2009 International Conference on Intelligent Human-Machine Systems and Cybernetics

IHMSC 2009

Table of Contents

Volume - 1

Preface - Volume 1
Committees - Volume 1
Reviewers - Volume 1

IHMSC 2009 Volume 1

An Improved Genetic Algorithm Based on J1 Subdivision and Fixed Point Theory .................................................................3

Yuzhen Dong, Jingjun Zhang, Ruizhen Gao, and Yanmin Shang

On Model of Reception and Departure Sidings Occupied of Urban High-Speed Railway Station and Its Genetic Algorithm Established .........................................................6

HongJun Yin and Sai Luo

On Optimal Method of Cargo Flows Distribution in Large Logistics Park Based on Random Decisive Genetic Algorithm ..................................................................................10

HongJun Yin

Research on Tracking Optimization Strategy of Three-Axis Tacking Equipment Based on Particle Swarm Optimization ..................................................................................14

Zhang Daxing, Jia Jianyuan, Wang Weidong, and Jia Wei

Image Denoising Based on Independent Component Analysis ..................................................................................................................18

Liu Jicheng and Zhang Yi

Influence of the Sun Gear on the Dynamical Behavior of Planetary Gear Train ......................................................................................21

Yan-feng Chen, Xin-yue Wu, and Jing Jin

Image Edge Detection Based on Lifting Wavelet .................................................................................................................................25

Xiu-bi Wang

The Application of Reliability Optimization of Redundant System Based on Ant Colonies Algorithm with Fuzzy Simulated ...............................................................................28

Fengli Huang, Jinmei Gu, and Jinhong Xu
Research of Security Detection for Networked Manufacturing Based on Optimized Support Vector Machine .................................................................32
   Shi Jinfa and Jiao Hejun
A Method Based on Iterative Combinatorial Auction Mechanism for Resource Allocation in Grid Multi-agent Systems ......................................................36
   Liu Xing and Zhao Lan
Controlling Chaos Based on the Modified ADVP Model .................................................................40
   Linze Wang and Ziming Li
The Bayesian Network about Computer Network Failure Diagnosis under OSI ..............................44
   Gong Yishan, Dong Chen, and Hao Jia
Safety Assessment of Construction Engineering Based on Combined Algorithms .................................................................47
   Li Yancang and Suo Juanjuan
Viscous Friction Research to Hydraulic Hammer Working Performance by Simulation ..............................51
   Tongle Xu and Xinyi Zhang
The Design and Implementation of Intelligent Transfusion Monitor System Based on Image Processing .................................................................55
   Huasheng Zhu
Multicriteria Fuzzy Decision-Making Method Based on the Intuitionistic Fuzzy Cross-Entropy .........................59
   Jun Ye
Study on Vibration Signal Denoising of Electric Spindle Based on Wavelet Transform .................................62
   Gao Rong
A Practical Design of Iris Recognition System Based on DSP .................................................................66
   Xin Zhao and Mei Xie
Weighted Fuzzy Relation Composition and Its Application in Fuzzy Synthetic Evaluation .................................71
   Yu Song and Xu Zongxue
Research on the Intelligent Control System of Roving Frame .................................................................73
   Weibing Xiao
Forwards-Backwards Information Repairing Algorithm and Appliance on Discrete Dynamic Bayesian Networks .................................................................76
   Haiyang Chen and Xiaoguang Gao
Mass Measurement Method of Bulk Materials Based on Reverse Engineering ......................................................81
   Li Feng, Hui Yanbo, and Wu Xiaojing
Heavy Explosive Removing Robot Control Technique Research .............................................................85
   Junyao Gao, Xueshan Gao, Jianguo Zhu, Wei Zhu, Boyu Wei, and Shilin Wang
Light Mobile Robot Power Common Technique Research .................................................................90
   Junyao Gao, Xueshan Gao, Jianguo Zhu, Wei Zhu, Boyu Wei, and Shilin Wang
Prediction of Diameter Error of Workpiece in Turning Process Using Neural Network

Gang Wang and Wei Hong Zhang

Study of the Mine Drainage Fuzzy Control System Based on MATLAB

Guimei Wang and Hui Song

Study on Closed-Loop Servo Control System and Background Service Based on CNC

Li Hui, Mao Jun, Li Xinhong, and Xin Zhongwei

Automatic Rediscovery and Remodeling of Logistic Process in E-Business Logistic Management

