

Contents

Part I: Intelligent Control and Robotics and Automation

Formal Description of 3D Semi-tunnel Component	1
<i>Enke Hou, Zhihua Zhang, Xiaoxia Luo</i>	
Application of Neural Networks to the Correction of a Stiffness Matrix in a Finite Element Model	9
<i>Zhong Yang, Haifei Si</i>	
Passive Ranging Based on Single-Band IR Sensor without Extinction Coefficient	17
<i>Xiao-ning Fu, Di Wang</i>	
A New Variable Step Size NLMS Algorithm Based on Decorrelation for Second-Order Volterra Filter	25
<i>Zhijin Zhao, Pingping Yan, Lei Shen</i>	
Research and Design of the Integrated Administration Management System for Enterprises	33
<i>Junhong Zheng</i>	
An Improved Iterated Local Search Algorithm for the Permutation Flowshop Problem with Total Flowtime	41
<i>Xingye Dong, Ping Chen, Houkuan Huang</i>	
A Framework on Halal Product Recognition System through Smartphone Authentication	49
<i>Cik Ku Haroswati Che Ku Yahaya, Murizah Kassim, Muhammad Hafiz bin Mazlan, Zamri Abu Bakar</i>	
Decision Support System for Workload of Design and Research Institutes	57
<i>Zhizhen Dong, Min Hu</i>	
Research and Development of a Ping-Pong Robot Arm	65
<i>Xiaowen Yu, Yu Zhao, Chenglong Fu, Ken Chen</i>	

A New Programming Language for PLC Using Bond Graph	73
<i>Ahmad Naebi, Masoud Hassanpour Aghdam, Ali Ghalehban Zanjanab, Esmail Nourani, Saeed Hassanpour Aghdam</i>	
Physical and Computer Base Human Brain Simulations	81
<i>Zhi Zun Zhou, Jing Ding, Yan Fan Yang, Bao Cui</i>	
Fault Diagnosis of Excavator Hydraulic System Based on Expert System ...	87
<i>Jian Yin, Liting Mei</i>	
Geometric Errors Measurement of a Large Scale Five-Axis Gantry Type High Speed Machine Tool	93
<i>Jian Yin, Ming Li, Changkai Xu</i>	
Identical Predictions for Different Singular Mixed Models	101
<i>Shiqing Wang</i>	
Probing Concepts of Sustainable Package Design	109
<i>Min Jie</i>	
Variable Sparse Multiple Kernels Learning for Novelty Detection	115
<i>Xiankai Chen, YingDong Ma, Liu Chang, George Chen</i>	
An Approach for Determining the Next Best View Based on Voxel Map and Simplex Method	125
<i>Shihui Zhang, Xiaowei Qu</i>	
Research of Self-organization Wireless Sensor Network	133
<i>Yulan He, Jie Yuan</i>	
The Design of the Composite Wheeled Mining Robots	141
<i>Liu Yun</i>	
Hall Systems Based on Vehicle Integrated Life-Cycle Project Management Model	147
<i>Yongtao Yu, Ying Ding</i>	
An Intelligent Fault Diagnosis Method for Oil-Immersed Power Transformer Based on Adaptive Genetic Algorithm	155
<i>Youwen Li, Demei Bao, Cun Luo, Lijun Huang, Liming Cao</i>	
A Novel Approach to Edge Detection of Color Image Based on Quaternion Fractional Directional Differentiation	163
<i>Chaobang Gao, Jiliu Zhou, Fangnian Lang, Qiang Pu, Chang Liu</i>	
Cost Distribution of Multi-path Based on Vehicle Speed on Cross-Section	171
<i>Wei Cai, Anguo Dong, Hongzhi Xue, Xueli Song, Bo Chen</i>	

