms for Three-dimensional Protein Structures Alignment	1267
<i>Y.-L. Lin, Y.-H. Lin, P.-S. Yu, H.-C. Chang</i>	
Aligning Two RNA Secondary Structures with L-block	1271
<i>Z. Wang, E.R.M. Tillier</i>	
Peak Alignment Using Restricted Edit Distances	1277
<i>V. Makinen</i>	
The Similarity Metric and the Distance Metric	1281
<i>B. Ma, K. Zhang</i>	
ParaRNA: a Parametric Tool for Aligning Two RNA Structures	1285
<i>L. Wang, W. Feng, H. Zhao, K. Zhang, X. Liu</i>	

CBG-4: GENOMIC DATA ANALYSIS

Phylogenetic Information Integration: Research Issues and Techniques	1289
<i>K.G. Herbert, J.T.L. Wang</i>	
Combinatorial Reconstruction of Sibling Relationships	1295
<i>T.Y. Berger-Wolf, B. DasGupta, W. Chaovaitwongse, M.V. Ashley</i>	
Genomic Data Mining for Species Identification Using Principal Component Analysis	1299
<i>S. Sen, S. Narasimhan, A. Konar, U.K. Chakraborty</i>	
Comparison of Gene Structure in Microbial Genomes	1303
<i>G. Rao, D.K.Y. Chiu</i>	
PROFESS, a System to Support Extracting Protein Function Information from Literature	1309
<i>Y. Kaneta, M. Numa, M. A. Munna, Y. Sakurai, T. Ohkawa</i>	

CBG-5: PATTERN ANALYSIS METHODS

Local Sequence Alignment Using Parallel Memory-efficient Dynamic Programming	1313
<i>L. Pichl, M. Arai, K. Hanabusa, T. Hayashi</i>	
Finding Double-stranded RNA Structures in the 3' Untranslated Eukaryotic MRNAs	1317
<i>S.-Y. Le, J.V. Maizel, Jr</i>	
Splice Site Prediction with Linear Kernel and Bayesian Mapping	1323
<i>Y. Zhang, C.-H. Chu, H. Zha, Y. Chen, X. Ji</i>	
Sequence-structure Patterns: Discovery and Applications	1327
<i>T. Milledge, S. Khuri, X. Wei, C. Yang, G. Zheng, G. Narasimhan</i>	
Determining Thresholds for Binding Site Sequence Models Using Information Theory	1331
<i>C. Bi, P.K. Rogan</i>	

CBG-6: PATTERN SEARCH METHODS

Exploring the Space of Consensus RNA Secondary Structure Motifs Using Suffix Arrays	1337
<i>T. Nguyen, M. Turcotte</i>	
YUCCA: an Efficient Algorithm for Small Molecule Docking	1345
<i>V. Choi</i>	
Algorithms for Searching RNA Motifs in Genomic Sequences	1349
<i>J. Liu, K. Zhang</i>	
A Method for Retrieving Protein with a Local Structure Similar to Known Interaction Site Using Profile	1353
<i>Y. Nonomura, K. Yoshino, T. Ohkawa</i>	
Identification of Protein Patterns in Nucleic Acid Sequences and Exploration of Synonymous Codons in Tissue Differentiation	1357
<i>G. Anogianakis, E. Kapritsos, Ch. Makris, N. Mpaltas, K. Perdikuri, K. Themelis, A. Tsakalidis</i>	
Classifying SARS-CoV Genomes Based on Their Unique Sequences	1361
<i>P.-H. Liu, S.-L. Peng, C.Y. Tang, Y.-W. Tsay, J.T.L. Wang</i>	

3RD SYMPOSIUM ON PHOTONICS, NETWORKING AND COMPUTING (PNC)

