

# **2006 IEEE International Conference on Networking, Sensing and Control**

**Ft. Lauderdale, FL  
23-25 April, 2006**

**Volume 1 of 2**



**IEEE Catalog Number:**  
**ISBN:**

**06EX1267**  
**1-4244-0065-1**

**Copyright © 2006 by The Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republications permission, write to IEEE Copyrights Manager, IEEE Operations Center, 445 Hoes Lane, Piscataway, New Jersey USA 08854. All rights reserved.

IEEE Catalog Number: 06EX1267

ISBN: 1-4244-0065-1

LOC: 2005937119

**Additional Copies of This Publication Are Available from:**

IEEE Service Center  
445 Hoes Lane  
Piscataway, NJ 08854  
IEEE Service Center  
445 Hoes Lane  
Piscataway, NJ 08854

Phone: (800) 678-IEEE  
(732) 981-1393

Fax: (732) 981-9667

E-mail: [customer-service@ieee.org](mailto:customer-service@ieee.org)

# Table of Contents

<b>An Entropy-based Clustering in Mobile Ad hoc Networks.....</b>	<b>1</b>
Kimberly Robinson, Damla Turgut, Mainak Chatterjee	
<b>Durable Distance Vector Multicasting Protocol for Mobile Ad Hoc Networks .....</b>	<b>6</b>
Se-young Lee, Hyeong Soo Chang	
<b>Task Switching in Mobile Wireless Sensor Networks .....</b>	<b>12</b>
Carlos H. Caicedo-N., Milos Zefran	
<b>A Dynamic-Bandwidth-Allocation-with-Collision-Avoidance MAC Design for Mobile Ad Hoc Network .....</b>	<b>18</b>
Zaihan Jiang, MengChu Zhou	
<b>A Stochastic Reward Net-Based Performance Analysis of LEO Satellite Networks .....</b>	<b>24</b>
Zhiguo Hong, Fuchun Sun, Fanjiang Xu, Zhihua Fan, Gang Zheng	
<b>Token Routing: A Power Efficient Method for Securing AODV Routing Protocol.....</b>	<b>29</b>
Leiyuan Li, Chunxiao Chigan	
<b>Delay-constrained, energy-efficient routing in wireless sensor networks through topology control.....</b>	<b>35</b>
Pavan K. Pothuri, Venkatesh Sarangan, Johnson P. Thomas	
<b>A Distributed Composite Multiple Criteria Routing Using Distance Vector .....</b>	<b>42</b>
Behnam Malakooti, Ivan Thomas	
<b>A Technique for Power-Aware Query-Informed Routing in Support of Long-Duration Queries for Sensor Networks.....</b>	<b>48</b>
Zhiguo Zhang, Sol M. Shatz	
<b>Preserving Coverage for Wireless Sensor Networks of Nodes with Various Sensing Ranges .....</b>	<b>54</b>
Hongxing Bai, Xi Chen, Xiaohong Guan	
<b>Swing-up Control of The Acrobot Using A New Partial Linearization Controller Based on The Lyapunov Theorem.....</b>	<b>60</b>
Tomohiro Henmi, Mingcong Deng, Akira Inoue	
<b>Towards a Formal Design of Behaviors for Autonomous Robots .....</b>	<b>66</b>
Shangming Wei, Milos Zefran	
<b>Modeling of Ancient-style Chinese Character and Its Application to CCC Robot.....</b>	<b>72</b>
Fenghui Yao, Guifeng Shao	
<b>Self-Localization of Autonomous Sewer Robots by Using a Stereo Camera and a Laser Scanner .....</b>	<b>78</b>
Alireza Ahrary, Masumi Ishikawa	
<b>A Reinforcement Learning with Adaptive State Space Construction for Mobile Robot Navigation .....</b>	<b>84</b>
Guizhi Li, Jie Pang	
<b>Maximizing the Utility of a Computer Service using Adaptive Optimal Control.....</b>	<b>89</b>
Magnus Karlsson	
<b>Non-Blocking Optimal Control and Scheduling of Multi-Entry and Multi-Outlet Serial Production Lines .....</b>	<b>95</b>
Zhimin Sun, Wende Chen, Hongnian Yu	
<b>Dynamic Survivable Resource Pooling in FPGA-based Distributed Robotics System.....</b>	<b>101</b>
Ahmed Abd El Al, Ibrahim Hokelek, Umit Uyar, Jianping Zou	
<b>Optimal Spraying Control of A Diffusion Process Using Mobile Actuator Networks With Fractional Potential Field Based Dynamic Obstacle Avoidance .....</b>	<b>107</b>
YangQuan Chen, Zhongmin Wang, Kevin L. Moore	
<b>Towards Constant-time Robot Localization in Large Dynamic Environments.....</b>	<b>113</b>
Kanji Tanaka, Eiji Kondo	
<b>Time Based TCP for High Speed Networks .....</b>	<b>119</b>
Yanping Xiang, Jianqiang Yi, Dongbin Zhao, John T. Wen,	