The Study of Applying the Fuzzy Overall Evaluation Method to Solve the Satisfaction of the Objective in the Separating-Planting Mechanism	179
<i>Li Dai, QunWei Hu, Xiong Zhao, Yun Zhao</i>	
The Learning of Morphological Principles: A Statistical Learning Study on a System of Artificial Scripts	187
<i>Qiuyan Wu, Xiaoping Fang, Quanjing Chen, Yaoran Li, Yuan Deng</i>	
Research on Multi-Agent Intelligent Decision Support System Based on Blackboard	197
<i>Yongyong Sun</i>	
Consensus Control for a Class of High Order System via Sliding Mode Control	207
<i>Changbin Li, Yi He, Aiguo Wu</i>	
Design and the Position Analysis of a Novel Translational Orthogonal Parallel Micromanipulator	215
<i>Yuzhu Wang, Zhenlin Jin</i>	
Conformal Minimal Convex Analysis of Geodesic Active Contours	223
<i>Guohua Chen</i>	
Medical Image Denoising Based on Improved Anisotropic Diffusion	233
<i>Ying Meng</i>	
Attitude Measurement of Dynamic Object by Laser Tracking System and Optoelectronic Methodology	241
<i>Minghua Pan, Chuncao Zhang, Guoli Zhu</i>	
Research on Pyrolysis Behavior of Coal Tar Using TG-MS	249
<i>Lian-yong Wang, Lei Dai, Jiu-ju Cai</i>	
Dynamic Image Segmentation Using Incremental Nyström Method	257
<i>Hongyu Li, Shicheng Wen</i>	
Research of the Spatial Position and Attitude Detection Technology about New Deep Hole Measurement Device	265
<i>Bao Jiandong, Wang Changming</i>	
Data Collection and Transmission System with a Vibrating Stress Meter Based on GPRS	273
<i>Xin He, Kun Liu</i>	
High-Precision Measurement Method of Time-Interval Based on Pseudo-Random Sampling	283
<i>Minshuang Huang, Junfen Huang, Yinqi Feng</i>	

Simulation of Logistics System with Aspect of Pallet Requirements Optimization Based on Digital Factory	293
<i>Zailin Guan, Luguang Cao, ChuangJian Wang, Yanyan Cui, Xinyu Shao</i>	
On the Convergence of Iterative Identification of Hammerstein Systems ...	303
<i>Guangshe Zhao, Guoqi Li, Changyun Wen, Feng Yang</i>	
Learning Biped Locomotion Based on Q-Learning and Neural Networks ...	313
<i>Peng Ziqiang, Pan Gang, Yu Ling</i>	
Using GA and Computation Parallelism for the Optimal Pilot Bus Selection	323
<i>Michal Kopček, Dušan Mudrončík</i>	
Research on Ontology-Based Relational Data Integration	329
<i>Zhuang Miao, Jingwu Wang, Jinpeng Wang, Yang Li, Weiguang Xu</i>	
Research of Neural Network PID Control of Aero-engine	337
<i>Haiquan Wang, Dongyun Wang, Guotao Zhang</i>	
The Design and Implementation of Soccer Robot for RoboCup Middle Sized League	345
<i>Wei Li, Hui Feng Wang, Lars Asplund</i>	
Study of Cloud-Type Recognition Based on Multi-class Features	355
<i>Ling Yang, Zhong-ke Wang, Jun Wang, Wen-ting Cui</i>	
A Fast Sparsity Adaptive Matching Pursuit Algorithm for Compressed Sensing	363
<i>Chun-hui Ma, Chun-yun Xu, Lei Shen, Shi-lian Zheng</i>	
Modeling Research on Internal Manufacturing Supply Chain Based on SCOR Model	369
<i>Hailili Maimaiti, Zailin Guan, Baoxi Wang</i>	
A Non Real-Time Registration Algorithm for Multi-radar System	379
<i>Hongyan Li, Xinxi Feng, Zhaoying Wang, Tao Liu</i>	
An Efficient Video Panorama Constructing Algorithm Based on Color Invariant Features	385
<i>Ping Zhou, Xiling Luo</i>	
Approximate Output Regulation of Spherical Inverted Pendulum by Neural Network Control	393
<i>Zhaowu Ping, Jie Huang</i>	
Discrete-Time Sliding-Mode Control of a Mobile Platform with Four Driving/Steering Wheels	401
<i>Adrian Filipescu, Viorel Minzu, Adriana Filipescu, Eugenia Minca</i>	