Yan Li and ShaoLing Deng

Model Predictive Control Applied into Time Delay Capsbot System

Wei Chen, Min Fang, and Hongnian Yu

Reinforcement Learning Control Based on TWO-CMAC Structure

Li Xin, Chen Wei, and Chen Mei

Ontology-Based Fast Devices Configuration in 3D Configuration Software

Zhang Quangui, Yan Jianzhuo, Wang Pu, Qi Yongsheng, and Fang Liying

Solenoid Valve Respond Time Test System Basing on Single Chip

Micro-computer

Ying-bao Zhao, Xue-ling Song, Chao-ying Liu, and Zhe-ying Song

A New Type of Tire Building Drum Based on Parallel Mechanism Position

Analysis and Kinematics Simulation

Zong he Guo, Hongliang Qi, Kejie Wang, and Hongpeng Song

Conflict Resolution Based on CBR in Intelligent CAPP System

Zhongbin Wang, Chao Tan, and Xiaojun Dong

HWME Design of Remote Technical Support for Equipment Maintenance

Mingquan Ma, Wen Sheng, Tao Nie, and Peng Chen

Research on ABS and TPMS System Merging Technology

Jiapeng Han, Xiaofeng Tang, Chen Meng, and Yongyan Liu

Intuitionistic Fuzzy Sublattice Group

Ke-Ming Zhang and Yan Bai

Dynamic Social Networking Supporting Location-Based Services

Min Li and Zhenjun Du

Simulation and Optimization of Parameters on DC Motor Double Closed-Loop Control System Based on Simulink

Xiao-kan Wang, Zhong-liang Sun, Lei Wang, and Shou-ping Huang

A Qualitative Method for Risk Preference of Insurance Companies

Ling Guo

Composite Event Detection Based on Automata

Xiangwei Sun, Rong Chen, and Zhenjun Du

The Kansei Research for MMFs Pattern of Product

Li Lin and Cheng-Qi Xue
Disk Scheduling with Fuzzy Parameters .......................................................... 168
  Xie Yuan and Linlin Ou
Passivity Analysis of Uncertain Neutral Fuzzy Systems ....................................... 170
  Wenpin Luo and Jun Yang
Note Recognition of Polyphonic Music Based on Timbre Model .............................. 174
  Lixin Shi, Junxing Zhang, and Min Li
Fuzzy Self-Adaptive PID Control Based on BP Neural Network for TCSC ........................ 178
  Dai Wenjin, Chen Xiangjie, and Lin Qingsheng
Impedance Control of Exoskeleton Suit Based on Adaptive RBF Neural Network ............................................................... 182
  Zhiyong Yang, Yuguang Zhu, Xiuxia Yang, and Yuanshan Zhang
Classification of Three-Class Motor Imagery EEG Data by Combining Wavelet Packet Decomposition and Common Spatial Pattern ................................................................. 188
  Wei Tu and Qingguo Wei
Robust Control of Underwater Supercavitating Vehicles Based on Pole Assignment .......................................................... 192
  Li Daqin, Yu-wen Zhang, Kai Luo, and Jian-jun Dang
Research on Maneuvering Decision for Multi-fighter Cooperative Air Combat ................ 197
  Yong-qin Sun, Xiao-cheng Zhou, Shang Meng, and Hong-da Fan
Research of Grid Resource Discovery Method Based on Adjacency List and Ant Colony Algorithm .......................................................... 201
  Youchan Zhu, Weiqiang Xu, and Pengfei Shen
Real-Time DC Servo Motor Position Control by PID Controller Using Labview .......................................................... 206
  Jianying Liu, Pengju Zhang, and Fei Wang
Model Identification and Control of Electro-hydraulic Position Servo System ................ 210
  Junpeng Shao, Zhongwen Wang, Jianying Lin, and Guihua Han
Analysis and Control of Synchronization for Heterogeneous Complex Networks with Time-Varying Multiple Delays ................................................................. 214
  Yuequan Yang, Tianping Zhang, Kun Huang, and Qing Zhu
Application of Genetic Algorithm Optimizing Neural Networks in Machining a Group of Holes ............................................................... 218
  Wang Wu and Zhang Yuan-min
Matching of Al2O3 Ceramic Tools with Workpiece Materials Based on Thermodynamics .......................................................... 221
  Fang Shao, Zhanqiang Liu, and Yi Wan
A Kind of Safety Fire-Control Algorithm for Shipborne Multi-Traverse-Weapon ................ 225
  Wang Liang, Qiu Zhiming, and Wang Liang
New Algorithm and Simulation for Firing Safety Zone Design of Shipborne Weapon System ............................................................... 229
  Wang Liang, Qiu Zhiming, and Wang Liang
The Research of Time-Delay Hyper-Chaotic Mapping Newton Iterative Method to Mechanism Synthesis ............................................................... 234
  Youxin Luo and Bin Zeng
Study of BBD Ball Mill Material Measure Based on Rough Sets and RBF
Neural Network Data Fusion .....................................................................................................................237
   Bao-xia Cui, Xing-yu Qu, and Yong Duan
The CPE Polymerization Temperature Research Based on Improved Internal
Model Control ..................................................................................................................................................241
   Yilin Zhou, Yong Yang, Huanran Guo, and Fang Wang
PID Control in the Reactor Temperature Control System Based on BP Neural
Network .......................................................................................................................................................245
   Yilin Zhou, Yong Yang, Jinliang Li, and Fang Wang
Controlling Chaos by PSO-Based Neural Network ....................................................................................249
   Sun Xuegang, Yun Chao, Cui Yihui, and An Zhengang
A New Harmonic Analyzer Based on Wavelet and Virtual Instrument ..................................................253
   Wang Zhan-guo, Shi Huang-shuang, and Wang Song
Formation Evaluation of Multi-AUV System for Deep-Sea Hydrothermal Plume
Exploration ..................................................................................................................................................256
   Xiaodong Kang, Hongli Xu, Xisheng Feng, and Yu Tian
An IPSO Algorithm for Grid Task Scheduling Based on Satisfaction Rate ..............................................262
   Xu-Huai Hu, Jing-Cheng Ouyang, Zhi-He Yang, and Zhuan-Hong Chen
Design and Implementation of RF Repast Management System ...............................................................266
   Lina Fu and Weiqiang Zhang
Orthogonal Wavelet Transform Based Double-Error Function Blind
Equalization Optimization Algorithm ..........................................................................................................269
   Ji Juan-juan, Guo Ye-cai, Gao Min, and Lliu Zhen-xing
The Design and Implementation of Fractal Image Coding Based on Wavelet ...........................................273
   Haiming Gu and Liang Li
On the Existence of Pure Strategy Nash Equilibrium for Non-cooperative
Games in L-convex Spaces ..........................................................................................................................276
   Haishu Lu
Fuzzy Neural Network Blind Equalization Algorithm Based on Radial Basis
Function ..........................................................................................................................................................280
   Zhen-xing Liu, Ye-cai Guo, Min Gao, Xue-qing Zhao, and Yan-ping Zhang
Blind Equalization Algorithms Based on Orthogonal Wavelet and Coordinate
Transformation ................................................................................................................................................284
   Xue-qing Zhao, Ye-cai Guo, and Wei Rao
Active Contour Based Lung Field Segmentation .........................................................................................288
   Jun Lai and Ming Ye
An Independent Ups and Downs Control Method of Underwater Submersible
Vehicle Based on Adaptive Fuzzy Control ................................................................................................292
   Peng Peng-fei and Liu Zhong
Application of Fuzzy Comprehensive Evaluation Method in Logistics Service
Quality Evaluation ..........................................................................................................................................296
   Yukui Sheng and Wanlian Lan
Application of Principal Component Analysis Method in Logistics Performance Evaluation
Yukui Sheng and Wanlian Lan