# Table of Contents

<b>Architecture of Next Generation Network with Information Sharing.....</b>	<b>125</b>
Gufang Tu, Can Zhang, Yi Zhang, Derong Liu,	
<b>Peer Discovery in Peer-to-Peer Anonymity Networks.....</b>	<b>131</b>
Tianbo Lu, Binxing Fang, Xueqi Cheng, Yuzhong Sun	
<b>Secure Network Component Architecture Model.....</b>	<b>137</b>
Zhou Yi, Li Ying, Li Yang, Wu Zhaohui	
<b>A Security Model for Online Accessing to Shared Devices .....</b>	<b>143</b>
Li-Guohui, Luo-Tiejian, Song-Jinliang, Xu-Yanxiang	
<b>Effects of Network Capacity under Variations of Network Structure and Routing Strategy .....</b>	<b>150</b>
Zhenyi Chen, Xiaofan Wang	
<b>Exponential Convergence Flow Control Model for Congestion Control.....</b>	<b>156</b>
Weirong Liu, Jianqiang Yi, Dongbin Zhao, John T. Wen	
<b>Control Theory Based Rating Recommendation for Reputation Systems .....</b>	<b>162</b>
Kui Meng, Yue Wang, Xu Zhang, Xiao-chun Xiao, Geng-du Zhang	
<b>Explicit Rate Controller Design Based On Smith Predictor in ATM Networks .....</b>	<b>168</b>
Liu Zhixin, Guan Xinping	
<b>Fault diagnose of rotating system based on ICA with reference and RBF networks .....</b>	<b>174</b>
Na Li, Mei-cheng Chen , Yan-jun Fang, Hong Li	
<b>Algebraic Criteria for the Convergence in Boundary Layer for Singularly Perturbed System.....</b>	<b>179</b>
Ningfan Zhong, Minhui Sun, Yun Zou	
<b>A Fast Compositive Training Algorithm of Forward Neural Network .....</b>	<b>183</b>
Baiqing Sun, Xiaohong Wang, Xuefeng Wang, Qishu Pan	
<b>Hybrid Independent Component Analysis and Support Vector Machine Approach for Audio Classification .....</b>	<b>189</b>
Xianzhong Zhou, Xin He, Yingchun Shi	
<b>EHM Based Neural Model for Hysteresis.....</b>	<b>194</b>
Lianwei Ma, Yonghong Tan	
<b>The Improved ontology kNN Algorithm and its Application .....</b>	<b>198</b>
Wenqian Shang, Haibin Zhu, Houkuan Huang, Youli Qu, Yongmin Lin	
<b>Path Planning for Mobile Robots Using Straight Lines .....</b>	<b>204</b>
An-Min Zou, Zeng-Guang Hou, Min Tan, Derong Liu	
<b>Vision-Guided Mobile Robot Navigation.....</b>	<b>209</b>
An-Min Zou, Zeng-Guang Hou, Min Tan, Derong Liu	
<b>A New Algorithm for Handling Actions in Flexible Graphplan .....</b>	<b>214</b>
Fei Ren, Wen-xiang Gu, Ming-hao Yin, Xin-mei Zhang	
<b>Task Decomposition and Modular Perceptrons with Sigmoid Activation Functions for Solving the Two-Spirals Problem.....</b>	<b>218</b>
Gao Daqi, Li Hao, Yang Yunfan	
<b>Incomplete Load Data Processing in Distribution System .....</b>	<b>224</b>
Tieyan Zhang, Li Liu, Huaguang Zhang, Yuan Zhang	
<b>On Deadlock Control Using Petri Nets and Siphons for Automated Manufacturing Systems.....</b>	<b>227</b>
Zhiwu Li, Xiong Ma	
<b>Research on Architecture of Manufacturing Grid for Application Service Provider Mode.....</b>	<b>233</b>
Wu Yangdong, Qi Guoning, Xie Qingsheng, Gu Xinjian	
<b>Agile Supply Chain Management System in Periodical Balancing Environments .....</b>	<b>238</b>
Zhi Liu, Yi Liu, Yueting Chai	