Tuning of Unscented Kalman Filter Based Biogeography-Based Optimization for UGVs Navigation	411
<i>Kuifeng Su, Zhidong Deng, Zhen Huang</i>	
Robust Real-Time Lane Marking Detection for Intelligent Vehicles in Urban Environment	421
<i>Wentao Yao, Zhidong Deng</i>	
Research and Application of Elevator Energy-Saving Devices with Super Capacitor to Store Energy	429
<i>Zehua Yao, Jianru Wan, Bin Li, Jianxiong Qian, Sheng Wang</i>	
The Design of Elevator Failure Monitoring System	437
<i>Zehua Yao, Jianru Wan, Xiangwei Li, Liguang Shi, Jianxiong Qian</i>	
Reconfiguration of Aircraft Distributed Power Distribution System Based on Multi-Agent	443
<i>Ling Zhang, Lin Cai, Li Wang</i>	
A Method of Delay Compensating for UPQC Compensations Detection without PLL	451
<i>Jianru Wan, Hailiang Zhou, Zehua Yao, Jianxiong Qian</i>	
Research on Optimum Energy Control Method for UPQC Based on Super Capacitor Energy Storage System	459
<i>Jianru Wan, Zehua Yao, Shuchao Li, Jianxiong Qian, Shuang Han</i>	
Quality Control of Sensor Network Data	467
<i>Davood Izadi, Jemal Abawajy, Sara Ghanavati</i>	
The Design on Intelligent Logging Unblocking Device	481
<i>Yang Yu, Ming Chi</i>	
Generation, Testing and Calibration of Periodic Signal Distortion	489
<i>Huixin Zhang, Sai Qi, Yong Zhou</i>	
Properties of the Fifth Type of Covering-Based Rough Sets	497
<i>Jiaqing Zhou, Hongmei Nie</i>	
Research on Strain Measurement of Abyssal Riser with FBG Sensors	505
<i>Baojun Li, Haiyan Wang, Xiaohong Shen, Dexing Yang, Shiquan Jiang, Liangbing Xu</i>	
Comparison Evidential Fusion Network with Decision Tree for Reliable Contextual Information	513
<i>Hyun Lee, Byung Rak Son, Jung Eun Kim, Sang Cheol Lee</i>	
Research on Key Technology of LXI Bus Instrument Interface System	521
<i>Li Ming, Liang Siyang, Fu Wei</i>	

A Study about the Prediction of University Library Lending Based on Multiple Regression Analysis	525
<i>Bao Sun</i>	
Feature Fusion and Prototype Learning Algorithm Based Smoking Shot Recognition	533
<i>Wuping Zhang, Pengfei Zhu, Xinzhe Wang, Wentao Tian</i>	
Information Visualization of Water Supply and Groundwater	541
<i>Sang Gon Woo, JinLong Piao, Hyung Chul Kim, Cheol Min Kim, Seong Baeg Kim</i>	
IT Fusion-Based Correlation Analysis between Jeju Regional Rainfall and Groundwater Level	549
<i>JinLong Piao, Seong Baeg Kim, Hanil Kim</i>	
Mobile Digital Storytelling Development for Energy Drink's Promotion and Education	557
<i>Yong-Seok Kim, Min-Ji Han, Chang-Jun Hong, Seong Bo Ko, Seong Baeg Kim</i>	
Agile Automation Systems Based on Cyber-Physical Systems and Service-Oriented Architectures	567
<i>Detlef Zühlke, Lisa Ollinger</i>	
A Straightforward Algorithm to Transform Robot Control State Machines into Verifiable Lotos Specifications	575
<i>Reza Babae, Seyed Morteza Babamir</i>	
A Multitasking System Based on RTX51	585
<i>Guoan Zhang, Longmei Tang, Jishi Zheng</i>	
A Small Tracked Robot for Cable Tunnel Inspection	591
<i>Shufeng Tang, Shihui Chen, Qiong Liu, Biao Wang, Xiaohong Guo</i>	
A Novel RFID Authentication Protocol with Ownership Transfer	599
<i>Han Jia, Jun Wen</i>	
Research of Trenchless Detection Technology and Equipment of Small-Caliber Buried Oil and Gas Pipeline	607
<i>Zhen Zhang, Zhuxin Li, Yi Su, Jun Chen</i>	
Research of Path Planning in Virtual Scenes Based on Ant Colony Algorithm and Axis Aligned Bounding Boxes Collision Detection Technology	615
<i>Jian-min Wang, Hong Yin, Wen-bin Xie, Guo-qing Qiu, Ji-heng Xu, Ying Huang</i>	

An Effective and Efficient Perceptual Organization Method for Image Segmentation 623
Yingjian Qi, Xu Yang

Research on an Autonomous Traffic Information System Based on Inter-vehicle Communication Ad Hoc 631
Qi Zhang

Development of a Virtual Humanoid Model Using the Denavit-Hartenberg Parameters as a Base for Visual Feedback Applications 639
Davinia Font, Tomàs Pallejà, Mercè Teixidó, Marcel Tresanchez, Jordi Palacín

Knowledge Map and Knowledge Management Tools to Support Distributed Product Design 647
Jiang Zuhua, Su Hai, Huang Yongwen

The Inverse Kinematics Solutions of Robot Manipulators with Offset Wrist Using the Offset Modification Method 655
Haihong Pan, Bing Fu, Lin Chen, Junjie Feng

Author Index 665