Application of Edge Detection Algorithm Based on Morphology in Robot Vision System
Yanfeng Fan, Gang Cui, and Fei Lei

Method and System for Virtual Roaming in Water Conservancy Works
Seng Dewen and Song Zhechen

Research of Workflow Scheduling Algorithm Based on Fuzzy Theory
Li S. W., Gong J. F., and Wang G. F.

The Effects of Asymmetric Market Information on Two-Echelon Supply Chain in Spot Market
Limei Wang, Zhong Yao, and Lu Liu

Application of Neural Network PID in Master-Slave Control System
Yang Xian-zhao and Cheng Geng-guo

Application of Colored Petri Net in Command and Control System
Jianying Liu and Xiaolong Li

Attitude Controller Design for Variable-Bend-Tail Vehicle
Guo Jian-guo and Zhou Jun

High-Speed and Real-Time Communication Controller for Embedded Integrated Navigation System
Zhang Guolong and Xu Xiaosu

Feed-Forward Neural Network Blind Equalization Algorithm Based on Super-Exponential Iterative
Min Gao, Ye-cai Guo, Zhen-xing Liu, and Yan-ping Zhang

The Inversion Method of Surface-Wave Frequency Dispersion Curve Based on Neural Network
Zhang Jin, Liu Huaishan, Meng Lin, and He Yi

A Novel Method of Minutiae Filtering Based on Line Feature Extraction
Jie Yang, Guangshun Shi, Shengjiang Chang, Zechao Tan, and Zifeng Shang

Influencing Factors on Vertex Normal Accuracy for Triangular Meshes
Yuhui Peng and Chenghui Gao

Applying of Recurrent Network Based on Skinner's Operant Conditioning in Robot
Hong-ge Ren and Xiao-gang Ruan

Researching of Video Signal Processing Base on Hardware Encoder
Zhiquan Ye and Xien Ye

Using Sequence Diagram to Support Aspect-Oriented Programming in MDA
Jingjun Zhang, Yuejuan Chen, Guangyuan Liu, and Hui Li

Low Memory Strip-Based Image Compression for Color Images
Li Wern Chew, Li-Minn Ang, and Kah Phooi Seng

