2006 IEEE International Conference on Systems, Man and Cybernetics

Taipei, Taiwan
8-11 October 2006

Volume 1 of 11

IEEE Catalog Number: 06CH37755
ISBN: 1-4244-0099-6

Table of Contents

Faults Detection Using Gaussian Mixture Models, Mel-Frequency Cepstral Coefficients and Kurtosis 1
Fulufhelo V. Nelwamondo and Tshilidzi Marwala

Network Effects on Inter-organisational Coordination 7
Liaquat Hossain and Meeta Khatri

Program Appraisal: A Value Based Preference Modelling Approach. 13
David Watt

Performance Evaluation of IEEE 802.15.4 Ad Hoc Wireless Sensor Networks: Simulation Approach 20
Wilson T.H. Woon and T.C. Wan

Envisioning an Agent-OS for Autonomous Cooperative Systems 26
Francisco P. Maturana, Pavel Tichý, and Pavel Vrba

Application of artificial immune algorithms in multiple sensor system 32
ZhengQiao.Ji and Q.M.Jonathan .Wu

Prediction of HIV Status from Demographic Data Using Neural Networks 38
Brain Leke-Betechuoh, Tshilidzi Marwala, Taryn Tim, and Monica Lagazio

Blind Adaptive Shift Length Watermarking For Digital Images 44
Yu-Len Huang and Chi-Chuan Tao

Temporal Correlation Based Speech Feature Processing and its Application to Speaker Recognition 50
Xiaofei Xie and ChengGong Yu

An Edge Based Thresholding Method 55
Songtao Huang, Majid Ahmadi, and M.A. Sid-Ahmed

Flocking Coordination of Multiple Interactive Dynamical Agents with Switching Topology 61
Hong Shi, Long Wang, Tianguang Chu, Guangming Xie, and Minjie Xu

Legacy Software Modernization 67
Chia-Chu Chiang and Coskun Bayrak

A New Modeling Methodology of Urban Traffic Lights Based on Timed Coloured Petri Nets 73
Yi-Sheng Huang, Ta-Hsiang Chung, and Ting-Hui Lin

Unsupervised Learning: A Fusion of Rough Sets and Fuzzy Ants Clustering for Anomaly Detection System 79
Surat Srinoy and Werasak Kurutach

Self-Organizing Decision Tree Based on Reinforcement Learning and its Application on State Space Partition 85
Kao-Shing Hwang, Tsung-Wen Yang, and Chia-Ju Lin

"Who Stole the Bat?" Deception Detection on the Basis of Actions 91
James D. Jones, Hemant Joshi, Umit Topaloglu, and Eric Nelson

Human Adaptive Control Strategy for Multiple Air Conditioners 96
Akihiro Koretsune, Koichi Yamada, Hiroshi Tsuji, Yukihiro Jinno, and Eiji Mimura

Di-Learn: Distributed Knowledge Discovery with Human Interaction 102
Coskun Bayrak, Hayrettin Kolukisaoglu, and Chia-Chu Chiang

A Hardware-Accelerated Patch Search Engine for Image Completion 108
Yi Lin

Robust Finite-Time Optimal Linear State Feedback Control of Uncertain TS-Fuzzy-Model-Based Control Systems 114
Wen-Hsien Ho and Jyh-Horng Chou

Microarray Gene Expression Classification Based on Supervised Learning and Similarity Measures 120
Qingzhong Liu, Andrew H. Sung, Jianyun Xu, Jianzhong Liu, and Zhongxue Chen

Table of Contents

A Fully Automatic Approach of Color Image Edge Detection 126
Yangxing Liu, Takeshi Ikenag, and Satoshi Goto

Self-Organizing Neural-Network-Based Adaptive Control for Linear Ultrasonic Motor 130
Chun-Fei Hsu and Tsu-Tian Lee

Design and Implementation of Omni-Directional Soccer Robots for RoboCup 136
Kuo-Yang Tu and Shi-Chao Luo

Gait Synthesis Self-generation by Dynamic Fuzzy Q-Learning Control of Humanoid Robots 142
Meng Joo Er, Yi Zhou, and Chiang-Ju Chien

Path Tracking and Obstacle Avoidance of Car-Like Mobile Robots in an Intelligent Space Using Mixed H2/H∞ Decentralized Control 148
Chih-Lyang Hwang, Li-Jui Chang, and Song-Yu Han

A Biological Basis for Architecting Intelligent and Autonomous Software 154
Thang N. Nguyen and Tony Plan

A Modedling Strategy of Shop-Floor Interlocking and Controlling using Virtual Petri Nets and Production Simulation 160
Orides Morandin Jr., Rodrigo G. Araujo, and Edilson R. R. Kato

Security Enhancement of Multimedia Copyright Protection 166
M. A. Suhail and M. S. Obaidat

Design of a Fuzzy Logic Controller by Ant Colony Algorithm with Application to an Inverted Pendulum System 171
Baojiang Zhao and Shiyong Li

Stability Analysis of Switched Linear Systems with Polytopic Uncertainties 176
Dongmei Xie and Mei Yu

The Intelligent RT Forecaster of Ice-Storage Air-Conditioner by Neural Network 181
Huang-Chu Huang, Shang-Jen Chuang, Chuo-Yean Chang, Yu-Ju Chen, and Rey-Chue Hwang

Steel water continuous casting slag detection system based on VQ 186
Da-peng Tan, Pei-yu Li, Li Xu, Guo-chun Yao, and Duan-yang Liu

A Bayesian Framework for Foreground Segmentation 191
Shih-Shinh Huang, Li-Chen Fu, and Pei-Yung Hsiao

Ant Direction Hybrid Differential Evolution for Solving Economic Dispatch of Power System 197
Sheng-Kuan Wang, Chih-Wen Liu, and Ji-Pyng Chiou

Low-Complexity Bit-Parallel Systolic Multipliers over GF(2m) 203
Chiou-Yng Lee, Chin-Chin Chen,Yuan-Ho Chen, and Erl-Huei Lu

Computational Intelligence Techniques for Building Transparent Construction Performance Models 209
L.Chen, W.Pedrycz, and Philip Chen

Non-contact Mode SPM System Design by Integrating MEMS Electro-static Micro-probe & Laser Doppler Interferometer MEMS Electro-static Micro-probe & Laser Doppler Interferometer 215
Jium-Ming Lin, and Chun-Chieh Lin

Adaptive Control Design for Permanent Magnet Synchronous Motor with Uncertain Parameters: An LMI Approach 221
Chung-Shi Tseng, Rong-Maw Jan, and Jenn-Horng Liaw

Two New Kinds of Class Level Mutants for Object-Oriented Programs 227
Huo Yan Chen and Su Hu

A Tool to Support Automated Testing for Web Application Scenario 233
Cheng-hui Huang and Huo Yan Chen

Table of Contents

Power Signal Predictions by Using Modified Neural Network 239
H. C. Lee, Y. J. Chen, C. Y. Chang, S. J. Chuang, H. C. Huang, and R. C. Hwang

A Neural-Fuzzy Framework for Modeling Car-following Behavior 244
Xiaoliang Ma

The Development of Grey Generating Toolbox Based on Matlab 250
Kun-Li Wen, Yi-Fung Hunag, Cheng-Kai Yeh, and Chien-Wen Wang

Observer-based Switched Control Design for Continuous-time Switched Systems 255
Dongmei Xie and Hong Shi

Design of Scan Converter Using the Locally 2-D Bilinear Interpolation 260
Ming-Chieh Tsai and Ping-Yuan Huang

Haptic Feedback for UAV Tele-operation - Force offset and spring load modification 266
T. Mung Lam, Max Mulder and M. M. van Paassen

Fuzzy and Multilayer Perceptron for Evaluation of HV Bushings 272
Sizwe M. Dhlamini, Tshilidzi Marwala, and Thokozani Majozi

A comparative study between subjective and objective results of a Predicting Human Behaviour Method based on the Expected Utility and the Iterative learning Control. Application to the Car Driving 278
A. CHAALI DJELASSI, P. POLET and F. VANDERHAEGEN,

Research on D0L system based fractal control engine of the workflow management system for re-configurable manufacturing cooperation 286
Dong Hongzhao

A Collaborating Team of Spiking Neural Network Based Robotic Agents for Inaccessible Fluidic Environments 292
Hani Hagras, Martin Colley, Anthony Pounds-Cornish, Gustavo De Souza, Victor Callaghan, George Nikiforidis, Christos Argyropoulos, Achilles Kameas and Frank Murphy

Inverse pseudo-random binary sequence design and its application in identifying of the SCARA-type manipulator 298
Zhi-qian Mei and Yun-can Xue

Why Some Emotional States Are Easier to be Recognized Than Others: A thorough data analysis and a very accurate rough set classifier 304
Martin E. Muller

Research Approaches on Integrated Planning for Iron and Steel Enterprises 310
Bao-lin Zhu, Hai-bin Yu and Xiao-yuan Huang

A K-means Clustering Approach Based on Grey Theory 316
Daisuke Yamaguchi, Guo-Dong Li, Kozo Mizutani, Takahiro Akabane, Masatake Nagai and Masatoshi Kitaoka

A Method of User-oriented Reliability Assessment for Open Source Software and Its Applications 322
Yoshinobu Tamura and Shigeru Yamada

FAT-based Adaptive Control for Flexible-joint Robots without Computation of the Regressor Matrix 328
Ming-Chih Chien and An-Chyau Huang

Decoupling Control of Intracranial Temperature and Pressure for Brain Hypothermia Treatment 334
Lu Gaohua and Hidenori Kimura

Behavioral selection in domestic assistance robots: A comparison of different methods for optimization of utility functions 340
Jimmy Pettersson, David Sandberg, Krister Wolff, and Mattias Wahde

Behavior Fusion of Robot Navigation Using a Fuzzy Neural Network 346
Kai-Tai Song and Jean-Yuan Lin

Table of Contents

Driving Style Classification by Analyzing EEG Responses to Unexpected Obstacle Dodging Tasks 352
Chin-Teng Lin, Sheng-Fu Liang, Wen-Hung Chao, Li-Wei Ko, Chih-Feng Chao, Yu-Chieh Chen and Teng-Yi Huang

Artificial Neural Network Model for Mass Characterization in Breast Palpation 356
Ping-Lang Yen, Kai-Yang Chang, Ming-Kung Chang, Shih-Wei Hsu, and Cheng-Hsin Liu

Low-Power Wireless Transmission of Biosignals Using the Slotted ALOHA Mechanism 362
Hsiao-Lung Chan, Chih-Yu Lu, Chun-Hung Liu, and Ming-An Lin

Construction of Tele-Rehabilitation Platform Using Distributed Common Object Models 367
Chung-Hsien Kuo, Wei-Chao Wang, and Ming-Yih Lee

Development of a Computer-assisted Foot Pressure Biofeedback Sensory Compensation System in Balance Control for Amputees 373
Lee, Ming-Yih, Lin, Chih-Feng, Soon, Kok-Soon

Active Systems Observations and Medical Information: A Single Case Study of Measurement of Personal and Empathic Processes 379
Bhaskar Sripada and Thomas Jobe

How to Teach Medical Concepts Using Animations by Designing Multimedia Instructional Application 387
Usha M Reddy, Bhaskar N Sripada, and Roshni Kulkarni.

Representing Causation in Medicine: How Fuzzy "Sets as Points" Capture the Uniqueness of the Patient, Context, and Change in the Fuzzy Unit Hypercube 395
Cathy M. Helgason and Thomas H. Jobe

CMAC Study with Adaptive Quantization 402
Hung-Ching Lu, Ming-Feng Yeh, and Jui-Chi Chang

Single-Input CMAC Control System with Direct Control Ability 408
Ming-Feng Yeh, Hung-Ching Lu, and Jui-Chi Chang

I-Living: An Open System Architecture for Assisted Living 414
Qixin Wang, Wook Shin, Xue Liu, Zheng Zeng, Cham Oh, Bedoor K. AlShebli, Marco Caccamo, Carl A. Gunter, Elsa Gunter, Jennifer Hou, Karrie Karahalios, and Lui Sha

Smart Pantries for Homes 422
C. F. Hsu, H. Y. M. Liao, P. C. Hsiu, Y. S. Lin, C. S. Shih, T. W. Kuo, and Jane W. S. Liu

APAMAT: A Prescription Algebra for Medication Authoring Tool 430
Han-Chun Yeh, Pi-Cheng Hsiu, Chi-Sheng Shih, Pei-Hsuan Tsai, and Jane W.S. Liu

CaNPAs: A Campus Navigation and Parking Assistant System 438
T. S. Chou, I. Ku, C. H. Wu, L. C. Hsu, Y. S. Lin, Y. T. Chen, T. Y. Huang, and C. T. King

Walker's Buddy: An Ultrasonic Dangerous Terrain Detection System 446
Yating Hsu, S. F. Hsiao, C. E. Chiang, Y. H. Chien, H. W. Tseng, A. C. Pang, T. W. Kuo, and K. H. Chiang

Kannon: Ubiquitous Sensor/Actuator Technologies for Elderly Living and Care 451
John K. Zao, Jwu-Sheng Hu, Jin-Chern Chiou, Yu-Lun Huang, Shu-Chen Li, Zee-Yih Kuo, Ming-Chuen Chuang, Shang-Hwa Hsu, Yu-Chee Tseng, Jane W. S. Liu and Chin-Teng Lin

Automatic Nasal Tumor Detection by grey prediction and Fuzzy C-Means clustering 458
Wen-Chen Huang and Chun-Pin Chang

An Energy Efficient Monitoring of Ad-Hoc Sensor Network with Cellular Automata* 464
Indrajit Banerjee, Sukanta Das, Hafijur Rahaman, and Biplab K Sikdar

Individualized Route Selection for Pedestrian Using Fuzzy Measures and Integrals 470
Yuta Akasaka and Takehisa Onisawa

Examining the Effect of Cost Assignment on the Performance of Cost-Based Classification Systems 476
Tomoharu Nakashima, Yasuyuki Yokota, Gerald Schaefer, and Hisao Ishibuchi

Table of Contents

Simultaneously Mining Fuzzy Inter- and Intra-Object Association Rules 482
Cheng-Ming Huang, Tzung-Pei Hong, and Shi-Jinn Horng

Gabor Wavelets and SVM Classifier for Liver Diseases Classification from CT Images 488
Chien-Cheng Lee and Sz-Han Chen

Trends Recognition in Journal Papers by Text Mining 493
Masahiro Terachi, Ryosuke Saga and Hiroshi Tsuji

Fractal Based JPEG2000 ROI Coding 499
Chien-Shun Lo, Pau-Choo Chung, San-Kan Lee, and Giu-Cheng Hsu

Risk Mining in Hospital Information Systems 502
Shusaku Tsumoto, Kimiko Matsuoka and Shigeki Yokoyama

Improvement of Collaborative Filtering Based on Fuzzy Reasoning Model 507
Toshihiko Watanabe, Shingo Katayama, and Ryosuke Fujioka

Cortex Classification of the Infantile Brain in MRI Images Using Fuzzy Logic 513
Shingo Sueyoshi, Kouki Murata, Syoji Kobashi, Kumiko Ando, Reiichi Ishikura, Katsuya Kondo, Norio Nakao, and Yutaka Hata

Structure Evaluation of Receptive Field Layer in TAM Network 518
Isao Hayashi and Toshiyuki Maeda

Aging effects on face images by varying vertical feature placement and transforming face shape 525
Tetsuya Miyoshi and Megumi Hyodo

Steady-State Genetic Algorithm for Self-localization in Illuminance Measurement of A Mobile Robot 531
Hironobu Sasaki, Naoyuki Kubota, Kazuhiko Taniguchi and Yasutsugu Nogawa

Technology-based Financial Frauds in Taiwan: Issues and Approaches 537
Jau-Hwang Wang, You-Lu Liao, Tyan-muh Tsai, and Garfield Hung

Using Associate Constraint Network with Forward Evaluation to Overcome Cross-lingual Semantic Interoperability Challenge for Crime Information Extraction 542
Christopher C. Yang, Chih-Ping Wei, and Kar Wing Li

Relation Organization of Initial SOM by Node Exchange Using Connection Weights 548
MIYOSHI Tsutomu

Knowledge Representation and Learning Mechanism Based on Networks of Spiking Neurons 553
QingXiang Wu, David Bell, Guilin Qi, and Jianyong Cai

Inducing NNC-Trees Quickly 559
Qiangfu Zhao

Studies on Competitive Parallel Distribution Channels with Move Sequence under Stochastic Demand 565
Yu Qian and Jian Chen

Towards Personalized Services and Products 572
James M. Tien

Exception Diagnosis for Agent-Oriented Services 578
Nazaraf Shah, Chi-Chun Lo, Chun-Lung Huang, Kuo-Ming Chao, and Nick Godwin

Search Performance Quantification on Evolutionary Algorithm —Derivation and Application of Times of Improved Solutions— 584
Tomohiro Yoshikawa and Naotoshi Hoshiya

Multi-Start Node Genetic Network Programming for Controlling Multiple Agents 590
Tadahiko Murata and Takashi Nakamura

The Order Strategies for Competitive Retailers under the Group Buying Auction 596
Jian Chen, Yunhui Liu, Xiaoqiang Cai and Xiping Song

Table of Contents

Optimal Grey Predictor for Speech Spectrum and Its Application to Spectral Quantization 601
Fu-Rong Jean and Bo-Nian Su

Performance of a GA-Based Interference Canceller for MC-CDMA Communication Systems Over Frequency Selective Fading Channels 606
Yung-Fa Huang, Tan-Hsu Tan, and Wei-Cheng Lai

A Novel Genetic Algorithm for Multicast Routing Problem on the QoS Constrain 612
Rung-Ching Chen, Chuen-Chieh Liao, Bernard Ren-Hao Pan and Lin-Yu Tseng

Markov Model Parameters Optimization for Asynchronous Impulsive Noise over Power Line Communication Network 618
San-Yuan Huang, Chin-Su Chang, and Tan-Hsu Tan

Reliable Leadership Behaviors in Online Communication 623
Naohiro Matsumura and Yoshihiro Sasaki

Causal Analysis for Thermal Comfort Votes 629
Akihiro Koretsune, Shingo Kubo, Masayuki Nakano, Hiroshi Tsuji, Yukihiro Jinno and Eiji Mimura

Particle Swarm Optimization with Quasi-Newton Local Search for Solving Economic Dispatch Problem 635
Leandro dos Santos Coelho and Viviana Cocco Mariani