PNC-1: OPTICAL PROCESSING

Almost Perfect Conservative Optical Logic Gates	1365
<i>H. John Caulfield</i>	
Optical Vector Logic Theorem-Proving	1369
<i>Jonathan Westphal, John Caulfield, Jim Hardy, Lei Qian</i>	
Super-resolved Point Source Tracking Using a Birefringent Material and a Diffractive Optical Element	1373
<i>A. D. Portnoy, J. P. Guo, D. J. Brady</i>	
10-GHz Spectral-Hole-Burning Spectrum Analyser	1377
<i>Max Colice, Friso Schlottau, Kelvin Wagner</i>	
Spectral Hole Burning based LIDAR	1381
<i>Friso Schlottau, Allan Hoskins, Youzhi Li, Kelvin Wagner</i>	

Optically Processed Broadband Microwave Imaging using a Spectral Hole burning Material	1385
<i>Benjamin Braker, Youzhi Li, Friso Schlottau, Donghua Gu, Kelvin Wagner</i>	

PNC-2: PHOTONIC CRYSTALS

Reducing Out-of-Plane Scattering Loss in One-Dimensional Photonic Crystal Slabs	1389
<i>Jeremy Goeckeritz, Steve Blair</i>	
Optical Bistability in a Nonlinear Thin Film“Slow light” PBG Structure.....	1393
<i>Liyong Diao, Steve Blair</i>	
Demonstration of Highly Efficient Transmission in Photonic Crystal Y-Junctions at 1.5μm Wavelength	1397
<i>L. Dekkiche, R. Naoum</i>	

PNC-3: NEGATIVE INDEX MEDIA

Tunable Two-Dimensional Photonic Crystal Slab Exhibiting Broadband Sub-Wavelength Resolution	1401
<i>Qi Wu, Won Park</i>	

PNC-5: OPTICAL COMMUNICATIONS

FTTH Standards, Deployments and Research Issues (invited)	1405
<i>David Gutierrez, Kyeong Soo Kim, Salvatore Rotolo, Fu-Tai An, Leonid G. Kazovsky</i>	
Multicasting in DWDM Optical Mesh Networks Using a Novel Hybrid Routing and Wave.....	1409
<i>I-Shyan Hwang, San-Nan Lee, Chih-Chien Chen</i>	
Raman Amplification with Ring Resonators.....	1413
<i>K. Zheng, S. Blair</i>	
Silicon Based Impact Ionization Current Amplifier Integrated with External Photodiode	1417
<i>Hong-Wei Lee, Aaron R. Hawkins</i>	

PNC-6: MICROSYSTEMS AND SENSORS

D-fiber Bragg Gratings for Sensors.....	1421
<i>Krystle Price, Kevin Smith, Benjamin L. Ipson, Tyson L. Lowder, Stephen M. Schultz, Aaron R. Hawkins, Richard H. Selfridge</i>	
Waveguide Microchannel Crossing for Terahertz Spectroscopy	1425
<i>Guillermo Oviedo Vela, Mark S. Miller</i>	
Planar Fabrication of Liquid Core Optical Waveguides and Microfluidic Devices	1429
<i>Matthew M. Smith, John P. Barber, Bridget A. Peeni, Dongliang Yin, Holger Schmidt, Aaron R. Hawkins</i>	
Coded-aperture, Multi-wavelength Raman Spectroscopy for Ethanol Detection in Biological Samples.....	1433
<i>S.T. McCain, M.E. Gehm, Y. Wang, N.P. Pitsianis, D.J. Brady</i>	
Hybridization Enhancement Studied Using Real-Time Detection.....	1437
<i>Justin A. Bishop, S. Blair, N. Adey</i>	
Supramolecular Assembly of In-Plane Organic Crystals via Solvent-Vapor Exposure.....	1441
<i>Debra J. Mascaro, Vladimir Bulovic</i>	

2ND INTERNATIONAL WORKSHOP ON BIO-INSPIRED SYSTEMS AND BRAIN-LIKE COMPUTER (BIC)