Research of Fuzzy Control for Elevation Attitude of 3-DOF Helicopter
Feng Zhou, Denghua Li, and Peirong Xia
Reduced Memory SPIHT Coding Using Wavelet Transform with Post-Processing ................................................................. 371
   Li Wern Chew, Li-Minn Ang, and Kah Phooi Seng
Design of Sliding Mode Control Law in Space Parking ................................................................. 375
   Zhan-xia Zhu and Feng Xi
Artificial Life through GA in Simulation of Modern Anti-surface Warfare of Warship Fleet ................................................................. 379
   Bu-Yun Wang, Xiao-Zhe Zhao, and Xiao-Yu Kang
   Jun Wang, Huili Wang, and Yunpeng Wu
Dynamic Design of Electro-hydraulic Control Valve Based on Physical Simulation Model ................................................................. 388
   Yudong Xie, Yanjun Liu, and Yong Wang
Fuzzy Clustering Based Multi-model Support Vector Regression State of Charge Estimator for Lithium-ion Battery of Electric Vehicle ................................................................. 392
   Xiaosong Hu and Fengchun Sun
Single Chip Fuzzy Control System Based on Mixed-Signal FPGA ................................................................. 397
   Liming Wu, Junxiu Liu, and Min Dai
Analysis of Relationship between Efficiency and Motion Parameters of Robotic Fish ................................................................. 401
   Jinghu Yu and Cao Yi
Traffic Prediction in Telecommunications Networks: A Combined Forecast Method Based on Adaptive Genetic Algorithm ................................................................. 405
   Chenghai Yu, Jianlong Xu, Jie Chen, and Weiqiang Xu
FEDC: A Framework for Field Ecological Data Collection and Management ................................................................. 409
   Binglin Wang, Yuanchun Zhou, Jie Cheng, Xuezhi Wang, Jianhui Li, and Baoping Yan
Rearch on RBF Neural Network Fuzzy Control for STATCOM ................................................................. 413
   Yang Li and Chen Xiangjie
Theoretical Analysis on Automatization and Human-Machine Combination ................................................................. 417
   Min-yong Li and Xiao-rui Zhang
Multi-mission Path Re-planning for Multiple Unmanned Aerial Vehicles Based on Unexpected Events ................................................................. 423
   Bo-bo Meng, Xiaoguang Gao, and Yunhui Wang
Data Analysis and Capital Budgeting Model ................................................................. 427
   Wang Qi, Liu Xiaoshan, and An Sufang
Particle Swarm Optimization Based on Genetic Operators for Nonlinear Integer Programming ................................................................. 431
   Huadong Chen, Shuzong Wang, and Hangyu Wang
Event Game Theory and Air Combat Game ................................................................. 434
   Yibo Li, Meixiang Yu, and Xianzhuo Liu
An Improved Particle Swarm Optimization with Re-initialization Mechanism .................................................437
    Jie Guo and Sheng-jing Tang
The Robot Arm Distributed Digital Control Calculation ......................................................................................442
    Zhang Lianzhong and Wang Li
Lateral Control of Vehicle for Lane Keeping in Intelligent Transportation Systems ..................................................446
    Jing-ming Zhang and Dian-bo Ren
Fuzzy Logic Approach to Regenerative Braking System .....................................................................................451
    Jing-ming Zhang, Bao-yu Song, Shu-mei Cui, and Dian-bo Ren
A Communication Cell Oriented Service Discovery Architecture for Home Network ....................................................455
    Fuqing Wang
Research on Indexes System for Evaluating C^(4)ISR System for NCW ...............................................................459
    Yang Juniang, Du Jia, and Li Zhanwei
Substation Integrated Automation System Based on DSP ......................................................................................463
    Yanzhe Li, Duowang Fan, and Xuwei Dong
The Analysis and Application of Practical Criterion for Single-Phase-Ground Fault in Ungrounded Power System .................................................................466
    Yanzhe Li, Duowang Fan, and Xuwei Dong
Construction of Distributed Embedded Software Testing Environment ...............................................................470
    Pei Tian, Jiancheng Wang, Huaijing Leng, and Kai Qiang
The Research of Test Case Generation and Its Optimization Methods Based on Orthogonal Test Method and Greedy Algorithm .....................................................................................474
    Pei Tian, Huaijing Leng, Shaohua Yang, and Yufang Wang

Author Index - Volume 1
IHMSC 2009 Volume 2

Summarizing the Method of Solution of the Majority of Differential Equation by Using Tensor Product B-Spline Wavelet Scaling Functions in Network Security and Software Security Area, the Imitating Von Neumann Stability Analysis and a Typical Example ................................................................. 3

Xiong Lei, Liu KeZhong, Zhu ZhenHuan, Wen YuanQiao, Mu JunMin, and Hu WeiDong

Two Dimensional Tensor Product B-spline Wavelet Scaling Functions for Solution of Two-Dimensional Steady Navier-Stokes (NS) Equations ............................................. 7

Xiong Lei, Liu KeZhong, Zhu ZhenHuan, Wen YuanQiao, Mu JunMin, and Hu WeiDong

Influence of the Oil Cavity Depth on Dynamic Pressure Effect of Hydrostatic Thrust Bearing ................................................................................................................. 11

Junpeng Shao, Limin Zhou, Hongmei Li, Xiaodong Yang, Yanqin Zhang, and Mingshan Chi

Study on Flowability of the Gap Oil Film of the Multi-oil Pad Hydrostatic Bearing with Variable Viscosity ..................................................................................................... 15

Junpeng Shao, Hongmei Li, Xiaodong Yang, Yanqin Zhang, Xiaodong Yu, and Hui Jiang

Design of Intelligent Washout Filtering Algorithm for Water and Land Tank Motion Simulation ............................................................................................................. 19