Supply Chain Optimization Using Chaotic Differential Evolution Method 640
Leandro dos Santos Coelho and Heitor Silvério Lopes

Exploring Cognitive Difference in instructional outcomes using Text mining technology 646
Chien-Jen (Norman) Huang, Ping-Heng Tsai, Chia-Ling Hsu, and Reuay-Ching Pan

A Multi-Objective Evolutionary Approach for Fuzzy Optimization in Production Planning 651
F. Jimenez, G. Sanchez, P. Vasant and J.L. Verdegay

The Practice of an Optimal Pricing Strategy for Maximizing Store Profits Using PRISM 657
Katsutoshi Yada and Kosuke Ohno

Knowledge Discovery from the structure of Persuasive Communication 663
Katsutoshi Yada and Naohiro Matsumura

Multiple Solutions for Plant Design Analyses through a Genetic Algorithm with Tabu Lists 669
Takao Terano, Masakazu Takahashi, and Kazutoshi Hanzawa

A Comparative Study of Sampling Methods in Node Histogram Models with Probabilistic Model-Building Genetic Algorithms 675
Shigeyoshi Tsutsui

Data-based Visualization of Scenario Maps on Potential Model 681
Yukio Ohsawa and Shuhei Tsuruoka

Chance Discovery in Credit Risk Management-Estimation of Chain Reaction Bankruptcy Structure by Chance Discovery Method 686
Shinichi Goda and Yukio Ohsawa

Role Based Workflow Modeling 692
Zhigang Liang and Shuren Bai

Role-driven Business Process Models 697
Zhao Weidong, Dai Weihui, and Wu Liang

A Role-based Customer review Mining System 702
Wenqian Shang, Youli Qu, Houkuan Huang, Yongmin Lin, and Hongbin Dong

A Role-Based Approach to Robot Agent Team Design 708
Haibin Zhu

Table of Contents

IEC-Based Image Processing for Texture Mapping functions. 714
Tsuneo Kagawa, Yukihide Tamotsu, Hiroaki Nishino, Kouichi Utsumiya

Interactive Evolutionary CAD System for MEMS Layout Synthesis 719
Raffi Kamalian, Alice M. Agogino, and Hideyuki Takagi

Global Asynchronous Distributed Interactive Genetic Algorithm 725
Mitsunori MIKI, Yuki YAMAMOTO, Sanae WAKE and Tomoyuki HIROYASU

Interactive Evolutionary Computation with Evaluation Characteristics of Multi-IEC Users 730
Shinya Henmi, Shino Iwashita, and Hideyuki Takagi

The Impact of Linear Transformation on SVM Margin 736
Qiang He, Jun-Fen Chen, Ming He and Rui-Xian Zhu

Controlling an Entertainment Robot through Intuitive Gestures 741
Tomonori Hashiyama, Keiichiro Sada, Mitsuru Iwata, and Shun'ichi Tano

A Strategy of Merging Branches Based on Margin Enlargement of SVM in Decision Tree Induction 747
Chenxiao Yang, Xizhao Wang, and Ruixian Zhu

Manifolds of Bag of Pixels: A Better Representation for Image Recognition? 752
Yi Guo and Junbin Gao

A Hybrid Method of EPSO and TS for FACTS Optimal Allocation in Power Systems 757
Hiroyuki Mori and Yukihiro Maeda

Neural Stabilizing Controller Based on Co-evolutionary Predator-Prey Particle Swarm Optimization 763
Atsushi Ishigame, Mitsuharu Higashitani, and Keiichiro Yasuda

A Power System State Estimation Technique in Consideration of Network Topology 769
Hiroyuki Mori and Satoshi Saito

Optimal Generation Scheduling under Competitive Environment 775
Takashi Mitani, Yuji Mishima, Taiji Satoh and Koichi Nara

A PSO Approach for VAR Planning Considering the Slow and Fast VAR Devices Prices 781
Mehdi Eghbal, E.E.El-Araby, Yoichi Ito, Yoshifumi Zoka, and Naoto Yorino

An EPSO-Based Method for State Estimation in Radial Distribution Systems 787
H. Mori and Y. Yamada

A Web Architecture to Support Collaborative Training Content Development and Evaluation 793
Roger F. Counihan, Justin M. DeVoge, and Ellen J. Bass

Using Videos Derived from Simulations to Support the Analysis of Spatial Awareness in Synthetic Vision Displays 799
Matthew L. Bolton, Ellen J. Bass, and James R. Comstock, Jr.

Presenting Information in Simulated Real-Time to Support Part-Task Weather Scenarios 805
Leigh A. Baumgart and Ellen J. Bass

Supporting the Characterization of Sign-Out in Acute Care Wards 811
Richard M. D. Sledd, Ellen J. Bass, Stephen M. Borowitz, and Linda A. Waggoner-Fountain

How Facial features influence the difficulty and consistency of judgments for angry and happy facial expressions: an Item Response Theory approach 817
Takako Saito and Tomoyasu Nakamura

Time Windows-based Team Performance Measures: Design and Implementation 824
Hari Thiruvengada, Damodar N. Bhandarkar, and Ling Rothrock

Possibilistic Petri Nets as a Basis for CNP-Based Bidding Mechanism 830
Jonathan Lee, Hsi-Min Chen, Shang-Pin Ma, Yao-Chiang Wang, and Shin-Jie Lee

Table of Contents

A Simple Approach to Implementing a System for Monitoring Driver Inattention 836
Mu-Chun Su, Chao-Yueh Hsiung, and De-Yuan Huang

Goal Evolution based on Adaptive Q-learning for Intelligent Agent 841
Jong Yih Kuo, Ming Lan Tsai, and Nien Lin Hsueh

Aiding User Intention Satisfaction with Case-Based Reasoning in ATIS applications 847
Chiung-Hon Leon Lee, Yen-Ru Cheng, and Alan Liu

Extending Object-Oriented Programming with Roles for Open Multi-Agent Systems and Its Application to ATIS 853
Jonathan Lee, Shin-Jie Lee, Chia-Ling Wu, and Whan-Yo Deng

Deploy Knowledge Management and ERP Concurrently in Extended Enterprise Environment 859
Shuojia Guo, Chengen Wang, Xiaochuan Luo, Ming Qi, Nini Cao, Chunqing Li, and Lida Xu

Assembly Sequences Algorithm of Car Body for Car Enterprise Information System 865
Shanshan Zhao, Zongbin Li and Feng Wu

An Enterprise Information System in Telecommunication Industry 871
Jiayin Qi, Lida Xu, and Hong Wang

An Algorithm for Multi-way Distance Join Query 876
Yin Liang and Hong Zhang

Lightweight Privacy for Ubiquitous Devices 882
Akira Otsuka, Rie Shigetomi and Hideki Imai

Expenditure Limits in Anonymous Credit Card Systems 887
Shinsuke Tamura, Kazuya Kouro, and Tatsuro Yanase

Recurrent Nasal Papilloma Detection Using a Fuzzy Algorithm Learning Vector Quantization Neural Network 893
Chuan-Yu Chang and Da-Feng Zhuang

Globalizing Local Neighborhood for Locally Linear Embedding 899
Guihua Wen and Lijun Jiang

Robust Mixed H2/H∞ Fuzzy Control via Static Output Feedback 905
Min-Long Lin and Ji-Chang Lo

The Stream System: a Data Collection and Communication Abstraction for Sensor Networks 910
Giuseppe Amato, Paolo Baronti, Stefano Chessa, and Valentina Masi

An Estimator for Multi-Sensor Data Fusion 916
C. Thejaswi, V. Ganapathy, R. K. Patro, M. Raina, and S. K. Ghosh

A Logical Framework for Augmented Simulations of Wireless Sensor Networks 921
Luca Gatani, Giuseppe Lo Re, and Marco Ortolani

ITRI ZBnode: A ZigBee/IEEE 802.15.4 Platform for Wireless Sensor Networks 928
Jin-Shyan Lee and Yang-Chih Huang

A Possible Hardware Architecture of Wireless Sensor Nodes 934
Zhenhuan Zhu and Shuang-Hua Yang

Adaptive Distributed Fair Scheduling and Its Implementation in Wireless Sensor Networks 939
James W. Fonda, Maciej Zawodniok, S. Jagannathan, and Steve E. Watkins

A Self-Organizing Routing Algorithm for Wireless Sensor Networks 945
Fang Yao and Shuang-Hua Yang

Intelligent Monitoring of Sensor Networks Using Fuzzy Logic Based Control 951
Prasanna Sridhar, Asad M. Madni, and Mo Jamshidi

Table of Contents

Modeling and Control of Autonomous Soccer Robots Using Distributed Agent Oriented Petri Nets 957
Chung-Hsien Kuo and In-Hung Lin

Resource-Oriented Petri Net for Deadlock Resolution in Automated Manufacturing Systems with Robots 963
Naiqi Wu and MengChu Zhou

On-Line Identification of Discrete Event Systems by Interpreted Petri Nets 969
Mariagrazia Dotoli, Maria Pia Fanti, and Agostino Marcello Mangini

Schedule Coordination through Negotiation between Train Service Providers in an Open Railway Access Market 975
Chi Wai Tsang and Tin Kin Ho

Diagnosability Enhancement of Discrete Event Systems 981
YuanLin Wen, ChunHsi Li, and MuDer Jeng

Net Verifier of Discrete Event System models expressed by UML Activity Diagrams 987
Tomasz Kowalski

An Extended Object-oriented Petri Nets Modeling Based Simulation Platform for Real-time Scheduling of Semiconductor Wafer Fabrication System 993
Huai Zhang, Zhibin Jiang, Chengtao Guo, and Huiran Liu

Parameterized GSPN Model and Extended Dependability Block Diagram for Reliability Evaluation of Embedded Systems. 999
Sergio Murilo Maciel Fernandes and Paulo Romero Martins Maciel

Lender processes competing for shared resources: Beyond the S4PR paradigm 1005
Juan-Pablo Lopez-Grao and Jose-Manuel Colom

Applying Grey Relational Method to Analyze the QFD Process of Medical Service Quality 1013
Chaang-Yung Kung, Pei-Yi Yang, and Tzung-Ming

The Prediction of First Typhoon Using Hybrid Grey-Based Model 1019
Guo-Dong Li, Daisuke Yamaguchi and Masatake Nagai

Design of Refined Grey Prediction Controller 1025
Chia-Chang Tong and Enrique Barbier

L1-Normed GM(1,1) Models and Reliability Analysis 1031
R. Guo, C. Y. Cheng, and Y. H. Cui

Study on Matrix Solution Method of Grey Matrix Game Based on Full Rank Grey Payoff Matrix 1036
Zhigeng Fang, Sifeng Liu, Xin Wu, Haowei Zhang, and Chuanmin Mi

Study on the Strengthening Buffer Operators and Their Applications 1041
Yaoguo Dang, Sifeng Liu, Chuanmin Mi, and Jing Zhou

Active Control of Broadband Noise 1046
Wen-Kung Tseng

Face Detection Using Eigenface and Neural Network 1051
C.C. Tsai, W.C. Cheng, J.S. Taur, C.W. Tao

Design of A Two-Stage Adaptive Fuzzy Controller 1056
G.H. Lee, J.S. Taur, and C.W. Tao

Temperature Control by Recurrent Fuzzy Network Designed Via Clustering Aided Swarm Intelligence 1062
Chia-Feng Juang, Chao-Hsin Hsu, and Cheng-Da Hsieh

H_∞ Fuzzy Filter Design for Nonlinear Sampled-Data Systems: An LMI Approach 1067
Yen-Fang Li and Chung-Shi Tseng

Design of Interval Type-2 Fuzzy Logic Controller 1073
Ming-Ying Hsiao and Tzuu-Hseng S. Li

Table of Contents

A Study on Generating Good Environment Patterns for Evolving Robot Navigators 1079
Kouichi Sakamoto, and Qiangfu Zhao

Mechanisms of Autonomous Pipe-Surface Inspection Robot with Magnetic Elements 1085
Masayuki Suzuki, Toshihiro Yukawa, Yuichi Satoh, and Hideharu Okano

An Application of Multiobjective Optimization Genetic Algorithm for Cart-Double-Pendulum-System Control 1091
Tung-Kuan Liu, Yao-Chun Shen and Zu-shu Li

Neural Network Aided Dynamic Parameter Identification of Robot Manipulators 1097
Zhao- Hui Jiang, Taiki Ishida, and Makoto Sunawada

Nature versus Nurture: A Cross-cultural Perspective on Conflict Resolution Styles 1103
Zhenzhong Ma and Diana Kao

Refinement of Nash satability using reflexive list functions for the expression of preferences 1109
Takehiro Inohara

Multi Stage Conflict Resolution Process in the Case of Community Disaster Risk Management: A Retrospective Analysis 1115
Suman Ranjan Sensarma and Norio Okada

A Heuristic Algorithm for the Container Loading Problem with Heterogeneous Boxes 1122
Zhoujing Wang, Kevin W. Li, and Xiaoping Zhang

Complexity of Ordering Dynamics under Pure Revenue-Sharing Contracts 1128
Debing Ni, Kevin W. Li, and Xiaowo Tang

Third Party Reviews and Trust Formation 1134
Tsuyoshi Hatori and Kiyoshi Kobayashi

Regional Conflict and Cooperation on Inter-Regional Infrastructure: A General Equilibrium Approach 1140
Kei Fukuyama and Masafumi Tamura

Information Basis for Public Transportation Planning in Rural Areas 1146
Keishi Tanimoto, Shuhei Maki, and Hideyuki Kita

Modeling Water Rights Allocation in the South Saskatchewan River Basin in Canada 1152
Lizhong Wang, Liping Fang, and Keith W. Hipel

Modelling Energy and Transport Infrastructures as a Multi-Agent System using a Generic Ontology 1158
Koen H. van Dam and Zofia Lukszo

Modeling Intermodal Freight Hub Location Decisions 1164
Ackchai Sirikijpanichkul and Luis Ferreira

Shaping Regional Industry-Infrastructure Networks An Agent Based Modelling Framework 1169
Igor Nikolic, and Gerard P.J. Dijkema

The paradox between complexity and reliability of computer infrastructures 1174
S. Daskapan, M. Kaart, and W.G. Vree

Embedded automation for energy applications and its interdependence with the info'structure 1181
Geert Deconinck, Tom Rigole, Koen Vanthournout, Rodica Tirtea, Adrian Dusa, Johan Driesen, and Ronnie Belmans

Ubiquity of Digitalization and Risks of Interdependent Critical Infrastructures 1186
Adrian V. Gheorghe and Markus Schläpfer

Interdependencies and Security Assessment: a Dependability view 1191
Marcelo Masera

Long term optimization of asset replacement in energy infrastructures 1196
Ype C. Wijnia, Martijn S. Korn, Saskia Y. de Jager, and Paulien M. Herder

Table of Contents

Integral Decision Support for Asset Management of Electrical Infrastructures 1203
Johan J. Smit, Ben Quak and Edward Gulski

An Approach of Digital Rights Management for E-Museum with Enforce Context Constraints in RBAC Environments 1210
Chun-Te Chen, Kun-De Lin, Ying-Chieh Wu, and Kun-Lin Lee

Construction of the Enterprise-level RFID Security and Privacy Management Using Role-Based Key Management 1218
Chun-Te Chen, Kun-Lin Lee, Ying-Chieh Wu, and Kun-De Lin

Cluster and Clustering Algorithm Validity in Image Retrieval 1226
Cheng-Yuan Tang, Yi-Leh Wu, and Yung-Chieh Lee

Image Retrieval Based on the Wavelet Features of Interest 1232
Te-Wei Chiang, Tienwei Tsai, and Yo-Ping Huang

Dominant Feature Extraction in Block-DCT Domain 1238
Tienwei Tsai, Yo-Ping Huang and Te-Wei Chiang

Using Minimum Bounding Cube to Discover Valuable Salinity/Temperature Patterns from Ocean Science Data 1244
Yo-Ping Huang, Li-Jen Kao and Frode Eika Sandnes

Locating the Typhoon Center from the IR Satellite Cloud Images 1250
Tsang-Long Pao, Jun-Heng Yeh, Min-Yen Liu, and Yung-Chang Hsu

Delay Sensitive EPON Dynamic Bandwidth Allocation Mechanism 1255
Wei Yen, Shih-Wei Tseng

Study of Routing Protocols for Ocean Surface Communication Networks 1261
Chia-Sheng Tsai and Han-Ping Wang

Copyright Protection Scheme for Satellite Images Using Secret Sharing and Wavelet Transform 1267
Shang-Lin Hsieh and I-Ju Tsai

Characteristics Analysis of Weather Routing by Practical Navigators 1273
Mitsuru Hayashi, and Hiroshi Ishida

Impact of New Navigation Support System for Mariners 1278
Tadatsugi Okazaki and Junji Fukuto

Basic Study of Navigator's Recognition of Radar Target Direction 1283
K. Murai, Y. Hayashi, L. C. Stone, and S. Inokuchi

Evaluation of Ride Comfort of Passenger Craft 1289
Masakazu Arima, Yuuki Tamura, and Masaaki Yoshihira

Direct Perception Interface for Ship-Ship Collision Avoidance 1295
Qiao Liu, Egil Pedersen, Tadatsugi Okazaki, Junji Fukuto, and Kunihiko Tanaka

Mining Molecular Datasets on Symmetric Multiprocessor Systems 1301
Thorsten Meinl, Marc Worlein, Ingrid Fischer and Michael Philippsen

LPC-VQ based Hidden Markov Models for Similarity Searching in DNA Sequences 1307
Tuan D. Pham and Hong Yan

Relaxation Labeling for Cell Phase Identification 1313
Dat T. Tran and Tuan D. Pham

Periodicity Identification of Microarray Time Series Data based on Spectral Analysis 1319
Miew Keen Choong, Kong Chen Lye, David Levy, and Hong Yan

Autoregressive Models for Spectral Analysis of Short Tandem Repeats in DNA Sequences 1324
Hongxia Zhou and Hong Yan

Table of Contents

A Novel Approach Searching for Discriminative Gene Sets 1329
Feng Chu and Lipo Wang

A Novel Support Vector Machine with Class-dependent Features for Biomedical Data 1335
Nina Zhou and Lipo Wang

Does a Mother's Attachment to Her Child Affect Biological Information provided by the Child? -Chaos analysis of fingertip pulse waves of children- 1340
Mayumi Oyama-Higa, Junko Tsujino, and Mitsuko Tanabiki