# Table of Contents

<b>On the Optimal Set of Elementary Siphons in Petri Nets for Deadlock Control in FMS.....</b>	<b>244</b>
Hesuan Hu, Zhiwu Li, Anrong Wang	
<b>Design and Analysis Urban Traffic Lights Using Timed Colour Petri Nets.....</b>	<b>248</b>
Yi-Sheng Huang, Ta-Hsiang Chung, Ting-Hui Lin	
<b>A Polynomial Algorithm to Decide the Liveness for a Class of Petri Nets.....</b>	<b>254</b>
Zhiwu Li, Ding Liu, Anrong Wang	
<b>A Bi-rating Based Personalized Trust Management Model for Virtual Communities .....</b>	<b>260</b>
Kui Meng, Xu Zhang, Xiao-chun Xiao, Geng-du Zhang	
<b>An Image Fusion-Based Multi-Watermarking Algorithm.....</b>	<b>266</b>
Wenliang Huang, Jin Gou	
<b>The Application of Wavelet Transform to Multi-modality Medical Image Fusion .....</b>	<b>270</b>
Anna Wang, Haijing Sun, Yueyang Guan	
<b>Offline Adaptive Forward Error Correction (AFEC) for Reliable Multicast.....</b>	<b>275</b>
Rajiv Malik, Alka Munjal, Dr. Shampa Chakraverty	
<b>Study of Automatic Knowledge Extraction in Specific Chinese Language Domain.....</b>	<b>281</b>
Suxiang Zhang, Lei Li, Yixin Zhong	
<b>Multi-Bases Coordinator Based on IADS and Its Application in Knowledge Management.....</b>	<b>286</b>
Zhang wei, Pang jie, Wei yaoguang	
<b>Optimization of the Operation of Infrastructures .....</b>	<b>290</b>
Zofia Lukszo, Dusica Joksimovic, Michiel Bliemer	
<b>Multi-Agent Model Predictive Control of Transportation Networks .....</b>	<b>296</b>
Rudy R. Negenborn, Bart De Schutter, Hans Hellendoorn	
<b>Deciding on Micro-CHP; A Multi-Level Decision-Making Approach.....</b>	<b>302</b>
Michiel Houwing, Petra W. Heijnen, Ivo Bouwmans	
<b>Intelligent Control in Networks: The Case of Road Traffic Management .....</b>	<b>308</b>
Jos. L. M. Vrancken, Otto C. Krüse	
<b>Dynamic Free Range Routing for Automated Guided Vehicles .....</b>	<b>312</b>
Mark B. Duinkerken, Marijn van der Zee, Gabriel Lodewijks	
<b>Evaluation and Optimization of Battery-Energy-Aware PPM Schemes for Wireless Sensor Networks.....</b>	<b>318</b>
Qiuling Tang, Liuqing Yang, Tuanfa Qin, Shuyi Zhang	
<b>Deterministic Energy Conserving Algorithms for Wireless Sensor Networks.....</b>	<b>324</b>
Rashid Bin Muhammad	
<b>OEDSR: Optimized Energy-Delay Sub-network Routing in Wireless Sensor Network.....</b>	<b>330</b>
Sibila Ratnaraj, Sarangapani Jagannathan, Vittal Rao	
<b>Advantages of Node Energy Control for Routes Selection in Wireless Sensor Networks .....</b>	<b>336</b>
Reinaldo Gomes, Eduardo Souto, Judith Kelner, Djamel Sadok	
<b>A Protocol Analysis Method of Acceleration Sensor In Maglev Train .....</b>	<b>342</b>
Zhigang Liu	
<b>Analysis and Design of <math>H_\infty</math> Feedback Control Systems with Two Quantized Signals.....</b>	<b>346</b>
Guisheng Zhai, Xinkai Chen, Joe Imae, Tomoaki Kobayashi	
<b>A New Suboptimal Filter and Numerical Solutions for the Cubic Sensor Problem .....</b>	<b>351</b>
Changlin Yan, Stephen S.-T. Yau,	
<b>Nonlinear Internal Model Control for Hysteresis Systems .....</b>	<b>357</b>
Yonghong Tan, Miyong Su	