Bo Wu, Xiaodong Yu, Jianying Li, and Guihua Han
A Hybrid Multi-objective Optimal Approach to Multiple UCAVs Coordinated Planning .........................................................................................................................23
   Xingguang Peng and Xiaoguang Gao
Research on Soft Starter with Pump Function .................................................................29
   Zhijun Jiang and Xiaoling Huang
Research on Solving Nonlinear Integer Programming Based on Multi-agent Genetic Algorithm ........................................................................................................33
   Huadong Chen, Shuzong Wang, and Hangyu Wang
Research on Designing of Soccer Robot's Color Tag and Identifying Algorithm ..........37
   Cui Hao, Denghua Li, and Shuhua Peng
Simulation Research on Gap Flow of Circular Cavity Multi-pad Hydrostatic Thrust Bearing ....................................................................................................................41
   Xiaodong Yu, Yanqin Zhang, Junpeng Shao, Chao Yin, Bo Wu, Zhimin Shi,
   Yan Ni, Shuyan Zhao, Hui Jiang, Xuemei Chang, and Changqing Yang
Numerical Simulation of Integrated Deformation of Heavy Hydrostatic Thrust Bearing and Experimental Research .................................................................45
   Junpeng Shao, Xiaodong Yang, Limin Zhou, Hongmei Li, Yanqin Zhang,
   and Hui Jiang
The Fuzzy Control of Electrode Regulator System ..........................................................49
   Wang Yuhua
Application of Mixed Programming between Matlab and Visual C++ on Circles Detection ....................................................................................................................53
   Fu Hudai, Wang Hua, and Yang Wei
Pitch Attitude Controller Design and Simulation for a Small Unmanned Aerial Vehicle ......................................................................................................................58
   Chenggong Huang, Qiongling Shao, Pengfei Jin, Zhen Zhu, and Bihui Zhang
Control Method of Heavy Hydrostatic Thrust Bearing .................................................62
   Guihua Han, Jianying Li, Yuhong Dong, and Junpeng Shao
Research on Knowledge Extraction and Visualization in Knowledge Retrieve ..........66
   Chen YongYue and Xia HuoSong
Study of the Electro-hydraulic Load Simulator Based on Flow-Press Servo Valve and Flow Servo Valve Parallel Control .................................................................70
   Jian-ying Li, Jun-peng Shao, Gui-hua Han, Zhong-wen Wang, and Bo Wu
Research on the Auto-construction Methods of Concept Map ......................................75
   Chen YongYue and Xia HuoSong
Research on Knowledge Acquisition in the Intelligent Retrieve ..................................78
   Chen YongYue and Xia HuoSong
Design of Mineral Feeding Supervisory Control System Based on Multi-source Information Fusion ...........................................................................................................82
   Yanfei Ye, Bailin Wang, Mingheng Shao, and Yongqi Zhang
Research on Multi-classification and Multi-label in Text Categorization ......................86
   Liu Hua
Fuzzy-PID Study on the New Type Hydraulic Brake System .................................................................90
 Junxia Li and Ziming Kou

Based on Neuron Adaptive Controller for Linear Motor Slip Frequency Vector Control System .................................................................94
 Hou Yunhai and Wang Yuhua

A Fast Algorithm for Multiple Targets Data Association in HF Bistatic Radar System Based on MNJPDA .................................................................99
 Wang Rui, Zong Hua, and Zong Chengge

Better Power Management of Wireless Sensor Network ........................................................................103
 Ke Li, Chunnian Zeng, and Hong Liang

The Preliminary Study on the Human-Factor Evaluation System for Maintainability Design .................................................................107
 Liu Rui, Lv Chuan, Zou Yingzhi, and Zhou Dong

A Novel NN-Based Soft Sensor Based on Modified Fuzzy Kernel Clustering for Fermentation Process .................................................................113
 Mei Congli, Xu Haixia, and Liu Jingjing

An Improved Particle Swarm Optimization With Fuzzy c-Means Clustering Algorithm .................................................................118
 Mei Congli and Zhou Dawei

Soft Sensor Modeling Using SVR Based on Genetic Algorithm and Akaike Information Criterion .................................................................123
 Huang Zhenyue and Mei Congli

Advanced Development on Auto Body Layout Design Tool Sampling Database Basing on CATIA V5 .................................................................128
 Duonian Yu, Zhaoyu Long, Wei Lan, and Guangxu Yu

Numerical Simulation of Fuzzy-PID Tension Control System Based on Rotary MRF Damper .................................................................133
 Hu Li-yong, Zhu Xi-lin, Zheng Di, and Zhan Jian-ming

The Character Study of Dynamic Matrix Control ........................................................................138
 Zhijun Jiang and Xiaoling Huang

Control of Manipulator Trajectory Tracking Based on Improved RBFNN .................................................................142
 Wei Juan, Huixian Yang, and HaiXia Xie

Exponential Stability of a Repairable System with N Failure Modes and One Standby Unit .................................................................146
 Fu Zheng and Xing Qiao

Study on General Multi-agent Systems Implementation Framework .................................................................150
 Yang Ping, Zeng Jing, Liu Weidong, and Jia Kai

Linking Broken Characters in Online Handwritten Chemical Formulas .................................................................154
 Lin Zhao, Hu Yan, Guangshun Shi, and Jufeng Yang

Improved BP Neural Network and Its Application in Ship-Based Navigation System .................................................................158
 Jianjuan Liu
Bring AJAX to Web Application Based on Grid Service .................................................................162
Youchan Zhu and Pengfei Shen