Analysis of dementia in aged subjects through chaos analysis of fingertip pulse waves 1345
Mayumi Oyama-Higa, Teijun Miao, and Yuko Mizuno-Matsumoto

The Relation between Observers' Psychophysiological Conditions and Human Errors during Monitoring Task 1350
Akira Imanishi and Mayumi Oyama-Higa

Fractal Analysis of Facial Skin Thermogram due to Mental Tasks 1355
Tiejun Miao, Osamu Shimoyama, Toshiyuki Shimizu, and Mayumi Oyama-Higa

Modelling Plethysmogram Dynamics based on Baroreflex under Higher Cerebral Influences 1360
Tiejun Miao, Osamu Shimoyama, and Mayumi Oyama-Higa

Deriving the Accumulation Density Function with Parabolic Trajectories of Particles for Curve 1366
Yu-Kumg Chen and Shuo-Yan Chou

Inconsistency Adjustment in the AHP Using the Complete Transitivity Convergence Algorithm 1372
T.-Y. Tseng, S.-W. Lin, C.-L. Huang, and R. Lee

Fast and Robust Algorithms Using Coplanar Constraints to Estimate Fundamental Matrices 1377
Cheng-Yuan Tang, Hong-Long Chou, Yi-Leh Wu, and Yan-Hung Ding

A Metamodel Approach to Software Process Modeling Based on UML Extension 1383
Minghui Wu, Gang Li, Jing Ying, and Hui Yan

Applying Simulated Annealing Approach for Capacitated Vehicle Routing Problems 1388
S.-W. Lin, K.-C. Ying, Z.-J. Lee and F.-H. Hsi

A New Approach for Solving 0/1 Knapsack Problem 1394
Chou-Yuan Lee, Zne-Jung Lee, and Shun-Feng Su

Vehicle Routing Problems with Time Windows Using Simulated Annealing 1400
S.-W. Lin, K.-C. Ying, Z.-J. Lee and H.-S. Chen

Optimization of Back-Propagation Network Using Simulated Annealing Approach 1406
S.-C. Chen, S.-W. Lin, T.-Y. Tseng and H.-C. Lin

Deriving the Minimum Traversal Function of Three Circles 1412
Chang-Chien Chou, Yu-Kumg Chen, and Shuo-Yan Chou

Spectral Multiplicity Tolerant Inexact Graph Matching 1418
Wei Feng and Zhi-Qiang Liu

A Cluster Ensemble Framework for Large Data sets 1424
Prodip Hore, Lawrence Hall, and Dmitry Goldgof

Explicit Model-Following Design of Propulsion Control Aircraft Using Genetic Algorithms 1430
Gwo-Ruey Yu

Power-Efficient Extensible Architecture for RFID-Assisted Multiple Target Tracking 1436
Ching-Hu Lu, Wen-Hau Liao, Chao-Lin Wu and Li-Chen Fu

Data Mining for Multi-Domain Decision-Making Based on Rough Set Theory 1442
Jhieh-Yu Shyng, Gwo-Hshiung Tzeng, Shu-Huei Hsieh, and Fang-Kuo Wang

Table of Contents

Index Words Selection with ICA 1447
Takeru Yokoi, Hidekazu Yanagimoto and Sigeru Omatu

Learning Mechanisms for Intelligent Fault Diagnosis 1453
Hossam A.Gabbar, Rizal Datu, Hideyuki Fushimi, Mohamed Kamel, and Rixat Abdursul

Remarks on Hands-Free Manipulation System Using Bio-Potential Signals From Simple Brain-Computer Interface 1459
Kazuhiko Takahashi, Takashi Nakauke, and Masafumi Hashimoto

Shape Memorization and Recognition of 3D Objects Using a Similarity-Based Aspect-Graph Approach 1465
Tzung-Min Su, Chun-Chi Lin, Pei-Ching Lin, and Jwu-Sheng Hu

Adaptive Fuzzy Total Sliding-Mode Controller Design and Its Application to Tension Control of a Winding Process 1471
Chung-Chun Kung, Kuo-Ho Su and Lun-Ping Hung

Solving The Imprecise Weight Coefficients Knapsack Problem by Genetic Algorithms 1477
Feng-Tse Lin

Performance Improvement of Multiuser Detection Using a Genetic Algorithm in DS-CDMA UWB Systems over an Extreme NLOS Multipath Channel 1483
Tan-Hsu Tan, Yung-Fa Huang, Chung-Weng Lin, and Ray-Hsiang Fu

Performance Improvement of Multiuser Detector Using Probabilistic Data Association in CDMA Systems 1489
Cheng-Hsiu Li and Jenn-Sen Leu

Control of Multi-Agent Systems Based on Redundant Manipulator Global Optimization Techniques 1494
N. Sadati and E. Elhamifar

Compression-Designs in Artificial and Living Systems 1500
Erlan H. Feria

Predictive-Transform Source Coding With Subbands 1506
Erlan H. Feria

Fast Encryption Method Based on New FFT Representation for the Multimedia Data System Security 1513
Sos S. Agaian and Okan Caglayan

Adaptive Steganographic System for Binary Images using Variable Block Embedding Rate 1519
Sos. S. Agaian and Ravindranath C. Cherukuri

A New Parametrizing Technique for the Derivation of Unbiased Minimum-Variance Filters 1524
Chien-Shu Hsieh

Performing Text Categorization on Manifold 1530
Guihua Wen, Gan Chen , and Lijun Jiang

Clustering-based Locally Linear Embedding 1536
Guihua Wen and Lijun Jiang

Scored Pareto MEC for Multi-Objective Optimization and Its Convergence 1541
Xinling Zhou, Chengyi Sun, and X. Z. Gao

Design of Explicit Model-Following Control for the Spindle Motor in CD-ROM Drives 1548
Gwo-Ruey Yu and Rong-Jun Hong

Nonfragile Guaranteed Cost Control for Uncertain Nonlinear Discrete-Time Systems with Time-Varying State Delay 1554
Nan Xie and Gong-You Tang

Improved Iterative Object-Oriented Reengineering Process based on Dynamic Coupling Measures 1560
Juefeng. Li, Xiaohu. Yang, Bin. Xu and Yongwei. Ding

Table of Contents

Genetic Auto-Tuning and Rule Reduction of Fuzzy PID Controllers 1566
Chia-Nan Ko, Tsong-Li Lee, Han-Tai Fan, and Chia-Ju Wu

Simultaneous Auto-Tuning of Membership Functions and Fuzzy Control Rules Using Genetic Algorithms 1572
Chia-Nan Ko, Tsong-Li Lee, Yu-Yi Fu, and Chia-Ju Wu

Adaptive Decentralized Re-Clustering forWireless Sensor Networks 1578
Chih-Yu Wen and William A. Sethares

DISCUSSION ABOUT A SENSE OF SECURITY AND SATISFACTION 1586
Mie Nakatani, Ryuichi Tabata, and Shogo Nishida

Traffic Monitoring and Vehicle Tracking using Roadside Cameras 1592
Yao-Jan Wu, Feng-Li Lian, and Tang-Hsien Chang

Multi-Robot Movement Design Using the Number of Communication Links 1598
Wei-Hao Hsu, You-Ling Jian and Feng-Li Lian

Sociable Mobile Robots through Self-maintained Energy 1604
Trung Dung Ngo and Henrik Schiøler

Two-phase Particle Swarm Optimization for Load Flow Analysis 1610
T.O. Ting, K.P. Wong, and C.Y. Chung

Web Search with Text Categorization Using Probabilistic Framework of SVM 1616
B. P.C. Lim, M. H. Tsui, V. Charastrakul, and D. Shi

A Maximum Entropy Approach to Chinese Pin Yin Yin-To To-Character Conversion 1622
Xuan Wang, Lu Li, Lin Yao, and Waqas Anwar

Learning Web Categorization with Controlled Generation of Context Features 1626
Alex K.S. Wong, John W.T. Lee and Daniel S. Yeung

Palmprint Classification 1631
Li Fang, Maylor K.H. Leung, Tejas Shikhare, Victor Chan, and Kean Fatt Choon

Core-based Agent for Service-Oriented Market 1636
Pen-Choug Sun, Chun-Lung Huang, Kuo-Ming Chao, Anne James, Chris Bloor, and Nick Godwin

Research of Enterprise Resource Planning in a Specific Enterprise 1642
Tianshe Yang, Jung Choi, Zheng Xi, Yanhong Sun, Chengsu Ouyang, and Yongxuan Huang

A Local Density Based Spatial Clustering Algorithm with Noise 1647
Lian Duan, Deyi Xiong, Jun Lee and Feng Guo

The Benefits Evaluation of ERP Project Investment Based on Real Options 1653
F. Wu, C. Liu, H. Z. Li, K. Gao and J. Tian

Integrate Artificial Intelligence Techniques into Financial Investment Information System 1659
Xiaotian Zhu, Jiwei Wang, and Qian Sun

Evolution - Based Gene Regulatory Network of Yeast Cell Cycle 1665
Shinq-Jen Wu, Cheng-Tao Wu , Chia-Hsien Chou, and Tsu-Tian Lee

Incremental Maintenance of Generalized Multi-supported Association Rules under Transaction Update and Taxonomy Evolution 1670
Ming-Cheng Tseng, Wen-Yang Lin and Rong Jeng

Supply Chain Management Implementation in Perspective of Knowledge Transfer 1676
Chun-Yu Chen, Ching-Yi Chen, Wei-Shuo Lo

Using RFID in Supply Chain Management for Customer Service 1684
Hsiao-Tseng Lin, Wei-Shuo Lo, and Chiao-Ling Chiang

Intelligent Agents in Supply Chain Management as an Early Warning Mechanism 1689
Wei-Shuo Lo, Tzung-Pei Hong, Rong Jeng and Jian-Ping Liu

Table of Contents

An Intelligent Wizard for Automatic Workflow Modeling ... 1695
Tong Sun

Hierarchical Dependence Graphs for Dynamic JDF Workflows ... 1700
Tong Sun and John Walker

RFID-based Tag-Along Displays for Incident Command System Workflow Management ... 1706
Lauren C. Landrigan, Allen E. Milewski, Robert M. Kelly and Jiacun Wang

EPC Workflow Model to WIFA Model Conversion ... 1711
Anni Tsai, Jiacun Wang, William Tepfenhart, and Daniela Rosca

The Impacts on Deposit and Subsidy Policy for Infrastructure PFI Projects ... 1717
Masamitsu Onishi, Lei Shi, and Kiyoshi Kobayashi

Observer-Based Fuzzy Adaptive H∞ Tracking Control for Nonlinear Time-Delay Systems ... 1723
Wen-Shyong Yu

Decentralized Adaptive Fuzzy Iterative Learning Control for Repeatable Nonlinear Interconnected Systems ... 1729
Chiang-Ju Chien and Meng Joo Er

Fuzzy Output Sliding Mode Control for Nonlinear Robot Arms ... 1735
T. C. Kuo, Y. J. Huang, and S. H. Chang

Stabilization for Large-Scale Fuzzy Systems with Decentralized Fuzzy Control ... 1740
Wen-June Wang, Wei-Wei Lin, and Shu-Han Yang

Design of a Nonlinear Boundary Fuzzy Suction Controller Using less Input Energy ... 1745
Kuo-Yang Tu

Decentralized Stabilization of Nonlinear Multiple Time-Delay Interconnected Systems via H-infinity Fuzzy Control ... 1751
Feng-Hsiag Hsiao, Sheng-Dong Xu, Chia-Yen Lin, Yu-Jun Chou, Yu-Ching Chen, and Chih-Huan Wang

TCP Congestion Control Using Fuzzy Regulation Approach ... 1759
Kuang-Yow Lian, Ya-Lun Ouyang, and Yi-Hsiung Liu

Intelligent H∞ Control of Nano-Positioning Systems ... 1765
Gwo-Ruey Yu and C. W. Tao

Design of Fuzzy Controller for Uncertain Time-Delay Systems with Input Containing Sector Nonlinearities and Dead-Zone ... 1771
Chung-Chun Kung and Ti-Hung Chen

Sliding Mode Output Feedback Control of Time-Varying Mismatched Uncertain Systems ... 1777
M. C. Pai and A. Sinha

Enhancements of Representation and Interactivity for Multi-view Video Based on Layered Depth Image ... 1783
Xiaoyu Cheng, Lifeng Sun and Shiqiang Yang

Fast Arc Detection Algorithm for Play Field Registration in Soccer Video Mining ... 1789
Fei Wang, Lifeng Sun, BoYang, and Shiqiang Yang

The Analysis of Offloading H.264 Video Encoder on Mobile Devices for Energy Saving ... 1794
Xiaoli Zhao, Pin Tao, and Shiqiang Yang

Supervised Learning of Motion Style for Real-time Synthesis of 3D Character Animations ... 1800
Yi Wang, Lei Xie, Zhi-Qiang Liu and Li-Zhu Zhou

Towards Top-k Query Answering in Deductive Databases ... 1805
Umberto Straccia

A Real-time Production Control Problem of Failure Prone Systems with Demand Uncertainty ... 1812
J. Liu, Z.Y. Rui , Y. B. Wei, and J. T. Zhao

Table of Contents

A Proposal of Interactive Genetic Network Programming by Fuzzy Structural Modeling **1817**
Takumi Ichimura, Kazuya Sakaguchi, Akira Hara, and Tetsuyuki Takahama

Static Output Feedback Fuzzy Controller Design via a Mixed Approach for Regional T-S Fuzzy System **1823**
Sheng-Ming Wu, Fang-Ming Yu, Chein-Chung Sun, and Hung-Yuan Chung

Introducing Proofs of a Program's Termination in an Undergraduate Software Engineering Course **1829**
Chia-Chu Chiang

Research on Automatic Incident Detection Algorithm Based on Fusion of Freeway Mainline Information and Toll Collection information **1834**
Xiangyuan Yin, Weiming Liu, and Liping Guan

Structural Evolution of Central Pattern Generators for Bipedal Walking in 3D Simulation **1839**
Krister Wolff, Jimmy Pettersson, Almir Heralic, and Mattias Wahde

A Comparative Evaluation of Constructive Neural Networks Methods using PRM and BCP as TLU Training Algorithms **1847**
João R. Bertini, Maria do Carmo Nicoletti and Estevam R. Hruschka Jr.

Remarks on 3D Human Posture Estimation System Using Simple Multi-Camera System **1853**
Kazuhiko Takahashi, Yusuke Nagasawa, and Masafumi Hashimoto

Forecasting closing price indices using neural networks. **1859**
P. B. Patel and T. Marwala

A SA-Based Feature Selection and Parameter Optimization Approach for Support Vector Machine **1865**
S.-W. Lin, T.-Y. Tseng, S.-C. Chen and J.-F. Huang

Scenario Deployment Of The Analytic Hierarchy Process For The Radwaste Repository Site Selection In Taiwan **1868**
Chen Lin

A Preliminary Study of Peer-to-Peer Human-Robot Interaction **1873**
Terrence Fong, Jean Scholtz, Julie A. Shah, Lorenzo Fluckiger,Clayton Kunz, David Lees, John Schreiner, Michael Siegel, Laura M. Hiatt, Illah Nourbakhsh, Reid Simmons, Robert Ambrose, Robert Burridge, Brian Antonishek, Magda Bugajska, Alan Schultz and J. Gr

Controlling Heterogeneous Semi-autonomous Rescue Robot Teams **1879**
M. Waleed Kadous, Raymond Ka-Man Sheh and Claude Sammut

Computational Cognitive Modeling of Operator Behavior in Telerover Navigation **1885**
David B. Kaber, Xuezhong Wang, and Sang-Hwan Kim

Panoramic Image Information Utility for Mobile Robot Exploration **1891**
Justin M. Glasgow, Geb Thomas, Erin Pudenz, Nathalie Cabrol, David Wettergreen, and Peter Coppin

Designing a Quadrupedal Robot Mimicking Cat Locomotion **1897**
Zhang Xiuli, Zheng Haojun, Liu Peng, and Li Guangming

Robust Control for a Biaxial Servo with Time Delay System Based on Neural Network **1901**
Chih-Hsien Yu and Tien-Chi Chen

Case Studies on the Development of Games Using Augmented Reality **1907**
Claudio Kirner, Ezequiel R. Zorzal, and Tereza G. Kirner

A Data Visualization Virtual Environment Supported by Augmented Reality **1913**
Claudio Kirner and Tereza G. Kirner

Modeling and Control of MCFC System Based on Artificial Neural Networks **1919**
Yudong Tian and Hairong Zou

B-Spline Network Based Iterative Learning for Tracking Control of a Piezoelectric Actuator **1924**
Fu-Shin Lee, Chiang-Ju Chien, and Jhen-Cheng Wang

Table of Contents

Learning Students' Learning Patterns with Neural Computing 1930
Chao-Lin Liu

An Adaptive Image Stabilization Technique 1936
Shih-Hsuan Yang and Fu-Min Jheng

An Entropy-based Evaluation Model of Business Strategic Performance 1942
Zhuo Zhang and Xiaofeng Jin

Non-Invasive Infrasound Heart Murmur Detection with a Support Vector Machine (SVM) Classification Approach 1947
Samuel W. Rud, Nicholas St. Jacque, Aaron D. Vant, and Jiann-Shiou Yang

Fuzzy Multiple Attribute Decision Making Based on Interval Valued Intuitionistic Fuzzy Sets 1953
Chunqiao Tan and Qiang Zhang

On line Web-based Maximum Wind Power Monitoring and Control System 1957
H. C. Lin

UAV Tele-operation using Haptics with a Degraded Visual Interface 1963
T. Mung Lam, Valentina D'Amelio, Max Mulder and M. M. (Rene) van Paassen

Using Images to create a Hierarchical Grid Spatial Index 1969
Lukasz A. Machowski and Tshilidzi Marwala

An Application of a Game of Discrete Generalised Pursuit Automata to Solve a Multi-Constraint Partitioning Problem 1975
Geir Horn and B. John Oommen

Fault Diagnosis of Mine Hoist Braking System Based on Wavelet Packet and Support Vector Machine 1983
Guo Xiao-hui, Ma Xiao-ping, and Xu Zhao

Measurement of Driver's Consciousness by Image Processing 2 — Detection of Concentration on Cellular Phone Call from Facial Expression Change coping with Individual Differences- 1988
Mami Yamakita, Kenichi Takahashi, Keiichi Yamada, Osami Yamamoto, and Shin Yamamoto