# Table of Contents

<b>An Extension of Lie Algebraic Stability Analysis for Switched Systems with Continuous-Time and Discrete-Time Subsystems.....</b>	<b>362</b>
Guisheng Zhai, Xuping Xu, Hai Lin, Derong Liu	
<b>Construction of a Lyapunov Function for Nonlinear Cascaded Systems with Dynamic Uncertainties.....</b>	<b>368</b>
Zhiyong Chen, Jie Huang	
<b>Towards Piecewise-linear Primal Neural Networks for Optimization and Redundant Robotics .....</b>	<b>374</b>
Yunong Zhang	
<b>Comparing different Recurrent Neural Architectures on a specific task from Vanishing Gradient Effect perspective .....</b>	<b>380</b>
Stefano Squartini, Stefano Paolinello, Francesco Piazza	
<b>Windows NT User Profiling for Masquerader Detection.....</b>	<b>386</b>
Li Ling, Sui Song, C.N Manikopoulos	
<b>Dynamic Optimal Training of A Three Layer Neural Network wiith Sigmoid Function .....</b>	<b>392</b>
Chi-Hsu Wang, Yu-Yi Chi	
<b>Optimal Control-Based Neurocontroller for Crop Growth in Greenhouse .....</b>	<b>398</b>
Julián A. Pucheta, H. Daniel Patiño, Carlos Schugurensky, Rogelio Fullana, B. Kuchen	
<b>A Wireless Sensor System for Biopotential Recording in the Treatment of Sleep Apnea Disorder.....</b>	<b>404</b>
Lei Wang, Eric Noel, Cheung Fong, Ridha Kamoua, K. Wendy Tang	
<b>A New Electronic Nose for Downwind Livestock Farm Odour Measurement .....</b>	<b>410</b>
Leilei Pan, Simon X. Yang	
<b>Applications of a 3D Range Camera Towards Healthcare Mobility Aids .....</b>	<b>416</b>
R. Bostelman, P. Russo, J. Albus, T. Hong, R. Madhavan	
<b>Design for Ensuring Continuity of Quality Healthcare Delivery for Aging People .....</b>	<b>422</b>
Robin G. Qiu, Zhijun Zhang	
<b>Function Approximation Model Ensembles for the Simultaneous Determinations of Odor Classes and Concentrations .....</b>	<b>428</b>
Gao Daqi, Chen We	
<b>Coordinated Patterns on Smooth Curves .....</b>	<b>434</b>
Fumin Zhang, Naomi Ehrich Leonard,	
<b>Empirical Study on the Effects of Synthetic Social Structures on Teams of Autonomous Vehicles.....</b>	<b>440</b>
Adam Campbell, Annie S. Wu, Keith Garfield, Randall Shumaker, Sean Luke, Kenneth	
<b>Information-Based Cooperative Control for Multiple Unmanned Aerial Vehicles .....</b>	<b>446</b>
Daniel Pack, George York, Rafael Fierro	
<b>Cooperative Control Design Strategies with Local Interactions.....</b>	<b>451</b>
Wei Ren	
<b>High-Order Consensus Algorithms in Cooperative Vehicle Systems.....</b>	<b>457</b>
Wei Ren, Kevin Moore, YangQuan Chen,	
<b>Robust Multiuser Detection for Multi-Carrier CDMA .....</b>	<b>463</b>
Rensheng Wang, Hongbin Li,	
<b>Writing on Dirty Paper with Feedback.....</b>	<b>468</b>
Jialing Liu, Nicola Elia	
<b>Adaptive and Probabilistic Power Control Algorithms for Dense RFID Reader Network .....</b>	<b>474</b>
Kainan Cha, Anil Ramachandran, Sarangapani Jagannathan	
<b>An Adaptive Nonlinear Rake Receiver in UWB Wireless Communications.....</b>	<b>480</b>
Ning Xie, Yuanping Zhou	
<b>A New Nonlinear Beamformer for CDMA Wireless Communications .....</b>	<b>486</b>
Ning Xie, Yuanping Zhou	