Study on Stability for Longitudinal Motion of Autonomous Underwater Vehicle .................................166
Hao Ding and Deshi Wang

The Design of the Rescue Robot Long-Distance Control Based on 3G and GPS ..................................................170
Bi Jincun, Li Qi, and Liu Yanfei

Development and Research of Measuring Capacitance and Inductance Based in Experiment Teaching .................................173
Guo Suo-li, Liu Yan-fei, Wang Xiao-rong, and Li Qi

High Precision Prediction of Rolling Load of Finishing Stands by Fuzzy Identification Method .................................176
Wang Zhiyong, Jin Herong, and Liu Fucai

An Effective Method for Traffic Signs Segmentation ........................................................................180
Mudan Hu, Shuangdong Zhu, and Ken Chen

Local Stereo Matching with Adaptive and Rapid Cost Aggregation ..............................................................185
Li Li and Cai-Ming Zhang

Wavelet Neural Network Model Application on the Case Selection of Tax Check in Real Estate Industry ........................................................................189
Xiong-zhi Wang and Qin-hua Xie

Method of Traffic Signs Segmentation Based on Color-Standardization ................................................................193
Xin Liu, Shuangdong Zhu, and Ken Chen

Fault Diagnosis by an Observer-Based Fuzzy Decision System ........................................................................198
Dapeng Ye, Chunliang Zhang, and Paul P. Lin

Variable Speed Wind Turbine Maximum Power Extraction Based on Fuzzy Logic Control ..................................................202
Xingjia Yao, Changchun Guo, Zuoxia Xing, Yan Li, and Shu Liu

The Adaptive Control for a Class of Nonlinear Systems Based on Dynamic Approximate Full Parameter Model Nonlinearization ........................................................................206
Zhiqiang Hu

LQG Controller for a Variable Speed Pitch Regulated Wind Turbine .....................................................................210
Xingjia Yao, Shu Liu, Guangkun Shan, Zuoxia Xing, Changchun Guo, and Chuanbao Yi

Feature Subset Selection Using a Fuzzy Method ..................................................................................214
Marcos Evandro Cintra, Trevor P. Martin, Maria Carolina Monard, and Heloisa de Arruda Camargo

A New Validity Index of Fuzzy c-Means Clustering ..................................................................................218
Xin-bo Zhang and Li Jiang

Research on the Crystal Oscillator Direction Recognition System .....................................................................222
Jialin Cui, Yigang Wang, Shengli Fan, and Xiang Zhang

Realization Strategy of Active Power Filter Harmonic Current Detecting Based on DSP ...............................226
Li Yang, Sui Xiu-wu, and Du Yu-hong
Trajectory Optimization for Unpowered Gliding Submissile .................................................................229
  Jiao Shi, Shengjing Tang, and Chun-lei Yang

A Novel Data Association Approach Based on Topology .................................................................233
  Feihu Zhang, Chongzhao Han, Deqiang Han, Jin Yang, and Xing Huang

A Mixed $H_2/H_\infty$ Approach to Fault Detection for Discrete-Time Systems .................................237
  Zhaoming Wang, Dechun Ba, and Tao Qu

Signal Reflection Suppression Method in High-Speed Data Acquisition and Processing System ........241
  Jun-xing Zhang, Ji-yin Zhao, and Chun-juan Bo

The Research of Active Knowledge Support System in Intelligent Design .......................................245
  Xi-ai Zhang, Ya-rui Cui, and Yi-ping Lu

Active Knowledge Support System and Application in Garment Structure Design ..........................249
  Ya-rui Cui, Xi-ai Zhang, and Chia Y. Han

Design of the Control System of Tightening Machine Based on CAN Bus ......................................253
  Yonghan Zhou, Zhonghua Wang, and Jiawei Li

Modeling Mine Virtual Environment Based on Multi-agent ............................................................257
  Lin-qin Cai, Ting Wang, Jing Zhang, and Zhi-yong Luo

Human-Machine Interface: Design Principles of Visual Information in Human-Machine Interface Design ........................................................................................................262
  Chao Gong

Design of Keyboard Input Interface in Intelligent Instruments ..........................................................266
  Xianjun Yi and Cuimei Liu

Research and Improvement of Search Engine Based on Lucene .....................................................270
  Yong Zhang and Jian-lin Li

Cybernetics in Software System Verification .....................................................................................274
  Jianguo Chen, Qi Zhang, and Stefan D. Bruda

Comparison of Colour Spaces for Visual Saliency .............................................................................278
  Christopher Wing Hong Ngau, Li-Minn Ang, and Kah Phooi Seng

A Novel Method for Ranking Interval-Valued Intuitionistic Fuzzy Numbers and Its Application to Decision Making .................................................................282
  Weibo Lee

Research on Interactive Segmentation Algorithm Based on Search Path Optimization .....................286
  Haimin Ma

The Study of C(^4)ISR System Effectiveness Evaluation Based on Information Entropy in the Network Centric Warfare .........................................................................................290
  Qing Xue, Guo-hui Zhang, Bing-bing Lei, and Xing-dong Peng