Identified-Service Support System and Its Application to Network Broadcasting Services 1993
Koichi Tanimoto, Takaaki Yamada, Haruyuki Nakamura, Arisa Fujii, Go Ohtake, Keigo Majima, Yoshihiro Fujita and Hiroyuki Imaizumi

Family System: A Reference Model for Developing Home Automation Applications 1999
Mary Tom and Joaquin Sitte

An Approach of Image Retrieval based on Bayesian and AAM 2005
Ren XuePing, Wan Jian, and Xu XiangHua

An Internet-based Automatic Riveting System using Remote Monitoring and Control 2010
H. C. Lin

Landing Force Controller for a Humanoid Robot: Time-Domain Passivity Approach 2016
Yong-Duk Kim, Bum-Joo Lee, Jeong-Ki Yoo, Jong-Hwan Kim, and Jee-Hwan Ryu

Measurement of Driver's Consciousness by Image Processing — A Method for Presuming Driver's Drowsiness by Eye-Blinks coping with Individual Differences - 2022
Mai Suzuki, Nozomi Yamamoto, Osami Yamamoto, Tomoaki Nakano, and Shin Yamamoto

Problems and Methods of Modelling in Complex Large-Scale Systems Dynamics 2028
Lyudmila K.Kuzmina

PC-based real-time watermark embedding system with standard video interface 2034
Isao Echizen, Koichi Tanimoto, Takaaki Yamada, Masanori Dainaka, Satoru Tezuka, and Hiroshi Yoshiura

Mixed Client Server and Peer to Peer System for Internet Content Providers 2039
T.-Y. Tseng, R. Lee, S.-W. Lin, and T. Han

Table of Contents

Theory of Internet Auctions **2045**
Makoto Yokoo

Privacy Enhanced and Light Weight RFID System without Tag Synchronization and Exhaustive Search **2051**
Masataka Suzuki, Kazukuni Kobara and Hideki Imai

Next Wireless Security Architecture for MIPv6 .... **2057**
Hanane Fathi, SeongHan Shin, Kazukuni Kobara, and Hideki Imai

User-Centric Service Provision Model for Adaptive Ubiquitous Computing Applications **2063**
Yong Zhang, ShenSheng Zhang, SongQiao Han, and HongXia Tong

A Correspondence-Based Software Toolkit for Image Registration **2069**
Chia-Ling Tsai, Charles V. Stewart, Amitha Perera, Ying-Lin Lee, Gehua Yang, and Michal Sofka

Balancing Control of Sliding Inverted-Wedge System: classical-method-based compensation **2075**
Shinq-Jen Wu, Cheng-Tao Wu, Yung-Yi chiou, Chin-Teng Lin and Yi-Nung Chung

Parallel Optimization Based on Generalized Cellular Automata **2081**
Dianxun Shuai, Li D. Xu, and Bin Zhang

Particle Algorithm for Lossless Data Compression **2087**
Dianxun Shuai, Ping Zhang, and Bin Zhang

A Swarm Intelligence Approach to Parameters Identification of Chaotic Systems **2093**
Jiann-Horng Lin and Meng-Chen Yeh

The Circuital Design of Generalized Cellular Automata for Parallel Optimization **2099**
Dianxun Shuai, Li D. Xu, Qing Shuai, and Bin Zhang

Cellular Automata for Self-Organizing Data Clustering **2105**
Dianxun Shuai, Li D. Xu, Bin Zhang, and Yumin Dong

Particle Dynamics Approach to Multi-Agent Systems **2111**
Dianxun Shuai, Qing Shuai, Li D. Xu, and Yumin Dong

Task-based Dynamic Fault Tolerance for Humanoid Robots **2117**
Masayuki Murakami

Optimal Stochastic Disturbance Rejection Design for Discrete-time Systems with Time-delay **2123**
Hui-Ying Sun and Gong-You Tang

Simple Algorithms for Least Square Support Vector Machines **2129**
Hsu-Kun Wu, Pao-Jung Chen, and Jer-Guang Hsieh

Towards a Universal Language for Distributed Intelligent Robot Networking **2135**
Masao Yokota

Synthesis of Transcription Control with Dynamic Event-Controllability **2141**
Peter C. Y. Chen

Toward Universalizing Common Skills of Ship Navigators **2147**
K. Murai, L. C. Stone, and Y. Hayashi

A Nonlinear Programming Approach for Optimal Large-Angle Attitude Control of Rigid Spacecrafts by Momentum Transfer **2152**
Chi-Ching Yang and Chia-Ju Wu

Adaptive Filtering for Unstable Power System Harmonics using Artificial Network **2158**
H. C. Lin

Three-parameter Sequential Minimal Optimization for Support Vector Classification **2164**
Yih-Lon Lin, Jyh-Horng Jeng, and Jer-Guang Hsieh

Table of Contents

Real Time Large Motion Feature Tracking by Matching Characteristic Curves via Dynamic Programming 2170
Cheng-Hung Ko and Yi-Ping Hung

A Visual Servo Controller for Lateral Navigation of Mobile Vehicles in Path Tracking Applications 2176
Jong-Hann Jean, Tien-Pao Wu, and Feng-Li Lian

Internet-Based Fuzzy Decentralized Microprocessor Control for a Two- Dimensional Piezo-Driven System 2182
Chih-Lyang Hwang and Li-Jui Chang

Discovery and Application of New Index for Cognitive Psychology 2188
Mayumi Oyama-Higa and Tiejun Miao

Distributed Fault Diagnosis for Networked, Embedded Automotive Systems 2193
Jianhui Luo, Kihoon Choi, Krishna R. Pattipati, Liu Qiao, Shunsuke Chigusa

A New Heuristic Method for Job-Shop Scheduling Problem 2200
Kuang-Ping Liu

A Solution for Dedicated Machine Constraint in Semiconductor Manufacturing 2207
Arthur M.D. Shr, Alan Liu, and Peter P. Chen

The Intelligent Numpad: Detection of Mode from Spatial and Temporal Keystroke Characteristics 2213
Frode Eika Sandnes and Yo-Ping Huang

Robust VQ-Based Digital Image Watermarking for Mobile Wireless Channel 2219
Chuang Lin , Jeng-Shyang Pan, and Bin-Yih Liao

A Document Clustering Approach for Search Engines 2224
Chun-Wei Tsai, Ting-Wen Liang, Jiun-Huei Ho, Chu-Sing Yang and Ming-Chao Chiang

Detecting Problem Behavior in Children from Biological Signals: Validation through Chaos Analysis 2230
Junko Tsujino, Mayumi Oyama-Higa, and Mitsuko Tanabiki

Micro-Controller Unit Application in Fuzzy Battery Equalization Control for Battery String 2235
Yuang Shung Lee, Szu Han Chen, and Yi Pin Ko

Investigating the Effect of Sampling Methods for Imbalanced Data Distributions 2241
Show-Jane Yen, Yue-Shi Lee, Cheng-Han Lin and Jia-Ching Ying

Ultrasound Imaging Optimization by Using Data Mining Techniques 2247
Bo Peng and Dong C. Liu

Fuzzy Ultrasonic System Design in Medicine 2252
Yutaka Hata, Maki Endo, Kensuke Iseri, Syoji Kobashi, and Katsuya Kondo

Enterprise Information Systems Evaluation 2258
Bin Song, Jingao Zhang, and Pengfei Li

Development of an Integrated Project Management Information System for Aerial Enterprises and Its Key Technologies 2262
Wei Xiao and Qingqi Wei

Research on Information Intergrated Management in Societal E-service 2267
LIU Yong, ZHANG Jing

Quantum Particles Model for Data Clustering in Enterprise Computing 2272
Dianxun Shuai, Bin Zhang, and Yumin Dong

Techniques, Process, and Enterprise Solutions of Business Intelligence 2278
Li Zeng, Lida Xu, Zhongzhi Shi, Maoguang Wang, and Wenjuan Wu

Toward A High-Level Reasoning Module for Enterprise Information Systems 2283
James D. Jones

Table of Contents

Critical Resources Identification in Constant Resource Constrained Projects 2291
Wanan Cui, Jiajun Qin, Xiunin Cao, Chaoyuan Yue, and Zheng Yin

The Influence on an Activity's Total Float of a Change in its Duration in Networks with Generalized Precedence Relations (GPRs) 2295
Wanan Cui, Jiajun Qin, and Chaoyuan Yue

Criticality Measurement in PERT Networks 2299
Wanan Cui, Jiajun Qin, and Chaoyuan Yue

Study on The Model for Water Resources Level Pricing Based on Information Integration 2303
Liu Renjing and Si Xunlian

A Vision-Based Parking Lot Management System 2307
Sheng-Fuu Lin, Yung-Yao Chen, and Sung-Chieh Liu

Genetic Algorithms for Noise Reduction in Tire Design 2313
Matthias Becker

DEA as Strategy Decision Tool for Performance Improvement 2318
Shingo Aoki, Yuki Sato and Hiroshi Tsuji

Design of Magnetic Wheels in Pipe Inspection Robot 2324
Toshihiro Yukawa, Masayuki Suzuki, Yuichi Satoh, and Hideharu Okano

Event-driven Generation of Periodic Hoist Schedules 2330
Claudia Fiedler

Robustness of Front-Wheel-Steered Vehicles with the Angle Controllers Connected to Actual Lane Command 2336
Bing-Fei Wu and Shih-Meng Chang

Cognitive Psychological For Urban Plan & Architecture Using the Virtual Reality System 2342
Reika Sato-Wang

A Robust Speech Enhancement System for Vehicular Applications Using H∞ Adaptive Filtering 2348
Chieh-Cheng Cheng, Wei-Han Liu, Chia-Hsing Yang, and Jwu-Sheng Hu

A Study on the Annualized Medical Expense Prediction Model of the Bureau of National Healthy Insurance--The Application of the Grey Prediction Theory 2354
Ker-Tah Hsu, Tzung-Ming Yan, and Pei-Wen Liu

A Cognitive-Oriented Architecture to Realize Autonomous Behavior Part I: Theoretical Background 2360
Elmar Ahle and Dirk Söffker

A Cognitive-Oriented Architecture to Realize Autonomous Behavior Part II: Application to Mobile Robotics 2366
Elmar Ahle and Dirk Söffker

Genetic Tuning of Fuzzy Rule Deep Structures for Efficient Knowledge Extraction from Medical Data 2373
Alessandro G. Di Nuovo and Vincenzo Catania

Evaluation of Criticality Analysis Measurements in Resource-Constrained Projects 2379
Wanan Cui, Bin Song, Chaoyuan Yue, and Jiajun Qin

On the Design of In-vehicle Advice System 2387
Qiao Liu, Hiroko Itoh, and Kenji Yoshimura

Study on Motion Forms of Mobile Robots Generated by Q-Learning Process Based on Reward Databases 2393
Masayuki Hara, Masashi Inoue, Haruhisa Motoyama, Jian Huang, and Tetsuro Yabuta

A Sequential Learning Algorithm for Collaborative Filtering With Linear Fuzzy Clustering 2399
Katsuhiro Honda, Ichihashi Hidetomo and Akira Notsu

Table of Contents

Computational Model of Intention-Oriented Visual Attention 2405
Wei-Song Lin and Chun-Hsiung Fang

Identifying Commonly-Used Gestalt Principles as a Design Framework for Multi-Sensory Displays 2410
Dempsey Chang and Keith V. Nesbitt

Sliding Mode Genetic Speed Control of Synchronous Reluctance Motor 2416
Chih-Huang Tseng, Huann-Keng Chiang, and Chien-An Chen

Automatic Extraction of Information about the Molecular Interactions in Biological Pathways from Texts Based on Ontology and Semantic Processing 2422
Yu-Ting Huang, Hsiang-Yuan Yeh, Shih-Wu Cheng, Chien-Chih Tu, Chi-Li Kuo, and Von-Wun Soo

Snake-Based SFS Recovery of Layered Manufacturing Surfaces 2428
Izzat Bakhadyrov and Mohsen A. Jafari

A Fleet Monitoring System for Advanced Tracking of Commercial Vehicles 2434
Asvin Goel and Volker Gruhn

Three and Four Phase Scenarios for Dynamic Document Organization 2440
Taeho Jo and Nathalie Japkowicz

Experimentation Framework for Investigating Compensatory and Noncompensatory Decision-Making 2446
Jing Yin and Ling Rothrock

Issues on Short-Term Scheduling of Oil Refinery 2452
Naiqi Wu, Yanming Qian, MengChu Zhou, and Feng Chu

Predicting Breast Tumor via Mining DNA Viruses with Decision Tree 2458
Mu-Chen Chen, Hung-Chang Liao, Cheng-Lung Huang

Creating and Annotating Affect Databases from Face and Body Display: A Contemporary Survey 2463
Hatice Gunes and Massimo Piccardi

Tissues Classification for Breast MRI Contrast Enhancement Using Spectral Signature Detection Approach 2471
Pau-Choo Chung, Chuin-Mu Wang, Sheng-Chih Yang and Hsian-He Hsu

Data-driven Generation of Decision Tree based on Ensemble Multiple-instance Learning for Motion Retrieval 2476
Jian Xiang, Yueting Zhuang, and Fei Wu

Second-Order Belief Propagation and Its Application to Object Localization 2482
Yong-Dian Jian and Chu-Song Chen

Design and Implementation of an FPGA-based Motion Command Generation Chip 2488
Ke-Han Su, Chih-Kuan Hu, and Ming-Yang Cheng

Wavelet Transform Based Accurate Estimation of Hemodynamic Response Function in functional MR images 2494
Syoji Kobashi, Yuri T. Kitamura, Katsuya Kondo, Toshio Yanagida, and Yutaka Hata

Advanced Motion Control for Wheelchair in Unknown Environment 2500
Seiichiro Katsura, and Kouhei Ohnishi

A Link Prediction Approach to Anomalous Email Detection 2506
Zan Huang and Daniel D. Zeng

A Fast Updated Frequent Pattern Tree 2512
Tzung-Pei Hong, Jun-Wei Lin, and Yu-Lung Wu

A Comparison of Local Analysis, Global Analysis and Ontology-based Query Expansion Strategies for Bio-medical Literature Search 2518
Xuheng Xu, Weizhong Zhu, Xiaodan Zhang, Xiaohua Hu, and Il-Yeol Song

Table of Contents

Privacy-Oriented Collaborative Learning Systems 2524
Justin Zhan and Stan Matwin

Towards Parameter-less and Similarity-based Fuzzy Clustering based on PCM Method 2528
Vincent S. Tseng and Ching-Pin Kao

Meaning of Marginal Distributions in a Contingency Table 2534
Shusaku Tsumoto and Shoji Hirano

On the Nature of Degree of Indiscerniblity for Rough Clustering 2540
Shoji Hirano and Shusaku Tsumoto

Managing Information Flows on Discretionary Access Control Models 2546
Tsau Young Lin

Formal Concept Analysis and Document Clustering via Granular Computing 2550
Tsau Young Lin and I-Jen Chiang

Granulation Based on Hybrid Information Systems 2555
Tuan-Fang Fan, Churn-Jung Liau, Duen-Ren Liu, and Gwo-Hshiung Tzeng

Mining Fuzzy Multiple-level Association Rules under Multiple Minimum Supports 2560
Yeong-Chyi Lee, Tzung-Pei Hong, and Tien-Chin Wang

Mining Sequential Patterns on a Grid-Computing Environment 2566
Chih-Hung Wu and Yu-Chieh Lo

A Performance Comparison of the ZM, PZM and LM in the Face Recognition System in Presence of Salt-pepper Noise 2572
Karim Faez and Nacer Farajzadeh

Application of Feature Selection and Fuzzy ARTMAP to Intrusion Detection 2577
Christina B. Vilakazi and Tshilidzi Marwala

An Efficient Multi-Agent Q-learning Method Based on Observing the Adversary Agent State Change 2583
Ruoying Sun and Gang Zhao

Adapting User Interface to Expedite Physician Order Entry: A Frontline to Ensure Patient Safety 2589
Chiang S. Jao and Daniel B. Hier

Optimal Sliding Mode Control for Linear Systems with Time-delay 2594
Rui Dong and Gong-You Tang

A Fast Mean Shift Procedure with New Iteration Strategy and Re-sampling 2599
Huimin Guo , Ping Guo, and Hanqing Lu

A Learning-by-Metaphor Human-Machine System 2604
Stuart Rubin

Fault Diagnosis, Prognosis and Self-Reconfiguration for Nonlinear Dynamic Systems Using Soft Computing Techniques 2610
Paul P. Lin and Xiaolong Li

Robust Image Measurement and Analysis Based on Perspective Transformations 2616
Bing-Fei Wu and Chuan-Tsai Lin

Multi-point Tabu Search based on Proximate Optimality Principle 2622
Daichi Niizuma, Keiichiro Yasuda, and Atushi Ishigame

Adaptive Particle Swarm Optimization- Self-coordinating Mechanism with Updating Information - 2628
Teruyoshi Yamaguchi and Keiichiro Yasuda

Hierarchical Decentralized Autonomous Control in Super-Distributed Energy System 2634
Tsunayoshi Ishii and Keiichiro Yasuda

Table of Contents

Particle Swarm Optimization incorporating a Preferential Velocity-Updating Mechanism and Its Applications in IIR Filter Design 2640
Heng-Chou Chen and Oscal T.-C. Chen

Anomaly Instruction Detection of Masqueraders and Threat Evaluation Using Fuzzy Logic 2646
Yingbing Yu and James H. Graham

Continuation Method of Backstepping Tracking Control for Car-Like Mobile Robots 2652
Li-Sheng Wang, Fan-Ren Chang, and Pu-Sheng Tsai

Robust H∞ Control for Interval Descriptor Systems 2658
Hung-Jen Lee, Wen-Jian Xie, Hong-Wei Chen, Shih-Wei Kau, and Chun-Hsiung Fang

A Multi-Objective Optimization for Power Economic Dispatch 2664
Chao-Lung Chiang and Chang-Wei Chai

H∞ Control for Discrete-Time Fuzzy Descriptor Systems 2669
Hung-Jen Lee, Shih-Wei Kau, Ching-Hsiang Lee, Lin Hong, Hong-Zhi Yang, and Chun-Hsiung Fang

Active Contour Model Based on Multi-Population Particle Swarm Optimization 2675
Chun-Chieh Tseng, Jyh-Horng Jeng, and Jer-Guang Hsieh

Abduction and Chance The Extra-Theoretical Dimension of Chance Discovery in Science 2680
Lorenzo Magnani