# Table of Contents

<b>Development Scheme of SoPC-Based Reconfigurable Controllers .....</b>	<b>492</b>
Min-Hsiung Hung, Yung-Te Chen, Jui-Yu Cheng, Rui-Wen Ho, Gong Chen	
<b>Uniformly Distributed Seeds for Randomized Trace Estimator on <math>O(N^2)</math>-operation log-det Approximation in Gaussian Process Regression.....</b>	<b>498</b>
Yunong Zhang	
<b>Indirect Sensing for Misfire Detection with MSMA, TriC, and MulC .....</b>	<b>504</b>
Louis Yizhang Liu, Hanlong Yang, Steven Plee	
<b>Relative Assessments of Current Dependent Models for Magneto-Rheological Fluid Dampers.....</b>	<b>510</b>
Xiao Qing Ma, Subhash Rakheja, Chun-Yi Su	
<b>On Control Gain Selection in PI-RED .....</b>	<b>516</b>
Naixue Xiong, Xavier Defago, Yan Yang, Yanxiang He, Jing He	
<b>A Memory Fuzzy Learning for Uncertainty Management in Disassembly .....</b>	<b>522</b>
Ying Tang	
<b>Fuzzy Control Implementation of Cold Rolling Workpieces CNC Machine .....</b>	<b>528</b>
Yunfei Li, Xuemei Zhu	
<b>Delay-Dependent Guaranteed Cost Control for Uncertain Stochastic Fuzzy Systems with Time-Delay .....</b>	<b>532</b>
Yingchun Wang, Huaguang Zhang, Sanqing Hu, Derong Liu	
<b>The Construction of the Firm's Performance Evaluation Model on Outsourcing Activities -- Application of the Fuzzy Synthesis Judge.....</b>	<b>538</b>
Chaang-Yung Kung	
<b>Longitudinal and Lateral Fuzzy Control Systems Design for Intelligent Vehicles .....</b>	<b>544</b>
Hsin-Han Chiang, Li-Shan Ma, Jau-Woei Perng, Bing-Fei Wu, Tsu-Tian Lee	
<b>Decentralization of Coordination Variables in Multi-vehicle Systems .....</b>	<b>550</b>
Wei Ren	
<b>A Velocity-Separation Difference Model for Car-Following Theory and Simulation Tests .....</b>	<b>556</b>
Zhipeng Li, Xiaobo Gong, Yuncai Liu	
<b>Exponentially Stabilizing Output Tracking of Fully Autonomous Passenger Cars With an Observer .....</b>	<b>562</b>
Sisil Kumarawadu, Jau-Woei Perng, Tsu-Tian Lee	
<b>An Methodology of Automatic Guidance System .....</b>	<b>568</b>
Gang Liu, Yanfeng Liu	
<b>Impact of Limited Communications on a Cooperative Search Algorithm for Multiple UAVs .....</b>	<b>573</b>
Kevin M. Morris, Barry E. Mullins, Daniel J. Pack, George W. P. York, Rusty O. Baldwin	
<b>LTL Planning for Groups of Robots.....</b>	<b>579</b>
Marius Kloetzer, Calin Belta	
<b>Establishment and Maintenance of a Delay Tolerant Network through Decentralized Mobility Control.....</b>	<b>585</b>
Eric W. Frew, Timothy X. Brown, Cory Dixon, Daniel Henkel	
<b>Evolution of Sensor Suites for Complex Environments .....</b>	<b>591</b>
Annie S. Wu, Ayse S. Yilmaz, John C. Sciortino, Jr.	
<b>Cooperative Localization and Mapping.....</b>	<b>597</b>
Jason Stipes, Robert Hawthorne, David Scheidt, David Pacifico	
<b>TDOA Geolocation with the Unscented Kalman Filter.....</b>	<b>603</b>
Craig O. Savage, Robert L. Cramer, Harry A. Schmitt	
<b>Wireless Networks in the Process Industry: Opportunities for Ultra Wideband Applications.....</b>	<b>608</b>
Elisabeth van de Kar, Zofia Lukszo, Geert Leus	
<b>A Smooth Control to Avoid Congestion for Wireless Network .....</b>	<b>614</b>
Weirong Liu, Jianqiang Yi, Dongbin Zhao, John T. Wen,	