BIC-1

YinYang Bipolar Diagnostic Analysis of Neurological Intrinsic of Brain Disorder.....	1445
<i>Wen-Ran Zhang</i>	
A Programmable DNA Automaton Model for Context-Free Grammars	1449
<i>W.-G. Li, Y.-S. Ding, D. Ruan, Z.-D. Huang, S.-H. Shao</i>	
Biologically Inspired Adaptive Address-Event Representation Imager for Particle Localization	1453
<i>Peng Xu, Yiming Zhai, Pamela Abshire</i>	
Neuromorphic Architectures for Hybrid Nanoelectronic Circuits.....	1457
<i>Konstantin K. Likharev, Jung Hoon Lee, Xialong Ma</i>	
Implementation of a Biologically Realistic Spiking Neuron Model on FPGA Hardware	1461
<i>B. Glackin, L.P. Maguire, T.M. McGinnity, A. Belatreche, Q. Wu</i>	

Neuronal Synchronisation-Based Colour Image Segmentation	1465
<i>Ammar Belatreche, Liam P. Maguire, T.M. McGinnity</i>	

1ST INTERNATIONAL SYMPOSIUM ON WEB INTELLIGENCE AND SECURITY (WIS)

WIS-1

Compliance Checking of Privacy Policies for Semantic Web Services	1471
<i>Grit Denker, Son Nguyen</i>	
Web Search: The Protoform Approach	1475
<i>Chris Tseng, Toan Vu</i>	
Face Detection Over the Internet	1479
<i>Chris Tseng, Chung Wei</i>	

WIS-2

Ubiquity and Common Sense for the Web	1483
<i>Leona Fass</i>	
Web Queries in Protoform and RDF Semantic	1487
<i>Chris Tseng, Patrick Ng</i>	
Fuzzy Logic in Web Intelligence	1491
<i>Masoud Nikravesh, Ali Jaoua, Chris Tseng</i>	
Analysis with Word: Application to Food Nutrients classification	1495
<i>Chris Tseng, Chingchia Li, Kevin Hung</i>	

1ST INTERNATIONAL WORKSHOP ON DATA MINING (WDM)

WDM-1: DATA MINING TECHNIQUES

Applying Association Rules to Designing an Efficient Image Retrieval Model	1501
<i>Yo-Ping Huang, Tsun-Wei Chan</i>	
Rule-Set Evaluation of Article Relevance for Autonomous Bibliography Databases	1505
<i>Lukas Pichl, Manabu Suzuki, Daiji Kato, Kazuyuki Joe, Akira Sasaki</i>	
A Flexible Information Retrieval Method for Bird Databases	1509
<i>Yo-Ping Huang, Tienwei Tsai, Mann-Jung Hsiao</i>	
Understanding the Factors That Affect Text Mining Results	1513
<i>Cherie Courseault Trumbach, Alan L. Porter</i>	

WDM-2: DATA MINING MODELS AND METHODS

Answering OLAP Queries via Subcubes	1517
<i>Huei-Huang Chen, Kuo-Wei Ho</i>	
Discovering Personal Paths from Sparse GPS Traces	1521
<i>Changqing Zhou, Shashi Shekhar, Loren Terveen</i>	
A Coarse Classification Scheme Based On Clustering and Distance Thresholds	1525
<i>Te-Wei Chiang, Tienwei Tsai</i>	
An Efficient Data Model for Sensor Networks	1529
<i>Janak Mathuria, Chang-Tien Lu, Jing Dai</i>	

WDM-3: DATA MINING ALGORITHMS AND APPLICATIONS

Domain-Specific Term Extraction and Its Application in Text Classification	1533
<i>Tao Liu, Xiao-long Wang, Guan Yi, Zhi-ming Xu</i>	
An Improvement on the Algorithm of Decision Tree	1537
<i>Liu Xumin, Huang Houkuan, Xu Weixiang</i>	
A Genetic Algorithm for Learning Bayesian Networks	1541
<i>Yingbiao Ling, Yunfei Jiang, Xiangjun Wu</i>	