A Development Process Proposal for the ERP5 System 2687
R. A. De Carvalho and R. De Campos

Automatic Learning of Hybrid Fuzzy Controller for the Optical Data Storage Device 2693
Leehter Yao and Po-Zhao Huang

Incremental Workflow Mining with Optional Patterns 2699
Weixiang Sun, Tao Li, Wei Peng, and Tong Sun

On-line Load Optimization for Two Way Load Management System 2707
Hau-Ren Lu and Leether Yao

Visual Evoked Potentials for Image Quality Assessment with Scale Space Approach 2713
Hidehiko Hayashi, and Hidetoshi Nakayasu

Nonlinear Analysis of Heart Rate Variability and Plethysmogram in Subjects with Normal and Abnormal Cardiovascular Function 2719
Tiejun Miao, Teruto Hashiguchi, and Ikuro Maruyama

Real-time Health Information Acquisition and Alarm System Based on Bluetooth and GPRS Communication Technologies 2725
Fang Yanan, Lu Xinghua, and Li Huaizu

Experience on the Implementation of a Collaborative Virtual Environment for Educational Applications 2730
André Luiz Satoshi Kawamoto, Tereza Gonçalves Kirner, and Claudio Kirner

Ontology-Based Automatic Chief Complaints Classification for Syndromic Surveillance 2737
Hsin-Min Lu, Daniel Zeng, and Hsinchun Chen

Understanding emotion through drawings comparison between hearing-impaired people and people with normal hearing abilities 2743
Rumi Hiraga, Nobuko Kato, and Teruo Yamasaki

A Simulation Study on Dispatching Rules in Semiconductor Wafer Fabrication Facilities with Due Date-based Objectives 2749
Tsung-Che Chiang and Li-Chen Fu

Effective and Fast Optimization for a Dynamic Model of the Drosophila Circadian Oscillator 2755
Shin. Tanaka, Hiroyuku. Kurata, and Takeshi. Ohashi

Table of Contents

A neural network-based automatic summarization for the minutes of local assemblies 2761
Ryosuke Fujioka and Hiroshi Narazaki

Decision of Route Diversion Point on Freeway Corridors under a Global Route Guidance System Framework 2767
Shou-Ren Hu and Chung-Yung Wang

The Performance Analysis in MPLS Network Recovery Using M/G/1 Queueing Model 2773
Ling-Feng Chiang and Jiang-Whai Dai

Complex-Valued Reinforcement Learning 2778
Tomoki Hamagami, Takashi Shibuya, and Shingo Shimada

Solving Nonlinear Constrained Optimization Problems by the ε Constrained Differential Evolution 2783
Tetsuyuki Takahama, Setsuko Sakai, and Noriyuki Iwane

Analyzing Pedestrians' Walking Patterns Using Single-Row Laser Range Scanners 2789
Xiaowei Shao, Huijing Zhao, Katsuyuki Nakamura, Ryosuke Shibasaki, Rong Zhang and Zhengkai Liu

Distinctive Personal Traits for Face Recognition Under Occlusion 2795
Ping-Han Lee, Yun-Wen Wang, Ming-Hsuan Yang, Jison Hsu and Yi-Ping Hung

Study on Algorithm of Grey Numbers and Grey Algebraic System 2801
Si-feng Liu and Zhi-geng Fang

Network Broadcasting System Using Viewer Information 2806
Arisa Fujii, Haruyuki Nakamura, Go Ohtake, Keigo Majima, Yoshihiro Fujita, Hiroyuki Imaizumi, Koichi Tanimoto and Takaaki Yamada

Forecasting OF LYG Port Effect On LX Highway Traffic Based ON GM (1,1) 2812
Jian-Ling Wang, Si-Feng Liu, Zhi-Geng Fang, Wei-Hang Wang, and Liu Shen

Normalized Radial Basis Function Network with Hierarchical Deterministic Annealing for Electricity Price Zone Forecasting 2816
H. Mori and A. Awata

Improving Optimal Linear Associative Memory Using Data Partitioning 2822
Doosan Baek and Se-Young Oh

Research of Rrogram Process Time Post-evaluation Grey Critical Path Algorithm Method Based on Grey Data Advantage Relationship 2828
Xuewen Tang, Sifeng Liu, Zhigeng Fang, Chuanmin Mi, Xiaogang Guo, and Zhirui Qi

Study on Grey Fixed Weight Clustering Decision-making Based on Entropy Weight 2834
Chuanmin Mi, Sifeng Liu, Yaoguo Dang, and Jing Zhou

Study on Chain Structure Model of Industry Clusters Grey Evolutionary Game Based on Symmetric Case 2839
LU Fang , LIU Si-feng ,FANG Zhi-geng, and HU Yong

The Measurement and Calculation of Technology Progresses Contribution Rate of Chinese Provinces basing on the same Technology Base-point 2844
XU Xiang-min, FANG Zhi-geng, MA Shao-lin, ZHANG Xue-wei

Measurement and Analysis of Contribution of Economic Factors to Economic Growth in Six Provinces and Shanghai City of East China Based on the Same Technique 2850
SHI Hong-xing, LIU Si-feng, DU Hong-yun, XU Xiang-min

A study of emotional motion description by motion modification rules using adjectival expressions 2856
Atsushi Yamaguchi, Yoshikazu Yano, Shinji Doki, and Shigeru Okuma

Robust Mean Shift Tracking Based on Multi-Cue Integration 2862
Hong Liu, Ze Yu and Hongbin Zha

Optimal Sliding Manifold Design for Nonlinear Systems Based on Sensitivity Approach 2869
Hai-Ping Pang and Gong-You Tang

Table of Contents

Management of Cross-enterprise Processes based on a Service-oriented Workflow Framework 2875
Wei Wei, Weihui Zhang, and Huijuan Lu

Traffic Information Real-Time Monitoring Based on A Short-Long Term Algorithm 2881
Cao Kai, Kai-Wang Zhang and Y. Hamamatsu

Efficient Block-Based Medial Axis Transforms Based on L∞ Metric 2887
Yuh-Rau Wang

Analysis about Efficiency of Indirect Media Communication on Multi-agent Cooperation Learning 2892
Gang Zhao and Ruoying Sun

Adaptive Contouring Control for High-Accuracy Tracking Systems 2898
Ni Chen, Yunjiang Lou and Zexiang Li

Using a Multiagent Scheduling System for Dedicated Machine Constraint in Semiconductor Manufacturing 2904
Alan Liu, Peter P. Chen, Arthur M.D. Shr, and Yen-Ru Cheng

An Integrated Description for Intelligent Processing of Closely Related Engineering Objects 2910
László Horváth and Imre J. Rudas

General Information Platform of ITS based on Web Service 2916
Jianghua Zheng

Coarse-to-Fine Fingerprint Matching Using Principal Gabor Basis Functions 2921
C.J. Lee, T.N. Yang, I.H. Jeng, and K.L. Lin

Design of Peak-finding Algorithm on Acquisition of Weak GPS Signals 2927
W. L. Mao, A. B. Chen, Y. F. Tseng, F. R. Chang, H. W. Tsao, and W. S. Huang

Real-time Detection of Slow Moving and Temporarily Stationary Objects 2933
Ming-Yang Cheng, Chun-Kai Wang, and Hung-Wen Wu

Enhancing Model-building Efficiency in Extended Compact Genetic Algorithms 2939
Masaharu Munetomo, Yuta Satake, and Kiyoshi Akama

KeyGraph-based BBS for Online Chance Discovery 2945
Yuta Seo, Yoshihiro Iwase, and Yasufumi Takama

Supplier Selection model based on distance measure between intuitionistic fuzzy sets 2950
Yuantao Song, Qiang Zhang, and Xiaoguang Zhou

Application of the ARIMA Models to Urban Roadway Travel Time Prediction — A Case Study 2955
Daniel Billings and Jiann-Shiou Yang

Reduced-Complexity Radial Basis Function-Assisted Turbo Equalization for Dispersive Rayleigh-Fading Channels 2961
Kun-Huang Kuo, Jenn-Kaie Lain, and Chia-Tia Huang

Ontology Mapping Approach Based on Parsing Graph 2967
Wang Zongjiang, Wang Yinglin, and Du Tao

Estimating Parameters of Kernel Functions in Support Vector Learning 2972
Yi-Chao Chan, Wan-Jui Lee and Shie-Jue Lee

Multivariate Time Series Prediction by Neural Network Combining SVD 2978
Min Han, Mingming Fan, and Zhiwei Shi

Kernel ICA Feature Extraction for Spectral Recognition of Celestial Objects 2984
Ling Bai, Anbang Xu, Ping Guo, Yunde Jia

A Hybrid Ant Colony Algorithm for Capacitated Vehicle Routing Problem 2989
Liu Zhishuo and Chai Yueting

Table of Contents

Intelligent Space as a Fire Detection System 2994
Primo Podrzaj and Hideki Hashimoto

Multi-Objective Decision Making for Vehicle Routing Problem with Fuzzy Due Time 2999
Jeng-Jong Lin

Vehicle Matching between Adjacent Intersections by Vehicle Type Classification 3005
Hisato Kuroiwa, Takanori Kawahara, Shunsuke Kamijo and Masao Sakauchi

Curvature Domain Image Stitching 3011
Simon T.Y. Suen, Edmund Y. Lam, and Kenneth K.Y. Wong

An Integrated Approach to Process Design for Air Cargo Transportation 3017
Chih-Hsien Chen and Shuo-Yan Chou

A Watermarking Scheme Based on SVM and Tolerable Position Map 3023
Shwu-Huey Yen, Chia-Jen Wang, and Yang-Ta Kao

Feature Selection in Source Camera Identification 3029
Kai San Choi, Edmund Y. Lam, and Kenneth K. Y. Wong

Study on Supporting Group Discussions by Improving Discussion Skills with Ex Post Evaluation 3034
Yusuke Omori, Kyoko Ito, Shogo Nishida, and Tomoki Kihira

Neuro-Fuzzy Implementation of a Self-Tuning Fuzzy Controller 3040
R. K. Mudi , Chanchal Dey, and T. T. Lee

Monitoring Multivariate Processes Using an Adaptive T^2 Chart 3046
Kaibo Wang and Fugee Tsung

A Novel Loop Filter Design for Phase-Locked Loops 3052
Y.S. Chou, W.L. Mao, Y.C. Chen and F.R. Chang

Inhabitants Tracking in a Cluttered Home Environment via Floor Load Sensors 3059
Wen-Hau Liau, Chao-Lin Wu, and Li-Chen Fu

3-D Human Navigation System with Consideration of Neighboring Space Information 3065
Shohei Koide and Masami Kato

Prediction of Deskwork Stress with Visual Display Terminal by Human Immune Substance in Saliva 3071
Shusaku Nomura

A detection method of mura on a coated layer using interference light 3077
Kazutaka Taniguchi, Kunio Ueta, and Shoji Tatsumi

A Probabilistic Walk Path Model Focused On Foot Landing Points And Human Step Measurement System 3083
Takehiro Horiuchi, Masatomo Kanehara, Satoshi Kagami, and Yoshihiro Ehara

A Pupil Diameter Measurement System for Accident Prevention 3089
Takayuki Shinoda and Masami Kato

Fast Scheme for the Four-Step Search Algorithm in Video Coding 3094
C. J. Duanmu

How to Define the Condition of an Infrastructure for Different Asset Management Purposes? 3099
Juha Äijö, Mónica Altamirano, and Margot Weijnen

Identifying Sensitivity of Users to Alert Display Parameters in Graphical User Interfaces 3104
Hiroshi Igarashi and Masayoshi Kakikura

A Walkthrough Image Generation for Facility Guidance by Interpolating Omnidirectional Images 3110
Yuji Hoshi and Masami Kato

Developing Mobile Agent-Based Systems for Mobile Commerce 3115
Wei-Po Lee and Li-Jen Liu

Table of Contents

A Failure/Fault Diagnoser Model for Autonomous Agents under Presence of Disturbances 3121
Peng Zhao, Ardavan Amini, and Mohsen A. Jafari

Determining Sink Node Locations in Wireless Sensor Networks 3126
Lili Yang

Powering Wireless Sensor Nodes using Ambient RF Energy 3131
Shantanu A. Bhalerao, Abhishek V. Chaudhary, Raghavendra B. Deshmukh, Rajendra M. Patrikar

Requirements and Open Issues in Distributed Detection of Node Identity Replicas in WSN 3137
Mauro Conti, Roberto Di Pietro, Luigi V. Mancini, and Alessandro Mei

Filling Holes in Meshes and Recovering Sharp Edges 3143
Tongqiang Guo, Jijun Li, Jianguang Weng, and Yueting Zhuang

Strategy Based Interactive Value-Focused Thinking for Discovering the Future Chance 3148
Chao-Fu Hong, Meng-Yuan Sung, Yan-Ru Li, Leuo-Hong Wang, and Tsai-Hsia Hong

Exploring Cognitive Difference in Education using Average Path Length of Concept Map 3153
Yan-Ru Li, Guo-En Tong, Chao-Fu Hong, and Leuo-hong Wang

Consultative-sales support of fashion garments by scenario creation 3157
Shingo Murata

Regularized Fuzzy Clustering by Confusion Degree based on Dempster-Shafer Theory 3162
Tomohito Esaki, Tomonori Hashiyama, and Yahachiro Tsukamoto

Real-Time Arm Tracking System Using Example-based Matching and Local Optimization 3168
En-Wei Huang and Li-Chen Fu

Solving Nurse Scheduling Problem by Integer-Programming-Based Local Search 3174
Seiya Hasegawa and Yukio Kosugi

A Developmental Robot Vision System 3181
Xing Zhang and Mark H. Lee

Design of Sign Sounds using an Interactive Genetic Algorithm 3187
Mitsunori Miki, Hiroko Orita, Sanae H.Wake and Tomoyuki Hiroyasu

Mining User Preferences of Multimedia Interfaces with K-modes 3192
Kyriacos A. Chrysostomou, Enrique Frias-Martinez, Sherry Y. Chen, and Xiaohui Liu

Watershed Segmentation for Medical Ultrasound Images 3198
B. Deka and D. Ghosh

Programming Language Design in Cybernetics Applications 3204
Trong Wu

An LMI Approach to Mixed H2/H∞ Model Following Based Fuzzy Control for Nonlinear Dynamic System 3210
A.H. Besheer, H.M.Emara and M.M.Abdel Aziz

GRIDBSCAN: GRId Density-Based Spatial Clustering of Applications with Noise 3216
Ozge Uncu, William A. Gruver, Dilip B. Kotak, Dorian Sabaz, Zafeer Alibhai, and Colin Ng

Personal Information eWallet 3222
Sabah S. Al-Fedaghi, and Mahmoud M. Taha

Clonal Optimization of Negative Selection Algorithm with Applications in Motor Fault Detection 3230
X. Z. Gao, S. J. Ovaska, X. Wang, and M.-Y. Chow

Scaling Text Classification with Relevance Vector Machines 3236
Catarina Silva and Bernardete Ribeiro

A Hybrid Particle Swarm Optimization Method 3242
X. Wang, X. Z. Gao, and S. J. Ovaska

Table of Contents

Closed Form Solutions for Connectivity of Fixed Radius Random Graphs in One-Dimensional Space 3249
Ai Noshiro and Masahito Kurihara

Autonomous Learning of Terrain Classification within Imagery for Robot Navigation 3254
Michael Happold and Mark Ollis

3D Rough Reconstruction of Buildings from Streetscape by Synergetic Stereo Matching 3261
Hideaki Kawano, Shinichiro Imamura, Hiroshi Maeda, and Norikazu Ikoma

A Macro-Robot Manipulator for Medical Applications 3269
Basem Yousef, Rajni Patel, and Mehrdad Moallem

A Simple Meta-heuristic Approach for the Multiple Container Loading Problem 3275
Shigeyuki Takahara

A Content-Based Painting Image Retrieval System Based on AdaBoost Algorithm 3281
Shwu-Huey Yen, Ming-Hsien Hsieh, Chia-Jen Wang, Hwei-Jen Lin

A Mobile Robot System for Remote Measurements of Ammonia Vapor in the Atmosphere 3287
Gary Anderson, Chris Sheesley, Jay Tolson, Edmond Wilson, and Edward Tunstel

Agent Abilities in a Landmark-based Mapping Model 3293
Marc Schraffenberger and Jean-Yves Herve

Hierarchical Byzantine Fault Tolerant Secure LDAP 3299
Honglun Hou, Xiuqun Wang, and Minghui Wu

Stabilization Analysis for a Class of Switched Discrete-time Systems 3305
Juing-Shian Chiou and Chun-Ming Cheng

Agent-Based Simulation About Social Value Emergence Based on Perceptual Balance 3311
Akira Notsu, Hidetomo Ichihashi and Katsuhiro Honda

Modeling Cognitive Structure of Emotion for Developing a Pedagogical Agent Based Interactive Game 3316
P. Ravindra De Silva, Chandrajith Ashuboda Marasinghe, Ajith P. Madurapperuma, Stephen G. Lambacher, and Minetada Osano

A simple mechanical system for studying adaptive oscillatory neural networks 3322
Guillaume Jouffroy and Jérôme Jouffroy

A note on handling multicriteria fuzzy Decision-making problems based on vague set theory 3328
Qiang Zhang and Ying Meng

Cancer Classification Using Case-Based Reasoning Classifier 3332
Lilybert Machcha and Prabir Bhattacharya

Robustness Analysis of a Class of Non-ordinary Controlled Petri Nets 3337
Fu-Shiung Hsieh

Content-Based Text Classifiers for Pornographic Web Filtering 3343
Jantima Polpinij, Anirut Chotthanom, Chumsak Sibunruang Rapeeporn Chamchong, and Somnuk Puangpronpitag

A Radio-Link Stability-based Routing Protocol for Mobile Ad Hoc Networks 3348
Jenn-Hwan Tarng, Bing-Wen Chuang, and Fang-Jing Wu

Multi-objects Tracking System Using Adaptive Background Reconstruction Technique and Its Application to Traffic Parameters Extraction 3353
Chin-Teng Lin, Yu-Chen Huang, Ting-Wei Mei, Her-Chang Pu, and Chao-Ting Hong

A Web Services Based Collaborative Management Framework for Semiconductor Equipment 3359
Mu-Chen Chen, Kai-Ying Chen, Ming-Fu Hsu, and Cheng-Tah Yeh