Steady-State Queue-Length Distribution for Mx/G/1 Queue under N-policy ..................................294
  Liu Mingwu, Ma Yongkai, and Deng Bin

Multiview Image Compression for Wireless Multimedia Sensor Network Using Image Stitching and SPIHT Coding with EZW Tree Structure .........................................................298
  Wai Chong Chia, Li-Minn Ang, and Kah Phooi Seng
Three-Dimensional Binary-Uncoded Video Compression Using 3DSPIHT-ZTR .......................... 302
   Wai Chong Chia, Li-Minn Ang, and Kah Phooi Seng

Research on Localization and Mapping for Lunar Rover Based on RBPF-SLAM ................................................................. 306
   Yan Ma, Hehua Ju, and Pingyuan Cui

Bayesian Face Recognition Using Wavelet Transform ............................................................. 312
   Niu Liping, Li XinYuan, and Dou Yuqiang

Effect of Environmental Temperature on the Airflow Gyroscope ........................................ 316
   Lin-hua Piao, Yan-jie Li, Bai-hua Li, and Fu-xue Zhang

Effect of Environmental Temperature on the Sensitivity of the Airflow Level Posture Sensor ................................................................. 320
   Lin-hua Piao, Yan-jie Li, Bai-hua Li, and Fu-xue Zhang

FEM Analysis of Micro-machined Airflow Accelerometer's Sensitive Mechanism ......................... 324
   Yan-jie Li, Lin-hua Piao, Bai-hua Li, and Fu-xue Zhang

Basing on the Gear Pump's Radial Deformation to the Leakage Effects of Finite Element Analysis ................................................................. 327
   E. Shiju, Yang Lijuan, Jing Baode, and Liu Meiyu

Research of Internal Leakage Theory Model in the Exterior Meshing Gear Pump ............................. 331
   Xu Hong, Yang Lijuan, Jing Baode, and Tao Zhiliang

A Survey of Bottom-Up Visual Saliency Methods in Wireless Multimedia Sensor Networks ................................. 335
   Christopher Wing Hong Ngau, Li-Minn Ang, and Kah Phooi Seng

Study on Sliding Mode Speed Control with RBF Network Approach for Doubly-Fed Induction Motor ................................................................. 339
   Li Yuan, He Feng-you, and Ye Zong-bin

Nominal Model-Based Control for Permanent Magnet Synchronous Motor .................................................. 343
   Li Yuan, He Feng-you, and Wang Feng

The Application of CRFs in Part-of-Speech Tagging ........................................................................ 347
   Xiaofei Zhang, Heyan Huang, and Zhang Liang

Lane Detection and Kalman-Based Linear-Parabolic Lane Tracking .................................................. 351
   King Hann Lim, Kah Phooi Seng, Li-Minn Ang, and Siew Wen Chin

Improved Watershed Lips Detection and Modified $H\infty$ Tracking System Based on Lyapunov Stability Theory ................................................................. 355
   Siew Wen Chin, Kah Phooi Seng, Li-Minn Ang, and King Hann Lim

Influence of Non Quadrature of Phase Shifter to Adaptive Interference Cancellation System ................................. 359
   Yunhao Jiang, Weiming Ma, and Zhihua Zhao