A Generalized Apriori Algorithm	1545
<i>Baoqing Jiang, Fengbin Zheng, Yang Xu</i>	
Mining Two-Dimensional Optimized Association Rules and Hidden Pattern for Numeric Attributes	1549
<i>Zhi He, Shengfeng Tian, Houkuan Huang</i>	
A Dynamic Auto-Stopped Clustering Algorithm Based on Outlier Information	1553
<i>Tian-yang Lv, Shao-bin Huang, Wan-li Zuo, Zheng-xuan Wang</i>	

1ST INTERNATIONAL WORKSHOP ON E-SERVICE INTELLIGENCE (ESI)

ESI-1: MODELS OF E-SERVICE INTELLIGENCE

A Multi-granular Linguistic Based-Content Recommender System Model	1557
<i>L. Martinez, L.G. Pérez, M. Barranco, F. Mata</i>	
An Electronic Commerce for B2C: A Strategic Approach	1561
<i>Simon Wu, Iok Kuan</i>	
A Conceptual Model for Spatially Enabled E-Service Intelligence in State Transportation Program	1567
<i>James P. Hall</i>	
On Three Thinking Forms: Abstract, Imagination and Intuition Based on Fuzzy Models	1571
<i>Xiaobei Liang, Bingyong Tang, Da Ruan</i>	
An Integrated Information Service Platform for Managing Urban District	1575
<i>X.-G. Wang, Y.-S. Ding, Y. Gao, Q.-H. Meng, S.-H. Shao</i>	
A “Pentagon” Compound Model in the Evaluation of Customer Satisfaction for Tourism Websites	1579
<i>Zi Lu, Y. Li, Z. Zhang, Z. Deng</i>	
Factors Affecting Consumers’ Trust Building in B-to-C e-Commerce Market of China: An Empirical Study	1583
<i>Chuan Pang, Zhongmin Chen, Chi Tin Hon</i>	
E-Service Model of Outdoor Sports Club: Information Flow Guides People Flow	1587
<i>Zi Lu, Y. Wang, Z. Zhang, Z. Sun</i>	

ESI-2: SYSTEMS AND METHODS OF E-SERVICE INTELLIGENCE

STEF: Personalized Trade Exhibition Recommendation	1591
<i>Xuetao Guo, Jie Lu</i>	
A Study of Reasoning Rules of Expert System of Enterprise Human Resource Competence Appraisalment Based on Fuzzy Relation	1595
<i>Xiaohong Liu, Xianyi Zeng, Yang Xu, Ludovic Koehl</i>	
Virtual Classroom Implementation for Synchronous Distance Learning	1599
<i>Sen Cakir, Havva H. Basak</i>	
Decision Support Systems for Small Enterprise Based on Knowledge Management	1603
<i>Xiaobei Liang, Xinghua Liu, Yuan Xue, Bingyong Tang</i>	
Sementic-Based Data Access Services on the Grid	1607
<i>He Huang, Zhongzhi Shi, Yong Cheng, Lirong Qiu, Xiaoxiao He</i>	
Research on Traffic Information Intelligent Analysis and Decision Support System Modeling	1611
<i>Jiameng Xie, Hong Peng, Donghui Yang, Yansheng Tang</i>	
A Web-based Decision Support System for Linear Bilevel Multi-follower Problems without Sharing Variables	1619
<i>Chenggen Shi, Jie Lu, Guangquan Zhang</i>	

ESI-3: TECHNOLOGIES AND APPLICATIONS OF E-SERVICE INTELLIGENCE

Gathering Linguistic Information in Distributed Intelligent Agent on the Internet	1623
<i>Zheng Pei, Da Ruan, Yang Xu</i>	
Mining Key Information of Web Pages	1627
<i>Chao Wang, Jie Lu, Guangquan Zhang</i>	
A Heterogeneous Multi-criteria Hierarchical Evaluation Model For Web site Services	1631
<i>L. Martinez, L.G. Perez, P.J. Sanchez, B. Montes</i>	
A 2-level Intelligent Sensory Evaluation System of Industrial Products in an Internet Supply Chain	1635
<i>Bin Zhou, Ludovic Koehl, Xianyi Zeng, Yongsheng Ding</i>	
Stages of Knowledge Discovery in Websites	1639
<i>Matthew Smith, Christophe Giraud-Carrier</i>	
Web Services in the Health Care Industry of China	1643
<i>Meiqi Fang, Yuan Zhang, Jia Yu</i>	