Scheduling with Uncertain Resources: Representation and Utility Function 3365
Ulas Bardak, Eugene Fink, and Jaime G. Carbonell

Table of Contents

Interval Generalized Stochastic Petri Net Models in Performance Evaluation 3372
Sergio Galdino and Paulo Maciel

Robust Dynamics Estimation of Gene Expression Data 3378
Cheng-Fa Cheng and Meng-Lin Wu

An electrophysiological model of chemotactic response in Paramecium 3383
Akira Hirano, Toshio Tsuji, Noboru Takiguchi and Hisao Ohtake

Game Analysis on Cultivating Talents and Obtaining Employment 3389
Zhang Dengbing

Using Semi-Supervised Learning to Build Bayesian Network for Personal Preference Modeling in Home Environment 3394
Zhi-Yang Chen, Chao-Lin Wu and Li-Chen Fu

A Data Envelopment Analysis Approach for Performance Evaluation of IT Products 3400
Chia-Ho Lin and Da-Yin Liao

Human Localization via Multi-Cameras and Floor Sensors in Smart Home 3406
Chen-Rong Yu, Chao-Lin Wu, Ching-Hu Lu, and Li-Chen Fu

Median LDA: A Robust Feature Extraction Method for Face Recognition 3412
Jian Yang, David Zhang, and Jing-yu Yang

A User Centric Mobile Information Service: MISAR 3418
S. Pinyapong, K. Watanabe, S. Kimura, H. Shoji, and T. Kato

User-Preferred Interface Design with Abstract Interaction Description Language 3424
Takuto Yanagida, Hidetoshi Nonaka, and Masahito Kurihara

Wireless Mesh Networks for Intelligent Transportation Systems 3430
Jane-Hwa Huang, Li-Chun Wang, and Chung-Ju Chang

Semantic Reasoning for Adaptive Management of Telecommunications Networks 3436
John C. Hoag and Frederick A. Hayes-Roth

A Merged Fuzzy-Neural Network and Its Application in Fuzzy-Neural Control 3441
I-Hsum Li, Wei-Yen Wang, Shun-Feng Su, and Ming-Chang Chen

Development of a Real-Time Wireless Embedded Brain Signal Acquisition/Processing System and its Application on Driver's Drowsiness Estimation 3447
Hung-Yi Hsieh, Sheng-Fu Liang, Li-Wei Ko, May Lin, and Chin-Teng Lin

Extraction of Error Detection Rules without Supervised Information from Log Files Using Automatically Defined Groups 3453
Yoshiaki Kurosawa, Akira Hara, Takumi Ichimura, and Yuji Kawano

Adaptive Information Change Management and Relative Pre-Warning Mechanism 3459
Tao Hu, Ye Hu, and Baohong Li

Training Hidden Markov Models by Hybrid Simulated Annealing for Visual Speech Recognition 3464
Jong-Seok Lee and Cheol Hoon Park

Semantic Hierarchy Fusion of Image Sensors and Supersonic wave Sensors 3469
Naoki Sumiya, Kenji Fujihira, and Shunsuke Kamijo

A Hybrid CFGTSA Based Approach for Scheduling Problem: A Case Study of an Automobile Industry 3475
Felix T. S. Chan, Vikas Kumar, H.K. Chan, and S.H. Chung

Active Head Tracking Using Integrated Contour and Template Matching in Indoor Cluttered Environment 3481
Wen-Chung Chang and Chih-Wei Cho

Table of Contents

Task-Compatibility-Based Motion Planning for Bimanual Assembly ... 3487
Myun Joong Hwang, Nam Soo Park, Sung Jo Kwak, and Doo Yong Lee

Image Matching Using Colour Edge Cooccurrence Histograms ... 3493
Wenjing Jia, Huaifeng Zhang, Xiangjian He, and Qiang Wu

COTS Technologies for Integrating Development Environment, Remote Monitoring and Control of Livestock Stable Climate ... 3500
J. J. Jessen, H. Schi¯ler, J. F. D. Nielsen, and M. R. Jensen

Visualization Design for Location-Aware Services ... 3506
Chia-How Lin, Kai-Tai Song, Sheng-Po Kuo, Yu-Chee Tseng, and Yau-Jen Kuo

Vehicle Segmentation by Edge Classification Method and the S-T MRF Model ... 3512
Hiroshi Inoue, Mingzhe Liu, and Shunsuke Kamijo

Verification and Validation of a model dedicated to mode handling of manufacturing systems ... 3519
N. Hamani

Mobility Support GIS with Universal-designed Data of Barrier/Barrier-free Terrains and Facilities for All Pedestrians Including the Elderly and the Disabled ... 3526
Ikuko Eguchi Yaiari and Seiji Igi

A Multiscale Approach to Retinal Vessel Segmentation Using Gabor Filters and Scale Multiplication ... 3532
Qin Li, Jane You, Lei Zhang, and Prabir Bhattacharya

Social Stability and Mathematical Stability in Conflict Management ... 3539
M. Sakamoto, and Y. Hagihara,

Sensemaking for Strategy in an Agent-based Organization ... 3544
Hsiao-Tzu Huang and Wei-Chung Chang

Decentralized Control of Freeway Traffic Flow with Neighboring Cellular Information ... 3550
Yi-Hsien Chiang and Jyh-Ching Juang

Clustering using Multi-objective Genetic Algorithm and its Application to Image Segmentation ... 3556
Anirban Mukhopadhyay, Sanghamitra Bandyopadhyay and Ujjwal Maulik

Building a Remote Supervisory Control Network System for Smart Home Applications ... 3562
Yu-Ping Tsou , Jun-Wei Hsieh, Cheng-Ting Lin, and Chun-Yu Chen

Manipulability Analysis of Kicking Motion in Soccer Based on Human Physical Properties ... 3567
Yoshiyuki Tanaka, Mitsuhisa Shiokawa, Hiroyuki Yamashita, and Toshio Tsuji

An Acquiring Method of Macro-Actions in Reinforcement Learning ... 3573
Takeshi Yoshikawa and Masahito Kurihara

English-Thai Example-Based Machine Translation using n-gram model ... 3578
Nattapol Kritsuthikul, Arit Thammano, and Thepchai Supnithi

Audiovisual Gunshot Event Recognition ... 3583
Cheng-Yao Chen, Ahmed Abdallah, and Wayne Wolf

Interception and Interference of DSSS Signals in Non-cooperative System ... 3589
Xiao-Ming Zhang and Zhong-Zhao Zhang

Combining Single-pass and Multiple-pass Heuristics for Group Flexible Flow-shop Scheduling Problems ... 3595
Pei-Ying Huang, Tzung-Pei Hong, and Cheng-Yan Kao

Definitions and applications of deterministic-timed Petri nets (DTPN) ... 3601
Davide Giglio

Efficient Mining of Spatial Co-orientation Patterns from Image Databases ... 3609
Ling-Yin Wei and Man-Kwan Shan

Table of Contents

A Method for Selecting Facial Expression based on Emotions and Its Application for Text Reading 3615
Hiroyuki Kurose, Kyoko Ito, and Shogo Nishida

TEXT EXTRACTION ON CHINESE PAINTINGS 3621
Shwu-Huey Yen, Wen-Tsung Tsai, Chiu-Hsing Liu, Hwei-Jen Lin, and Chia-Jen Wang

Learning to grasp in unknown environment by reinforcement learning and shaping 3627
N. Rezzoug, P. Gorce, M. Ben Khelifa, and P. Abellard, A. Abellard

An Efficient Method for Face Localization and Recognition in Color Images 3633
Farshid Hajati, Karim Faez, and Saeed Khoshfetrat Pakazad

A proposed home agent architecture to infer user feeling from user action pattern 3639
Megumi Takada, Shun'ichi Tano, Mitsuru Iwata, and Tomonori Hashiyama

Decision model for product design based on Fuzzy synthetic evaluation method 3646
Shouqian Sun and Qun Wun

A Discussion of Attribute Reduction in Fuzzy Rough Sets Using Support Vector Machine 3651
Eric. C.C. Tsang, Degang Chen, Suyun Zhao, and Qiang He

Scheduling with Uncertain Resources: Elicitation of Additional Data 3656
Ulas Bardak, Eugene Fink, Chris R. Martens, and Jaime G. Carbonell

Implementation of a Template-based Approach for Mass Customization of Service-oriented E-business Applications 3662
Zhu Xiyong and Zheng Xingwang

A Fuzzy Lyapunov Function Approach to Stabilize Uncertain Nonlinear Systems Using Improved Random Search Method 3667
Jiing-Dong Hwang, Zhi-Ren Tsai, and Chun-Jung Chang

Robust Neural Network Controller Design for Traveling-Wave Type Ultrasonic Motor 3673
Chih-Hsien Yu and Tien-Chi Chen

Input Method by Hand Motion for a Portable Information Appliance 3679
Morimasa Matsuda, Takako Nonaka, and Tomohiro Hase

Framework for Modelling User Interest using Augmented Shopping Store 3684
Akihiro Ogino, Tomohiro Miyazaki and Toshikazu Kato

Optimal Collaboration in Human-Robot Target Recognition Systems 3690
Avital Bechar, Yael Edan, and Joachim Meyer

Semantic Service Discovery in a Middleware Based Ubiquitous Environment 3696
Md. Kamrul Hasan, Lenin Mehedy, Sungyoung Lee, Young-Koo Lee

A New Paradigm for Intelligent Collision Avoidance via Interactive and Interdependent Generic Maneuvers 3701
Ravipriya Ranatunga, Sisil Kumarawadu, Pawan Lingras, and Tsu-Tian Lee

Neural Networks in Identification of Helicopters Using Passive Sensors 3707
N. Sadati and A. H. Faghihi

Minimality of Critical Scenarios in Petri Net Models 3711
Nabil Sadou and Hamid Demmou

A Genetic Fuzzy System for Defining a Reactive Dispatching Rule for AGVs 3719
Orides Morandin Jr., Pablo A. Dalbem Castro, R.R. Edilson Kato, and Heloisa A. Camargo

A Method on Generating Product Feature Trend Map from Press Releases using Syntactic Dependency Analysis with Expression Phrases 3725
Masanori Akiyoshi, Yutaka Shimizu and Norihisa Komoda

Table of Contents

Using Genetic Algorithms for Feature Selection in Predicting Financial Distresses with Support Vector Machines 3730
Pei-Wen Huang and Chao-Lin Liu

Vibrotactile force feedback system for minimally invasive surgical procedures 3736
Ryan E. Schoonmaker and Caroline G.L. Cao

Adaptive Travel Time Path Selection in Hierarchical Index Road Network 3742
Adisak Sukul and Pattarasinee Bhattarakosol

Cooperation: Concepts and General Typology 3748
Alaa M. Khamis, Mohamed S. Kamel and Miguel A. Salichs

Exploration of Different Constraints and Query Methods with Kernel-based Semi-supervised Clustering 3755
Bojun Yan and Carlotta Domeniconi

LMI-based Sensorless Speed Control of Permanent Magnet Synchronous Motors 3761
Kuang-Yow Lian, Che-Hsueh Chiang and Hui-Wen Tu

Test Generation and Site of Fault for Combinational Circuits Using Logic Petri Nets 3767
Jui-I Tsai, Ching-Cheng Teng, and Ching-Hung Lee

Analysis of Human Learning Process on Manual Control of Complex Systems 3773
Takakuni Goto, Noriyasu Homma, Makoto Yoshizawa and Kenichi Abe

Network Motif Model: An Efficient Approach for Extracting Features from Relational Data 3779
Chiung-Wei Huang, Ching-Chung Yu, Ching-Hao Mao, and Hahn-Ming Lee

Adaptive Emotion Recognition in Speech by Feature Selection Based on KL-divergence 3785
Tetsuya Noda, Yoshikazu Yano, Shinji Doki and Shigeru Okuma

Connecting Language and Perception in Human-Robot Interaction 3791
Pingui Jia, Yiping Yang, and Junfang Zeng

Computer Music Composition Based on Discovered Music Patterns 3796
Shih-Chuan Chiu and Man-Kwan Shan

A Triangular Selection Path Planning Method with Dead Reckoning System for Wireless Mobile Sensor Mote 3802
Ren C. Luo, Jung-Ting Huang, and Ogst Chen

Face Detection Based on Central Geometrical Moments of Face Components 3809
Saeed Khoshfetrat Pakazad, Karim Faez and Farshid Hajati

Induction of Multi-stage decision tree 3815
Jianbing Huo, Xizhao Wang, Mingzhu Lu, and Junfen Chen

Mining Object Correlations to Improve Storage Performance in Virtual Environments 3820
Shao-Shin Hung and Damon Shing-Min Liu

Development of Incipient Slip Measurement System for Walking Analysis with High-speed Camera 3828
H. Uno, H. Takemura, and H. Mizoguchi, T. Ogasawara

Capturing the Essence of a Dynamic Behavior of Sequences of Numerical Data Using Elements of a Quasi-natural Language 3834
Janusz Kacprzyk, Anna Wilbik, and Slawomir Zadroÿzny

Support Vector Clustering with a Novel Cluster Validity Method 3840
Jen-Chieh Chiang and Jeen-Shing Wang

Human Operation with XY-Stages -Human Adaptive Mechatronics- 3846
Yukihito Suzuki,Yaodong Pan, Satoshi Suzuki, Keiichi Kurihara and Katsuhisa Furuta

Fuzzy Classification of Human Skin Color in Color Images 3852
I. A. G. Boaventura, V. M. Volpe, I. N. da Silva and A. Gonzaga

Table of Contents

Emergent Disservices in Interdependent Systems and System-of-Systems 3857
Igor Nai Fovino and Marcelo Masera

A Heuristic Algorithm for the Three-Dimensional Container Packing Problem with Zero Unloading Cost Constraint 3863
Chun-Cheng Lin and Chang-Sung Yu

Advances in Optimizing Screw-Type Machines 3869
Stefan Berlik, Madjid Fathi, and Alexander Holland

Structured Large Margin Machine Ensemble 3874
Patrick P. K. Chan, Defeng Wang, Eric C. C. Tsang, and Daniel S. Yeung

Optimal Reactive Power Planning Using Genetic Algorithm 3879
Chao-Rong Chen, Hang-Sheng Lee, and Wenta Tsai

Multi-Agent Handling of Opportunism: AWOL Meets Discretized 'Unreal Tournament' 3884
Ami Berler and Solomon Eyal Shimony

Control System for Skill Acquisition -Balancing Pendulum based on Human Adaptive Mechatronics- 3890
Yuya Kado, Yaodong Pan and Katsuhisa Furuta

Drifting and Blinking Compensation in Electro-oculography (EOG) Eye-gaze Interface 3896
Tohru Yagi, Yoshiaki Kuno, Kazuo Koga, and Toshiharu Mukai

Efficient Deterministic Approximation Algorithms for Non-myopic Value of Information in Graphical Models 3901
Yan Radovilsky, Guy Shattah, and Solomon Eyal Shimony

Nonlinear Flight Control of a Two-Degree-of-Freedom Helicopter Using Takagi-Sugeno Fuzzy Model 3907
Gwo-Ruey Yu and S. H. Chen

An IEC-based Virtual Environment Authoring System for High School Education 3913
Hiroaki Nishino, Shinji Yamabiraki, Takuya Sueyoshi, Tomoaki Mukai, Tsuneo Kagawa, Kazuyuki Yoshida, and Kouichi Utsumiya

Partial-tied-mixture Auxiliary Chain Models for Speech Recognition Based on Dynamic Bayesian Networks 3919
Hui Lin and Zhijian Ou

Image Retrieval by Emotional Semantics: A Study of Emotional Space and Feature Extraction 3924
Wang Wei-ning, Yu Ying-lin and Jiang Sheng-ming

Cognitive Developmental Pattern Recognition: Learning to learn 3930
Tijn van der Zant, Lambert Schomaker, Marco Wiering, and Axel Brink

Computational Modeling of Dynamic Planning in Air Traffic Management 3936
Todd J. Callantine

Peer-to-Peer File Sharing Communication Detection System using the Traffic Feature Extraction 3942
Satoshi Togawa, Kazuhide Kanenishi and Yoneo Yano

ZMP Analysis for Realisation of Humanoid Motion on Complex Topologies 3947
Daniel Stonier and Jong-Hwan Kim

Socio-Technical Complexity in Energy Infrastructures 3953
Michiel Houwing, Petra Heijnen, and Ivo Bouwmans

Temporal versus Spatial Observability in Model-Based Diagnosis 3959
Jurryt Pietersma and Arjan J.C. van Gemund

Simplified Workflow Management with Metadata-Enhanced Petri Nets 3966
Thor Kristoffersen and Svetlana Boudko

Table of Contents

Adaptive and Robust Control for Nonlinear HVAC System 3973
Ming-Li Chiang and Li-Chen Fu

Human-Robot Collaborative Learning System for Inspection 3979
Kartoun Uri, Stern Helman, and Edan Yael

Evolutionary Computation with Habitats for Finding Kubelka-Munk Coefficients in Metallic and Pearlescent Paints 3986
Eric W. Cooper, Yoshiaki Sakakura, Yasuhiro Ohta, Kozo Furukawa, Hiroyuki Shinoda, and Kozaburo Hachimura

MIMO Predictive Controller Using Recurrent Neural Networks 3991
Chi-Huang Lu, Ching-Chih Tsai, Yuan-Hai Charng, and Chi-Ming Liu

Rule-Based Compilation of Graphical Structures 3997
Alexander Holland, Madjid Fathi, and Stefan Berlik

Design an Intelligent Ballistocardiographic Chair using Novel QuickLearn and SF-ART Algorithms and Biorthogonal Wavelets 4002
Alireza Akhbardeh, Sakari Junnila, Teemu Koivistoinen, and Alpo Värri

Applying Novel QuickLearn Algorithm for Pattern Recognition 4008
Alireza Akhbardeh and Alpo Värri

A Real-time Finger-tapping Interface Using High-speed Vision System 4013
Kenkichi Yamamoto, Satoshi Ikeda, Tokuo Tsuji, and Idaku Ishii

Single-Row Superposition-Type Planar Compound-like Eye for Motion Recovery 4021
Gwo-Long Lin and Chi-Cheng Cheng

Fuzzy Cognitive Map Application for Real Environment using Concept Template 4027
Kazuya Mera and Takumi Ichimura

Interference-aware Energy-efficient MAC Protocols for Sensor and Wireless Pervasive Networks 4033
Chi-Hsiang Yeh