Real-Time Implementation of Vision-Based Lane Detection and Tracking ........................................ 364
   King Hann Lim, Kah Phooi Seng, Anh Cat Le Ngo, and Li-Minn Ang
Simple Analysis of the Application of Distribution Automation System in Power Supply Enterprises .................................................................368
   Wu Xiaoxi, Yang Longyue, and Qi Ya
Adaptive Interference Cancellation System with Different Correlation Control Methods ..............................................................................................372
   Yunhao Jiang, Weiming Ma, and Zhihua Zhao
Development & Application of Reactive Power Optimization Software for Regional Power Network ..................................................................................376
   Biao Pang, Wei Long, and Lin Hu
Monitoring System of Silkworm Incubation Based on Predictive Compensation with Gain Self-Adaptive .................................................................380
   Chong Wu, Wei Long, and Qiang Wang
Distributed Inspecting and Control System for Motor Vehicle Safety Performance .........................................................................................................384
   Ling Tao, Haidong Xu, and Zhi Zhang
Research on the Roller Bearing Fault Diagnosis of the Engineering Vehicle Based on Dynamic Clustering and Multi-class SVM Algorithm .................................................388
   Qiu-Rui Li, Jing-Qi Xiong, Rui Sun, Zun-Ling Li, and Bo Liu
Hybrid Fuzzy SVM Model Using CART and MARS for Credit Scoring .........................................................................................................................392
   Ping Yao
A Survey of Approximate Dynamic Programming .................................................................................................................................396
   Lin Wang, Hui Peng, Hua-yong Zhu, and Lin-cheng Shen
Binary Image Watermarking Algorithm Based on SVD .................................................................................................................................400
   Hu Zhihua
Research of Temperature and Humidity Decoupling Control for Central Air-Conditioning System ..................................................................................404
   Xianmei Zhao, Jie Tang, and Dongxian Chen
Research on Dynamic Targets Assignment for Multi-UCAV Based on Ordinal Interval Ranking Information .................................................................409
   Xia Chen, Zhi-Gao Guo, and Yi-Bo Li
A New Method for Dynamic Fault Diagnosis of Electric Appliance .................................................................................................413
   WenJie Tian, Yue Tian, Lan Ai, and JiCheng Liu
Automatic Meter Reading Monitoring System Based on G18 Module .............................................................................................................................419
   Ziye Long, Ziwu Long, Jun Li, Tiedong Ma, Yicheng Zheng, and Yuying Qin
Optimal Non-uniform Face Mesh for 3D Face Recognition .........................................................................................................................423
   Wei Jen Chew, Kah Phooi Seng, and Li-Minn Ang
Application of Fuzzy Immune PID Control Based on PSO in Hydraulic AGC Press System ........................................................................................................427
   Xinyi Ren, Fengshan Du, Huagui Huang, and Hongyan Yan
A New Optimization Algorithm for Fuzzy Set Design .........................................................................................................................431
   WenJie Tian, Yue Tian, Lan Ai, and JiCheng Liu
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous Neighbourhood Value Access from a Single Instance Storage on Multiple Memory Banks</td>
<td>436</td>
</tr>
<tr>
<td>Lee Seng Yeong, Li-Minn Ang, and Kah Phooi Seng</td>
<td></td>
</tr>
<tr>
<td>Two Novel Particle Swarm Optimization Algorithm Models</td>
<td>440</td>
</tr>
<tr>
<td>Shengli Song, Li Kong, and Jingjing Cheng</td>
<td></td>
</tr>
<tr>
<td>Kinematic Simulation of a Spatial Staggered Joint Based on COSMOSMotion</td>
<td>444</td>
</tr>
<tr>
<td>Fuqin Yang, Hao Chen, Degong Chang, and Jun Xu</td>
<td></td>
</tr>
<tr>
<td>Simulation Analysis of Twin Tripod Sliding Universal Joints</td>
<td>448</td>
</tr>
<tr>
<td>D. G. Chang, D. Z. Song, and F. Q. Yang</td>
<td></td>
</tr>
<tr>
<td>Surface Reconstruction Based on Computer Stereo Vision Using Structured Light Projection</td>
<td>451</td>
</tr>
<tr>
<td>Lijun Li, Yingjie Ke, and Kaiyong Jiang</td>
<td></td>
</tr>
<tr>
<td>Comparison of Performance of Computer Pointing Devices for Chinese Aged People</td>
<td>455</td>
</tr>
<tr>
<td>Weidan Xu and Hongting Li</td>
<td></td>
</tr>
<tr>
<td>Fuzzy Control Rules’ Revisal Based on the Compatibility</td>
<td>459</td>
</tr>
<tr>
<td>Zhigang Li, Weijia Guo, and Yuliang Chen</td>
<td></td>
</tr>
<tr>
<td>Hybrid Particle Swarm Optimization for Vehicle Routing Problem with Reverse Logistics</td>
<td>462</td>
</tr>
<tr>
<td>Yang Peng</td>
<td></td>
</tr>
<tr>
<td>Genetic Algorithm Improved by Checking Repetition</td>
<td>466</td>
</tr>
<tr>
<td>Zhigang Li, Weijia Guo, and Shanshu Zhang</td>
<td></td>
</tr>
<tr>
<td>Control of the Underactuated Flexible Manipulator in the Operational Space</td>
<td>470</td>
</tr>
<tr>
<td>Wei Chen, Lianyu Zhao, Xinhua Zhao, and Yueqing Yu</td>
<td></td>
</tr>
<tr>
<td>A Formal Definition of Logic Topology for All-to-One Reduces in Distributed Memory Parallel Computing</td>
<td>474</td>
</tr>
<tr>
<td>Yuqing Xiong</td>
<td></td>
</tr>
<tr>
<td>3D Watershed Based on Rainfall-Simulation for Volume Segmentation</td>
<td>477</td>
</tr>
<tr>
<td>Lee Seng Yeong, Li-Minn Ang, and Kah Phooi Seng</td>
<td></td>
</tr>
<tr>
<td>Robust Flight Control Law Development for Tiltrotor Conversion</td>
<td>481</td>
</tr>
<tr>
<td>Jie Sun, Jun Yang, and Xiaoping Zhu</td>
<td></td>
</tr>
<tr>
<td>The H∞-Optimization in a Locally Convex Space</td>
<td>485</td>
</tr>
<tr>
<td>Ma Lixin</td>
<td></td>
</tr>
<tr>
<td>Feedback Control Optimization of Vehicle Suspension System on Uneven Road</td>
<td>489</td>
</tr>
<tr>
<td>Xueping Li and Demin Wei</td>
<td></td>
</tr>
<tr>
<td>Research on Threat Assessment Based on Intuitionistic Fuzzy Set Theory</td>
<td>494</td>
</tr>
<tr>
<td>Zhang Lin, Yuan Zhishu, and Fan Wenxin</td>
<td></td>
</tr>
</tbody>
</table>

**Author Index - Volume 2**