Improving the Accuracy of Naïve Bayesian Classifier Using Fisher Score	1649
<i>Youping Huang, Zhongzhi Shi</i>	
The Integration Trend of Tourism Informatization Service	1653
<i>Zi Lu, Yanli Li, Bing Han</i>	
An Intelligent Adjustive Method for Workflow Management System	1657
<i>Xiaoping Qiu, Yi Wang, Haiming Li, Dan Meng</i>	

1ST INTERNATIONAL CONFERENCE ON GEOMETRIC MODELING, VISUALIZATION & GRAPHICS (GMV)

GMV-1

Smoothing Space Curves with the MLS Projection	1661
<i>Lavanya Sita Tekumalla, Elaine Cohen</i>	
Feature Edge Extraction from Mesh Model based on Wide Range Normal Evaluation and Modified Watershed Method	1665
<i>Tomohiro Mizoguchi, Hiroaki Date, Satoshi Kanai, Takeshi Kishinami</i>	
Document Clustering with Hierarchical Algorithm	1669
<i>Yong Wang, Julia Hodges</i>	
Data Visualization Using the DPSOM	1673
<i>Chao Shao</i>	
Adaptive Spatio-Temporal Interpolation Methods	1677
<i>Jun Gao, Peter Revesz</i>	

GMV-2

Segmentation and Visualization of Brain MRA Images for Image-Guided Neurosurgery	1681
<i>Shuqian Luo, Guangwei Du</i>	
3D Visualization of MEG Activation Records within a Semi-Transparent Talairach Model Brain	1685
<i>P. Katsaloulis, P. Simos, D. Francis, A. Papanicolaou, I. Kakadiaris, T. Theoharis</i>	
Collision Detection and Free-Form Deformation for a Total Hip Replacement Planning System	1689
<i>Rafael Mayoral, Gordon Clapworthy</i>	
Modeling Realistic Inflation and Deflation Effect on Closed 3D Geometric Mesh for Computer Animation	1693
<i>Marina Gavrilova, Russel Apu</i>	
3-D Visualization and Virtual Endoscope of Human Digestive System from Chinese Digital Human	1701
<i>Guohong Zhou, Shan Gao</i>	

GMV-3

Capturing Outlines of Arabic Characters by Cubic Bezier Approximation	1705
<i>A. Masood, M Sarfraz</i>	
Conic Spiral Spline	1709
<i>Zulfiqar Habib, Manabu Sakai</i>	
A Comparison Between Two Evaluation Algorithms for Polynomial Curves	1713
<i>J. Delgado, J. M. Pena</i>	
Shape Preserving Data Visualization with Cubic Splines	1717
<i>M. Sarfraz, M. Z. Hussain, F. S. Chaudhry</i>	
Development of High Performance Cylindrical Cams Using B-Spline and Bezier Functions	1721
<i>S.H. Masood, P. Sriwatananukulkiij</i>	

GMV-4

Intelligent Design Agents With Integral Design Knowledge	1725
<i>Amol Deshpande, Rich Reisenfeld</i>	
Simplification of 3D Highly Irregular Mesh of Polygon Models	1729
<i>Kok-Why Ng, Ya-Ping Wong</i>	
The Integrated 3D Geometric Modeling for Woven Fabrics	1735
<i>Yong Jiang, Xiaogang Chen</i>	

Conversion of Polygonal Surfaces to Displaced Subdivision Surfaces	1739
<i>Muhammad Hussain, Yoshihiro Okada, Koichi Niijima</i>	