Optimum Steelmaking Cast Plan with Unknown Cast Number Based on the Pseudo TSP Model 4039
Yun-can Xue, Zhi-qian Mei, and Qiwen Yang

A Methodology to Design FPGA-based PID Controllers 4045
João Lima, Ricardo Menotti, João M. P. Cardoso, and Eduardo Marques

The Study of the Longest Non-Intersecting Route Problem Using Genetic Algorithm 4052
Chao-Rong Chen and Sheng-Chyang Huang

Adaptive Target Detection and Matching for a Pedestrian Tracking System 4057
Meng Wan and Jean-Yves Herve

Measuring Similarity between Transliterations by Character Pronunciation 4063
Chung-Chian Hsu, Chien-Hsing Chen and Chun-Kai Chen

Performance-based Contract for Aseismic Retrofit of Wooden Buildings 4069
Mamoru Yoshida and Hirokazu Tatano

Choosing the Parameters of 2-norm Soft Margin Support Vector Machines According to the Cluster Validity 4075
Kuo-Ping Wu and Sheng-De Wang

Scalable Super-Resolution Imaging 4082
Evrim Ozcelik, S. Murat Yesiloglu, Osman K. Erol, Hakan Temeltas, and Okyay Kaynak

Multi-Target Tracking using Separated Importance Sampling Particle Filters with Joint Image Likelihood 4088
Chuan-Wen Lai, Cheng-Ming Huang, and Li-Chen Fu

Table of Contents

Very Fast Region-Connected Segmentation for Spatial Data: Case Study 4094
Li Chen, Hong Zhu and Wei Cui

Modeling the Effects of Social Influence on Driver Behavior in Applying Child Vehicle Safety Restraint 4099
Ziad Kobti, Anne W. Snowdon, Shamual Rahaman, Tina Dunlop and Robert D. Kent

Self-Tuning Fuzzy Control of a Piezoelectric Actuator System 4105
Gwo-Ruey Yu, Chun-Sheng You, and Rong-Jun Hong

Manufacturing Execution Systems (MES) assessment and investment decision study 4111
Liang Chao and Li Qing

The Forward Kinematics of the 6-6 Stewart Platform Using Extra Sensors 4117
Sung-Hua Chen and Li-Chen Fu

Text Extraction from Complex Document Images Using the Multi-plane Segmentation Technique 4123
Yen-Lin Chen and Bing-Fei Wu

Impulse-Based Dynamic Simulation of Articulated Rigid Bodies with Aerodynamics 4131
Chia-Da Lee and Li-Chen Fu

Enhancing Entropy-based Informative Block Identification Using Block Preclustering Technology 4139
Chia-Hsin Huang, Po-Yi Yen, Yi-Chan Hung, Tyng-Ruey Chuang, and Hahn-Ming Lee

Study of Japanese Sign Language Semantic Process based on N400 Analysis 4145
Hisaya Tanaka and Yuji Nagashima

Possibilistic C-Shell Clustering with Inter-Cluster Constraints 4150
Tsaipei Wang and James M. Keller

Middle Layer Incorporating Software Robot and Mobile Robot 4156
Tae-Hun Kim, Seung-Hwan Choi, and Jong-Hwan Kim

Mixed Backlogging and Outsourcing Models with Inventory Capacity 4163
Jinhong Zhong, Feng Chu, Chengbin Chu, and Shanlin Yang

Outlier Resistance Estimator for GPS Positioning 4169
Dah-Jing Jwo and Shun-Jie Chang

A Unified LMI Approach to GPS Positioning and Integrity Monitoring 4175
Tsung-Tai Chien and He-Sheng Wang

Autopilot Design for Track-keeping and Berthing of a Small Boat 4181
C.Y. Tzeng, S. D. Lee, Y. L. Ho, and W. L. Lin

Hybrid RNN-GA Controller for ALS in Wind Shear Condition 4187
Jih-Gau Juang and Hou-Kai Chiou

Optimal Fuzzy Switching Grey Prediction with RGA for TRMS Control 4193
Jih-Gau Juang, Kai-Ti Tu, and Wen-Kai Liu

Stochastic Control of Two-Level Nonlinear Large-Scale Systems; Part I-Interaction Prediction Principle 4199
N. Sadati and A. R. Momeni

An Adaptation of EPCA to Image Compression and Reconstruction 4205
Xin Li, Zhili Wu and Xiaofeng Zhang

Stochastic Control of Two-Level Nonlinear Large-Scale Systems; Part II-Interaction Balance Principle 4210
N. Sadati and E. Dehghan Marvast

A Study on the Interpretation of Japanese Traditional Culture with Emphasis on Recognition Process 4216
Toshiko Asai, Akinori Minazuki, Hidehiko Hayashi, and Susumu Kunifuji

Stable Deterministic Crystallization for Discovering Hidden Hubs 4222
Yoshiharu Maeno and Yukio Ohsawa

Table of Contents

Application of GM(1,1) Model to Voice Activity Detection 4228
Cheng-Hsiung Hsieh and Ting-Yu Feng

Perceptual Color Contrast based Watershed for Color Image Segmentation 4233
Chao-Yu Chi and Shen-Chuan Tai

Sound Editing Interface For Computer Animators 4239
Maya Kam-Pang Tong and Kam-Wah Wong

Improving the selectivity of range query for image databases based on a probabilistic framework 4245
Zhiwen Yu and Hau-San Wong

Technology as an Artistic Medium 4250
H. Rodriguez

A Semantic View for Flexible Communication Models between Humans, Sensors and Actuators 4255
Giovanni Acampora, Vincenzo Loia, Michele Nappi and Stefano Ricciardi

Features Selection based on Rough Membership and Genetic Programming 4262
Been-Chian Chien, Jui-Hsiang Yang

Automated Labeling of Neuroanatomical Structures in Routine Brain CT 4268
Furen Xiao, Chun-Chih Liao, I-Jen Chiang, and Jau-Min Wong

A Programming System for Text-Editing Task Using Japanese Natural Language Text and Direct Manipulation 4273
Nozomu Kaneko and Takehisa Onisawa

A Study of Progressive Solution to Data Distribution Maturity Problem at Product Inspection Stage of Manufacturing 4279
Hiroshi Nakaijma, Hiroshi Tasaki, Kazuto Kojitani, Masaki Arao, and Shigeyasu Kawaji

A Bankruptcy Prediction Method Based on Cash flow Using SOM 4285
I. Nakaoka, K. Tani, Y. Hoshino and K. Kamei

Steganalysis Embedding Percentage Determination with Learning Vector Quantization 4291
Benjamin M. Rodriguez, Gilbert L. Peterson, Kenneth W. Bauer, and Sos S. Agaian

CNN-Based Local Motion Estimation for Image Stabilization Processing and its Implementation 4296
Chin-Teng Lin, Shi-An Chen, Ying-Chang Cheng, and Chao-Ting Hong

A Flexible Multiple Criteria Sorting Method with Application in Inventory Management 4300
Ye Chen, D. Marc Kilgour, and Keith W. Hipel

Personalized Intelligent M-learning System for Supporting Effective English Learning 4306
Chih-Ming Chen, Shih-Hsun Hsu, Yi-Lun Li, and Chi-Jui Peng

Telecontrol Laboratory for Training Postgraduate Students Online Based on Internet Technology 4312
Yaping Dai, Qingjie Liu, Xiangyang Xu, Zheng Liu, Fangyan Dong, and Kaoru Hirota

Personalized Intelligent English Vocabulary Learning System Based on Item Response Theory and Learning Memory Cycle 4318
Chih-Ming Chen, Ching-Ju Chung and Ming-Chuan Chen

Personalized E-News Monitoring Agent System for Tracking the User-Interested Chinese News Events 4324
Chih-Ming Chen, Chao-Yu Liu , Wei-Chia Chiu, and Tai-Hung Lee

Application of Neural Network to Identification of Young Females' Body Type 4330
Feng-yuan Zou, Xiao-jun Ding, Shu-jun Zhang, Li-jun Wang, and Yong-hong Zhang

Investigation of Driver-Controller Interaction in Vehicle Rollover Prevention 4335
Liang-kuang Chen and Sheng-yung Hsu

Table of Contents

Fuzzy Sliding Mode Controller with Gain Auto-tuning for Un-symmetric Input Temperature Control System schemes. 4341
Shiuh-Jer Huang, Hung-Yi Chen and Chen-Chuan Wang

An Adaptive Fuzzy Controller for 1/2 Vehicle Active Suspension Systems 4347
Kuo-Ching Chiou and Shiuh-Jer Huang

Newly Output Feedback Sliding Mode Control for Mismatched Uncertain Interconnected System 4353
Yao-Wen Tsai, Kuohsiu David Huang, Shun-Chang Chang, Chang-Fu Shieh, Chia-Hao Chuang and Ji-Ming Jhan

A Parametric Event-Driven Flowed Token Petri Nets for Generic Agile Systems Modeling and Control 4359
Yuan-Chen Yu and Yao-Te Hsieh

Multi-Agent Online Work Dispatching Control for a Multi-Facility Manufacturing System 4365
Yenming J. Chen and Tien-Sung Chio

Development of A Long-Stroke Precision Positioning System with Force Feedback Effect 4371
Jessica S.C. Chi, Albert W.L. Yao, and C. H. Hung

Development of A Petri Net-Based Reengineering Simulation System: A Case Study 4376
Jessica S. C. Chi, H. T. Liao, S. S. Peng, Y. K. Wang, and Albert W. L. Yao

Robust Control of Dual-Arm Space Robot Systems with Two Objects in Inertial Space 4381
Yishen Guo and Li Chen

Design and Implementation of A Vision-Based Shopping Assistant Robot 4386
Ming-Yuan Shieh, Yun-Han Chan, Zheng-Xing Lin and Jeng-Han Li

Optimization Resource Management in EIS Environment 4392
Fei Li, Liping Zhao and Feng Wu

A Formal Modeling Method based on CPN 4398
Shancang Li, Deyun Zhang, Zongbin Li, Fuhai Ma, and Feng Wu

On the Sensitivity of a Non-Critical Activity's Duration to Activities' Total Floats in Networks under Generalize Precedence Relations 4403
Wanan Cui, Chaoyuan Yue, and Jiajun Qin

System Importance Measures Using MCS with Extended Saphire Applications 4408
Feng Hsu

Bankruptcy Prediction Using Multiple Classifier System with Mutual Information Feature Grouping 4415
Aki P. F. Chan, Wing W. Y. Ng, Daniel S. Yeung, Eric C. C. Tsang and Michael Firth

Knowledge Dependency Relationships in Incomplete Information System Based on Tolerance Relations 4421
Chen Wu, Xiaohua Hu, Lijuan Wang, Xibei Yang, and Yi Pan

An Improvement on Calculation of Absolute Degree of Grey Incidence 4426
Mingxia Cao, Yaoguo Dang, and Chuanmin Mi

Performance Comparisons between Unsupervised Clustering Techniques for Microarray Data Analysis on Ovarian Cancer 4429
Meng-Hsiun Tsai, Ching-Hao Lai, Shin-Jr Lu, and Shun-Feng Su

An Extenics Approach to MRI Classification 4435
Jung-Chi Su, Chuin-Mu Wang, Sheng-Chih Yang, and Gia-Hao Chang

Differential Codes Transmitting in Pyramidal CMAC Networks 4441
Ted Tao and Chuan-Chu Ding

Learning Style-directed Dynamics of Human Motion for Automatic Motion Synthesis 4447
Yi Wang, Zhi-Qiang Liu and Li-Zhu Zhou

Table of Contents

Non-linear Dynamic Data Reconciliation For Industrial Processes 4453
Xuemin Tian, Bokai Xia, Zuojun Yu, and Shuang-Hua Yang

Visual Servoing with Moments of SIFT Features 4459
Frank Hoffmann, Thomas Nierobisch, Torsten Seyffarth and Gunter Rudolph

Safety and Security of Remote Monitoring and Control of intelligent Home Environments 4465
Lili Yang, Shuang-Hua Yang, and Fang Yao

The Motion Analysis of a Moving Object in Sea by Analyzing Doppler Effects of Sound with Genetic Algorithms 4470
Ryuji Goto and Yuji Sato

Class Association Rule Mining with Chi-Squared Test Using Genetic Network Programming 4478
Kaoru Shimada, Kotaro Hirasawa, and Jinglu Hu

Efficient Maintenance and Mining of Frequent Itemsets over Online Data Streams with a Sliding Window 4485
Hua-Fu Li, Chin-Chuan Ho, Man-Kwan Shan, and Suh-Yin Lee

Navigation and Mobile Security System of Home Security Robot 4491
Ren C. Luo, Po K. Wang, Yu F. Tseng, and T. Y. Lin

Neural Network Application for Flux and Speed Estimation in the Sensorless Decoupling Induction Motor Drive 4497
Cheng-Hung Tsai

CMAC-Based Speed Estimator Design for Induction Motor Drive 4504
Cheng-Hung Tsai

Acquisition of GPS Software Receiver Using Split-Radix FFT 4511
W. H. Lin, W. L. Mao, H. W. Tsao, F. R. Chang, and W. H. Huang

A New Approach to Genetic Programming based on Evolution Strategies 4517
Eduardo Oliveira Costa and Aurora Pozo

Estimation of Loss Coefficients of Nonlinear Rubber Using Iterative H∞ Filter 4523
Chih-Hu Wang, Bore-Kuen Lee, Wei-Hang Tseng, Chung-Hsi Fu, Chauchin Su and Chien-Nan Jimmy Liu

Automatic Fire Detection System Using Adaptive Fusion Algorithm for Fire Fighting Robot 4529
Kuo L. Su

Brightness Improvement of Color Display Systems Using White Sub-pixel Structure and Fuzzy Mapping Algorithm 4535
Chih-Chang Lai Ching-Chih Tsai, and Han-Chang Lin

Applications of Multi-objective Evolutionary Algorithm to Airline Disruption Management 4541
Tung-Kuan Liu, Chi-Ruey Jeng, Yu-Ting Liu, and Jia-Ying Tzeng

Optimal Output Feedback Control for Linear Uncertain Systems Using LMI-Based Approach and Genetic Algorithm 4547
Shinn-Horng Chen, Wen-Hsien Ho and Jyh-Horng Chou

LQ Regulator Design Based on Particle Swarm Optimization 4553
Ker-Wei, Yu, Zhi-Liang, Huang

An application of AC servo motor by using particle swarm optimization based sliding mode controller 4557
Ker-Wei, Yu, and Shang-Chang, Hu

Expeditious Hot Lots Handling in 300mm Semiconductor Foundry 4562
Chia-Nan Wang and Da-Yin Liao

Multiparty Key Agreement for Secure Teleconferencing 4567
Chu-Hsing Lin, Hsiu-Hsia Lin, and Jen-Chieh Chang

Table of Contents

A Novel Drive Status Monitoring System 4573
Jiann-Der Lee, Jiann-Der Li, and Li-Chang Liu

Hybrid CPM and CAM Physiotherapy Device by Using Intelligent Feedback Control 4578
Hung-Jung Ho and Tien-Chi Chen

Approximate Design of Optimal Tracking Controller for Linear Systems with Time-delay 4583
Ying-Lu Zhang and Gong-You Tang

Modeling and Analyzing Concurrent Design Process for Manufacturing Enterprise Information Systems 4589
Xinqin Gao, Zongbin Li, Shancang Li, and Feng Wu

Concaving Space Algorithm for Neural Network 4594
Weiguo Liu, Qinke Peng, and Yongxuan Huang

On the SLA for Spacecraft Ground Station Management 4598
Qun Dang, Hong Wang, Yan Zhang, Bin Wu, Yongxuan Huang,and Lida Xu

Improvement of Bus and Truck Driving Safety 4603
Mirko Novák, Zdeněk Votruba, Miroslav Svítek, Petr Bouchner

Information Fusion of Basked Factor in Satellite Launch Window Determination System 4609
Xiaoning Du, TiansheYang, Huawei Shi, Yongxuan Huang, Jisheng Li, and Hong Wang

Vision-Based Front Vehicle Detection and Its Distance Estimation 4614
Jyh-Yeong Chang and Chien-Wen Cho

The Effects of Using Roadside Wireless Repeaters on Extending Path Lifetime in Vehicle-Formed Mobile Ad Hoc Networks on Highways 4620
Shie-Yuan Wang and Chih-Liang Chou

Design and Implementation of the Intelligent Stop and Go System in Smart Car, TAIWAN iTS-1 4626
Bing-Fei Wu, Tsen-Wei Chang, Jau-Woei Perng, Hsin-Han Chiang, Chao-Jung Chen, Tien-Yu Liao, Shinq-Jen Wu, and Tsu-Tian Lee

Control Design for Vehicle's Lateral Dynamics 4632
Der-Cheng Liaw and Wen-Ching Chung

An Evolutionary Fuzzy Classifier with Adaptive Ellipsoids 4638
Leehter Yao and Kuei-Sung Weng

An Iris Recognition Method Based On Zigzag Collarette Area and Asymmetrical Support Vector Machines 4644
Kaushik Roy and Prabir Bhattacharya

Functional Dependencies in Vague Relational Databases 4649
Faxin Zhao and Z.M. Ma

The Estimation of the Capacity of Lead-Acid Storage Battery Using Artificial Neural Networks 4654
Chao-Rong Chen, Kuo-Hua Huang, and Hsiang-Chung Teng

Gaze-aligned head-mounted camera with pan, tilt, and roll motion control for medical documentation and teaching applications 4659
Erich Schneider, Klaus Bartl, Thomas Dera, Stanislavs Bardins, Guido Böning, Philipp Wagner, and Thomas Brandt

Formal validation with OCL 4664
Thouraya Bouabana-Tebibel

Multi-class Protein Sequence Classification Using Fuzzy ARTMAP 4670
Shakir Mohamed, David Rubin and Tshilidzi Marwala

A Framework for e-SCM QR System in e-Business Processes 4676
Po-Chen Huang, Yi-Cheng Chen and Mei-Hua, Chen

Table of Contents

An Enhanced Adaptive Sliding Mode Fuzzy Control for Positioning and Anti-Swing Control of the Overhead Crane System 4681
Cheng-Yuan Chang, Kou-Cheng Hsu, Kuo-Hung Chiang, and Guo-En Huang

A Component-Based Framework to Rapidly Prototype Online Chess Games for Home Entertainment 4687
Wei-Po Lee, Li-Jen Liu, and Jeng-An Chiou