# Table of Contents

<b>Maximum Lifetime Rate Control and Scheduling in Multi-hop Wireless Networks.....</b>	<b>620</b>
Bo Yang, Chengnian Long, Xinping Guan, Gang Feng	
<b>Delay Prediction for Intelligent Routing in Wireless Networks Using Neural Networks.....</b>	<b>626</b>
Zhihao Guo, Behnam Malakooti	
<b>A Scalable Key Agreement Scheme For Large Scale Networks .....</b>	<b>632</b>
Yun Zhou, Yuguang Fang	
<b>State Feedback Control of Networked Systems—an LMI Approach .....</b>	<b>638</b>
Jian Sun, G. P. Liu,	
<b>Predictive Control of Networked Systems with Random Delay and Data Dropout .....</b>	<b>644</b>
Yuanqing Xia, G. P. Liu, D. Rees	
<b>Stability of Multi-Rate Internet-Based Control Systems with Time-Delay at Feedback and Feed-forward Channels .....</b>	<b>650</b>
Zhi-Hong Guan, Shuang-Hua Yang	
<b>A Novel Control Method for a Class of Cascade Nonlinear Systems .....</b>	<b>655</b>
Liqiang Wu, Jingqing Han, Zengguang Hou	
<b>Two Layer Optimization Compatible Control for Multi-Objective Control Systems .....</b>	<b>659</b>
LiHong Xu, ZhiQiang Zou, QingSong Hu	
<b>A Particle Swarm Optimization Approach for Procedure Parameters Optimization of Semiconductor Assembly Product Line .....</b>	<b>665</b>
Lei Wang, Qi Kang, Qidi Wu,	
<b>A New Reinforcement Learning for Group-Based Marshaling Plan Considering Desired Layout of Containers in Port Terminals .....</b>	<b>671</b>
Yoichi Hirashima, Naoko Ishikawa, Kazuhiro Takeda	
<b>Support Vector Machines with PSO Algorithm for Short-Term Load Forecasting.....</b>	<b>677</b>
Changyin Sun, Dengcai Gong	
<b>Research on the Application of the Case Library Based on Grid Using Particle Swarm Optimization .....</b>	<b>682</b>
Hong Zhu, Demin Wang, Wengang Zhou, Xin Liu, Ping Hu	
<b>Feature Subset Selection for Face Detection Using Genetic Algorithms and Particle Swarm Optimization .....</b>	<b>687</b>
Mahdi Aliyari Shoorehdeli, Mohammad Teshnehlab, H. Abrishami Moghaddam	
<b>Modeling, Analysis and Design of Complex Quality Testing Systems using a Hierarchical Simulation framework .....</b>	<b>692</b>
Abhishek K. Shrivastava, Yu Ding, Jon Coody, Feng Niu, Darek Ceglarek	
<b>A Documented Configuration Change Control Workflow to Conceptual Design for Supply Chain .....</b>	<b>698</b>
Jiun-Yan Shiau, Xiangyang Li, Ju-Ching Tseng	
<b>Workflow Management Tool Support for Incident Command Systems .....</b>	<b>704</b>
Michael Stoute, Jiacun Wang, Daniela Rosca, William Tepfenhart, Allen Milewski	
<b>Liveness-Enforcing Supervisors for Flexible Manufacturing Systems with Multiple Resource Acquisitions.....</b>	<b>711</b>
Zhiwu Li, Anrong Wang, Na Wei	
<b>Spinning Reserve from Responsive Load via Intelligent Energy Management Network .....</b>	<b>716</b>
Qingqi Zhao, Ming Li, Huaguang Zhang	
<b>A Novel Approach to Trojan Horse Detection by Process Tracing A.....</b>	<b>722</b>
Naiqi Wu, Yanming Qian, Guiqing Chen	
<b>A Quantitative Survivability Evaluation Model for Wireless Sensor Networks .....</b>	<b>728</b>
Xueping Li, Dengfeng Yang	
<b>A Quality Assurance Framework for Network Attack Correlation.....</b>	<b>734</b>
Xiangyang Li, Charu Chandra	