GMV-5

A 3D Shape Measurement System	1743
<i>Zhifu You, Charles L. Thomas, Robert F. Erbacher</i>	
Global Illumination: Efficient Renderer Design and Architecture	1749
<i>Michael Farnsworth, Robert F. Erbacher</i>	
Time-tunnel: Visual Analysis Tool for Time-series Numerical Data and Its Combinational Variation	1755
<i>Mina Akaishi, Yoshihiro Okada</i>	
Marching Squares-based Approach to Finding the Convex Hull a Planar Set of Points	1759
<i>Carsten Maple, Yong Yue</i>	

GMV-6

Interactive and Dynamic Visual Port Monitoring and Analysis	1763
<i>Robert F. Erbacher, Menashe Garber</i>	
Hardware Accelerated Graphics in Java	1767
<i>David McDonald, Robert F. Erbacher</i>	
Phylograph: Real-time Interactive Visualization of Phylogenetic Searches	1773
<i>Jesse Mecham, Mark Clement, Quinn Snell, Keith Crandall</i>	
Frame Hierarchy: A Framework for Level-of-Detail Video Visualization	1777
<i>Neta Sokolovsky, Jihad El-Sana, Michael Elhadad</i>	
A Piecewise-planar Method for Modelling Terrain and Finding Shortest Paths	1781
<i>Carsten Maple</i>	

GMV-7

A PAES Based Optimization Of RBF Networks To Predict Overhead Feeder Failures	1787
<i>Grant Cochenour, Jerad Simon, Surashish Nag, Oluwarotimi Odeh, Jan Poupe, Anil Pahwa</i>	
Microarray Data Clustering Using Particle Swarm Optimization K-means Algorithm	1791
<i>Youping Deng, Dheeraj Kayarat, Mohamed O. Elasri, Susan J. Brown</i>	
A New Public Key Cipher System Based on Image Encryption	1797
<i>Md. Golam Rabiul Alam, Mohammad Mahadi Hassan, Nadir Hossain</i>	
Generalized MDS for Data Exploration, Discriminant Analysis, Clustering and Visualization	1801
<i>David A. Johannsen, Jeff Solka</i>	

GMV-8

Geometric Constraints Solving by a Decomposition-Recombination Method	1805
<i>Samy Ait-Aoudia, Rabah Meraihi, Adel Moussaoui</i>	
A Modified IDCT and a New Strategy for Motion Compensation Based on VLIW	1809
<i>Wanli Ouyang, Chuangbai Xiao, Xiaomei Quan, Guang Liu</i>	
A Least-Squares Eigeneyes Decomposition Algorithm for Face Recognition	1815
<i>Mudassir Masood, Mohamed Deriche</i>	
Stochastic Error Diffusion	1821
<i>Tiecheng Liu</i>	

1ST ANNUAL WORKSHOP ON ROUGH SETS AND CHANCE DISCOVERY (RSC)

RSC-1

Data Crystallizer: Tool for Discovering Unobservable Events	1825
<i>Yukio Ohsawa, Takaichi Itoh</i>	
How Can You Discover Yourself During Job-hunting Process?	1831
<i>Hiroko Shoji</i>	

Trust and Information in the Internet Community: Comparative Study between Japan and USA	1835
<i>Yumiko Nara</i>	
Optimum Pricing Strategy for Maximization of Profits and Chance Discovery	1839
<i>Katsutoshi Yada, Kohei Yamamoto</i>	

RSC-2

Study on a Method for Supporting Scenario Extraction from Time Series Information	1843
<i>Kazuhiisa Inaba, Yukio Ohsawa</i>	
Creativity as Chance Discovery	1847
<i>Akinori Abe</i>	
Hospital Management Data Mining towards Chance Discovery	1851
<i>Yuko Tsumoto, Shusaku Tsumoto</i>	
Rough Cluster Analysis	1855
<i>Shoji Hirano, Shusaku Tsumoto</i>	

RSC-3

Data Annotation based on Scenario in Chance Discovery Process	1863
<i>Y. Iwase, Y. Takama</i>	
Extracting High Quality Scenario for Consensus On New Specifications of Equipment	1867
<i>Kenichi Horie, Yukio Ohsawa</i>	
Author Index	