Application of Signal Analysis and Data-driven Approaches to Fault Detection and Diagnosis in Automotive Engines 4693
Setu Madhavi Namburu, Shunsuke Chigusa, Liu Qiao, Mohammad Azam, and Krishna R. Pattipati

Multivariable Anesthesia Control Using Reinforcement Learning 4699
N. Sadati, A. Aflaki, and M. Jahed

The Human-in-the-loop Design Approach to the Longitudinal Automation System for the Intelligent Vehicle, TAIWAN iTS-1 4705
Hsin-Han Chiang, Jau-Woei Perng, Bing-Fei Wu, Shinq-Jen Wu, and Tsu-Tian Lee

Armature for Critical Infrastructures 4711
Michel Riguidel, Artur Hecker, and Véronique Simon

A Scheduling Algorithm for Vehicular Application Specific Embedded Operating Systems 4717
Yuan Sun, Fei-Yue Wang, Zhi-Xue Wang, Xin Qiao, and Kun-Feng Wang

An Empirical Study of SysML in the Modeling of Embedded Systems 4723
Alexandre José da Silva, Marcos Vinicius Linhares, Rafael Padilha, Nestor Roqueiro, and Rômulo Silva de Oliveira

An Effective Anytime Anywhere Parallel Approach for Centrality Measurements in Social Network Analysis 4729
Eunice E. Santos, Long Pan, Dustin Arendt, and Morgan Pittkin

Similarity Measures of Vague Sets Based on the Set-theoretic Approach 4735
Faxin Zhao and Z.M. Ma

Evaluation of Cinema Website 4740
Rosemary Seva, Jiajin Wu, and Xiao Li Yi

Interactive Fuzzy Dual Decomposition Approach to Large-Scale Multi-Level Multi-Objective Programming Problems 4746
Hitoshi Yano

Leaf Vein Extraction Using Independent Component Analysis 4752
Yan Li, Zheru Chi, and David D. Feng

A Fast Algorithm for License Plate Detection in Various Conditions 4757
Huaifeng Zhang, Wenjing Jia, Xiangjian He, and Qiang Wu

Robust Intelligent Backstepping Longitudinal Control of Vehicle Platoons with H∞ Tracking Performance 4763
Ya-Fu Peng, Chun-Fei Hsu, Chih-Min Lin, and Tsu-Tian Lee

A Mobile Motion Capture Technique Excelling in 3-D Modeling of Temporary Events 4769
Iku Yamaguchi, Joo Kooi Tan, and Seiji Ishikawa

Robust Filtering Circuit Design for Gene Networks under Intrinsic and Extrinsic Molecular Noises 4774
B. S. Chen and W. S. Wu

Real-time Recognition of Facial Expression using Active Appearance Model with Second Order Minimization and Neural Network 4780
Hyun-Chul Choi and Se-Young Oh

Table of Contents

Broadcast Schedules and Query Processing for k Nearest Neighbors Search on Multi-dimensional Index Trees in a Multi-Channel Environment **4786**
Shu-Yu Fu and Chuan-Ming Liu

A Particle Swarm Optimization Based Multiuser Detector for DS-CDMA Communication Systems **4792**
Ho-Lung Hung, Yung-Fa Huang, and Jyh-Horng Wen

Thermal Analysis of Joule Heat Generated on Metal Thin Film by Microwave Irradiation **4798**
Rie Higuchi, Hideaki Takashima, Hatsuhiro Kato, and Yoshinori Kanno

Microwave Sterilization by TiO2 Filter Coated with Ag Thin Film **4803**
Hideaki Takashima, Yusuke Iida, Kazuo Nakamura, and Yoshinori Kanno

Angular Sensing and Chemical Identification with Quartz Crystal Oscillator Sensor **4809**
Hirokazu Tanaka, Tomio Sato, and Yoshinori Kanno

Development of Inductive Quartz Crystal Oscillator Circuit with CMOS Inverter **4815**
Kei Ehara, Hirokazu Tanaka, Tomio Sato, and Yoshinori Kanno

Antibacterial effect of Oxygen/Nitrogen Radicals and UV-radiation in Microwave-Excited Plasmas **4821**
Kenji Ban, Hiroka Mutoh, Keiko Katayama-Hirayama, and Tetsuya Akitsu

Generation of 3D Caricature by Fusing Caricature Images **4827**
Yu-Lun Chen, Wen-Hung Liao, and Pei-Ying Chiang

Intelligent Online Web Based Interactive Missing Person Clothing Identification System **4833**
R. Khosla, D. Francionne, and D. Chu

Tracking control of network distributed systems in presence of variable time delay and loss of information **4839**
Francesco Alonge, Tommaso Cangemi, and Filippo D'Ippolito

A Self-Adaptive Hybrid Genetic Algorithm for Color Clustering **4847**
Tarek El-Mihoub, Lars Nolle, Gerald Schaefer, Tomoharu Nakashima and Adrian Hopgood

A Quantitative Association Rule Mining Algorithm Based on Clustering Algorithm **4853**
Toshihiko Watanabe and Hirokazu Takahashi

Efficiency of Search Performance through visualizing Search Process **4859**
Daisuke Yamashiro, Tomohiro Yoshikawa, and Takeshi Furuhashi

Design of Multi-Mode Switch Strategy for Lean Burn Engine Using Driving Pattern Recognition Technique **4865**
Bo-Chiuan Chen, Yuh-Yih Wu, and Feng-Chi Hsieh

Decision making in transport infrastructures **4873**
Zofia Lukszo, Luis Ferreira and Jos Vrancken

MEMS Power Receiver using Piezoelectric Cantilever Beams and Interdigitated Electrodes **4878**
Bor-Shun Lee, Jyun-Jhang He, Wen-Jong Wu, and Wen-Pin Shih

Smart Wireless Sensor Network Powered by Random Ambient Vibrations **4884**
Wen-Jong Wu, Yi-Fan Chen, Yu-Yin Chen, Chao-Sheng Wang, and Yun-Hsuan Chen

Micro-Anode Guided Electroplating (MAGE) Control System with Digital Imaging Enhancement **4892**
S. B. Jiang, D. L. Lee, Z. L. Yeh, and P. F. Kao,

Human Posture Recognition by Simple Rules **4896**
Chien-Cheng Li and Yung-Yaw Chen

On Reachability and Controllability of Positive Discrete-time Switched Linear Systems **4900**
Guangming Xie and Long Wang

Theoretical and Empirical Investigations on Difficulty in Structure Learning by Estimation of Distribution Algorithms **4905**
Miwako Tsuji, Masaharu Munetomo, and Kiyoshi Akama

Table of Contents

Development of Autonomous Assistive Devices-Analysis of change of human motion patterns- 4911
Kahori Kita, Ryu Kato, Hiroshi Yokoi, and Tamio Arai

Controllability of Interconnected Systems via Switching Networks with a Leader 4917
Bo Liu, Guangming Xie, Tianguang Chu,and Long Wang

Real Options Approach to Finding Optimal Stopping Time in Compact Genetic Algorithm 4922
Sunisa Rimcharoen, Daricha Sutivong and Prabhas Chongstitvatana

Techniques for Missing Value Recovering in Imbalanced Databases: Application in a Marketing Database with Massive Missing Data 4928
Luis E. Zárate, Bruno M. Nogueira, Tadeu R. A. Santos and Mark A. J. Song

Temporal Deontic Relevant Logic as the Logical Basis for Decision Making Based on Anticipatory Reasoning 4935
Jingde Cheng

An Approach for Flexible Job-Shop Scheduling with Separable Sequence-Dependent Setup Time 4941
Kairon Freitas Guimaraes and Marcia Aparecida Fernandes

Angle Control of a one-Dimension Pneumatic Muscle Arm using Self-Organizing Fuzzy Control 4946
Ming-Kung Chang , Ping-Lang Yen and Tsan-Hsiu Yuan

Anticipatory Event Detection via Sentence Classification 4951
Qi He, Kuiyu Chang, and Ee-Peng Lim

Scheduling with Uncertain Resources: Collaboration with the User 4957
Eugene Fink, Ulas Bardak, Brandon Rothrock, and Jaime G. Carbonell

Modeling some issues of C4ISR problem with fuzzy theory 4964
Leh Luoh, Te-Ping Tsai, Te-Shing Wang, and Yi-Ke Liaw

Learning-Embedded Disassembly Petri Net for Process Planning 4970
Ying Tang and MengChu Zhou

System Evaluation from Team Situation Awareness Perspective 4975
Ketut Sulistyawati and Yoon Ping Chui

Layered Models in IT Standardization 4981
Jos L.M. Vrancken

A Path Authentication Scheme for Routing Disruption Attack Prevention in Ad Hoc Network 4985
Li-Joe Lin, Shiuhpyng Shieh, Tzu-I Yang, and Warren W. Lin

Cross—Language Similarity between Perceptual and Semantic Structures of Color Tones 4992
Charith N.W. Giragama, Chandrajith A. Marasinghe, Ajith P. Madurapperuma, Dishna R. Wanasinghe, Susantha Herath, and Osano Minetada

Boundary Color Tones between Color Modifiers in Two Languages 5000
Dishna R. Wanasinghe, Chandrajith A. Marasinghe, Ajith P. Madurapperuma, Charith N.W. Giragama, Susantha Herath, and Osano Minetada

Automating the Abductive Inference Loop 5007
Coen J.C. Stevens, Bart-Floris Visscher and Thomas R. Addis

An Absolute Robot Pose Estimation System Based on a Ceiling Camera Image Using a Neural Network 5015
Jaung-Hun Lee and Se-Young Oh

Towards Computer-Based Perception by Modeling Visual Perception: A Probabilistic Theory 5020
Ö. Ciftcioglu, M. S. Bittermann, and I. S. Sariyildiz

An Advanced System for Modeling Asymmetric Threats 5028
Satnam Singh, William Donat, Haiying Tu, Jijun Lu, Dr. Krishna Pattipati and Dr. Peter Willett

Table of Contents

Soft Computing Techniques for Determining the Effective Young's Modulus of Materials in Thin Films 5034
A. Pasupuleti and F. Sahin

Modeling and Stability Analysis of the Nonholonomic Multi-Agent Formation Problem 5040
Chih-Fu Chang and Li-Chen Fu

Establishing more Suitable Distributed Plans for MultiNode-OLAP Systems 5046
Jorge Loureiro and Orlando Belo

Virtual humanoids endowed with expressive communication gestures: the HuGEx project 5052
N. Rezzoug, P. Gorce, A. Heloir, S. Gibet, N. Courty, J. F. Kamp, F. Multon, and C. Pelachaud

New Trends in Intelligent Electronic Navigational Aids 5058
Costin Barbu, Maura Lohrenz and Geary Layne

On Optimal Evaluation of Preference Queries 5064
Junping Sun

Real-time Infinite Horizon Linear-Quadratic Tracking Controller for Vibration Quenching in Flexible Beams 5071
Rocio Alba-Flores and Enrique Barbieri

Controlling Excessive Information by Surface Information Criterion for Information-Theoretic Self-Organizing Maps 5077
Ryotaro Kamimura

Face Detection using PSO Template Selection 5082
Claudio A. Perez and Juan I. Vallejos

Stabilization of Nonholonomic System Using Evolutionary Strategies 5087
Hector Vargas, Vladimir Alexandrov, and Vittorio Zanella

Student Survey by Information-Theoretic Competitive Learning 5091
Ryotaro Kamimura

Similarity of human motion: congruity between perception and data 5097
Kanako Miura, Hirotaka Furukawa, and Michihiko Shoji

Using Hidden Markov Models to Detect Mode Changes in Aircraft Flight Data for Conflict Resolution 5103
Natasha A. Neogi and Asal Naseri

Using Counter-propagation Neural Network for Robust Digital Audio Watermarking in DWT Domain 5109
Chuan-Yu Chang, Wen-Chih Shen, and Hung-Jen Wang

Visual Impression Modeling Using SVM for Automatic Image Classification 5115
Masahiro Tada and Toshikazu Kato

Low-latency video tracking of horizontal, vertical, and torsional eye movements as a basis for 3DOF realtime motion control of a head mounted camera 5121
Thomas Dera, Guido Boning, Stanislavs Bardins, and Erich Schneider

A Fuzzy Purpose-in-Life Perspective for Artificial Intelligence, Robotics and Computational Intelligence 5127
Ernesto Araujo

Application of Artificial Neural Network in Friction Compensation During Particle Micro Manipulation 5132
M. Shahini, W. W. Melek, and John T.W. Yeow

Impact of Node Heterogeneity in ZigBee Mesh Network Routing 5138
Nia-Chiang Liang, Ping-Chieh Chen, Tony Sun, Guang Yang, Ling-Jyh Chen, and Mario Gerla

Building Detection and Recognition for an Automated Tour Guide 5143
Jingjing Hu, Joshua Sawyer, and Jean-Yves Herve

Color Mixture Model Based on Spatial Frequency Response of Color Vision 5150
Takako Nonaka, Morimasa Matsuda, and Tomohiro Hase

Table of Contents

Constructing Knowledge of the World in Crisis Situations using Visual Language 5155
Siska Fitrianie, Dragos Datcu and Leon J.M. Rothkrantz

Human Vestibular Based (HVB) Senseless Maneuver Optimal Washout Filter Design for VR-based Motion Simulator 5161
Chin-I Huang and Li-Chen Fu

An Evolutionary Algorithm for Optimizing Functions with UV Structures 5169
Hiroshi Takeichi, Isao Ono, Jun Sakuma, and Shigenobu Kobayashi

Comparison of Ensemble Techniques for Incremental Learning of New Concept Classes under Hostile Non-stationary Environments 5177
Hussein Syed Mohammed, James Leander, Matthew Marbach, and Robi Polikar

An Implementation of Socially-Intelligent Agents providing Emotional Support and its Application 5184
Ryota Yamada, Hiroshi Nakajima, Scott Brenner Brave, Heidy Maldonado, Jong-Eun Roselyn Lee, Clifford Ivar Nass and Yasunori Morishima

Cognitive Knowledge Modeling for Knowledge-based System Support 5189
Yuan-Fu Qiu, Yoon-Ping Chui, and Martin G. Helander

Scheduling with Uncertain Resources: Search for a Near-Optimal Solution 5195
Eugene Fink, P. Matthew Jennings, Ulas Bardak, Jean Oh, Stephen F. Smith, and Jaime G. Carbonell

HIGCALS: a hierarchical graph-theoretic clustering active learning system 5203
Wei Hu and Weiming Hu

Welfare Support-equipment for Operations of Personal Computer with Head Tilting and Mouth Open-Close Motions 5209
Nobuaki Nakazawa, Toshikazu Matsui, and Kou Yamada

Iterative Multidimensional Scaling for Industrial Process Monitoring 5215
Justo Matheus, António Dourado, Jorge Henriques, Maria António, and Dora Nogueira

A New Approach to On-Line Rescheduling for a Semiconductor Foundry Fab 5221
Han-Pang Huang and Tien-Ying Chen

Growing Sub-micron Diamond Films by A Novel Microwave Plasma Jet CVD System 5227
Chii-Ruey Lin, Chun-Hsi Su, Guo-Tsai Liao, Hsin-Chin Hung and Chih-Ming Hsu

Resolution Doubling and layer spray coating used in Micro RP System 5232
Jia-Chang Wang, Ming-Zhe Hsieh, Yu-Yuan Chang, and Hao-Chih Yen

Improving the Performance of DMFC by Using a novel Grafting Method to Grow CNTs 5236
Chun-Hsi Su, Chii-Ruey Lin, Chang-Huei Wu, and Hsin -Chin Hung

Apply Fuzzy Inference Mechanism for Supporting Healthcare Ontologies Management 5241
Chang-Shing Lee, Tung-Cheng Hsieh, Yu-Sheng Lai, Mei-Hui Wang, and Chyi-Nan Chen

Visually Similar Wavelets with Application to Data Hiding Systems 5247
Christopher B. Smith and Sos S. Agaian

Spatial-frequency Feature Vector Fusion Based Steganalysis 5253
Hong Cai and Sos S. Agaian

Lip Assistant: Visualize Speech for Hearing Impaired People in Multimedia Services 5258
Lei Xie, Yi Wang and Zhi-Qiang Liu

Human Factors for Design of Hand Gesture Human -Machine Interaction 5264
Helman I Stern, Juan P. Wachs, and Yael Edan

A VSC Approach to Minimum-Time Optimal Current Control of a Switched Reluctance Motor 5269
Chih-Chiang Chiu, Hua-Tai Lin, Ruey-Juan Lin, and Wu-Chung Su

Table of Contents

Mining from Time Series Human Movement Data 5274
Chiu-Che Tseng and Diane Cook

Mid-Level Descriptors Extraction of Soccer Video with Domain Knowledge 5277
Bo Yang, Li-Feng Sun, Fei Wang, Peng Wang, and Shi-Qiang Yang

Temperature Control and Dependence on Carrier Material in Pulsed High-frequency Plasma Sterilization at Normal Atmospheric pressure 5282
Tetsuya Akitsu, Hiroshi Ohkawa, Keisuke Onishi, Keiko Katayama-Hirayama, and Masao Tsuji

A Sub-band Spectral Analysis for Electrocardiography 5288
Ching-En Tseng, Jia-Yush Yen, Jr. and Wei-Chien Chang

Security Enhancements to Routing Protocols for Backbone Networks 5294
Ming Yu

Tracking Human Hand Motion Using Genetic Particle Filter 5300
Zhu YE and Zhi-Qiang LIU

Modeling the emergency path handling And Emergency Department Simulation 5306
GLAA. B, HAMMADI. S, and TAHON. C,

Hierarchic Decision Support System approach with evaluation of decision classes of a traffic network transportation 5312
A.. Melki and S. Hammadi,

Transparent Ontological Integration of Multi-Agent Systems 5318
Marek Obitko and Vladimýr Maýk

The SOMN-HMM Model and Its Application to Automatic Synthesis of 3D Character Animations 5323
Yi Wang, Lei Xie, Zhi-Qiang Liu and Li-Zhu Zhou

Framework for Developing Distributed Systems in a Peer-to-Peer Environment 5328
Colin Ng, Zafeer Alibhai, Dorian Sabaz, Ozge Uncu, and William A. Gruver

JADE and JXTA Extensions for the Implementation of Distributed Systems 5333
Edward Chen, Dorian Sabaz, and William A. Gruver

A Unified Approach to Unwarping of Omni-Images into Panoramic and Perspective-View Images Using Pano-Mapping Tables 5339
S. W. Jeng and W. H. Tsai