# Table of Contents

<b>An Agent-based System for Context-Sensitive Information Integration .....</b>	<b>740</b>
Yan Xing, Yinwei Zhan	
<b>Towards a Generic Approach for Analyzing the Efficiency of Complex Networks .....</b>	<b>746</b>
Koen H. van Dam, Igor Nikolic, Zofia Lukszo, Gerard P. J. Dijkema	
<b>Interference-Constrained Maximum Flow in Wireless Sensor Networks with Directional Antennas.....</b>	<b>752</b>
Xiaoxia Huang, Jianfeng Wang, Yuguang Fang,	
<b>Urban Flash Flood Monitoring, Mapping, and Forecasting via a Tailored Sensor Network System .....</b>	<b>758</b>
Ni-Bin Chang, Da-Hai Guo	
<b>Extracting Critical Attributes in Wireless Sensor Networks Using Modified Regression Polynomial .....</b>	<b>763</b>
Torsha Banerjee, Dharma P. Agrawal, Donald French	
<b>RL-MAC: A QoS-Aware Reinforcement Learning based MAC Protocol for Wireless Sensor Networks .....</b>	<b>769</b>
Zhenzhen Liu, Itamar Elhanany	
<b>A Self-Organizing Heuristic for Building Optimal Heterogeneous Ad-Hoc Sensor Networks.....</b>	<b>775</b>
Prasanna Ranganathan, Aravind Ranganathan, Ali Minai, Kenneth Berman	
<b>SF-SCTP: An Extension of Stream Control Transmission Protocol to Support QoS .....</b>	<b>781</b>
Jianping Zou, M. Umit Uyar, Mariusz A. Fecko, Sunil Samtani	
<b>Flow-based Statistical Aggregation Schemes for Network Anomaly Detection .....</b>	<b>787</b>
Sui Song, Li Ling, C. N. Manikpoulos	
<b>Deterministic Synchronization Algorithms and Convergence Rates .....</b>	<b>793</b>
Mehmet Akar, Robert Shorten	
<b>CRIT: A Hierarchical Chained-Ripple Time Synchronization in Wireless Sensor Networks.....</b>	<b>798</b>
Kee-Young Shin, Kang Yong Lee, Kwangyong Lee	
<b>MBIO: An New Active Queue Management Algorithm for DiffServ Network .....</b>	<b>804</b>
Ming Jiang, Jian Wu, Chunming Wu	
<b>Probabilistic Map Building by Coordinated Mobile Sensors.....</b>	<b>808</b>
Jen-Yeu Chen, Jianghai Hu,	
<b>Differential Modulation Schemes for Cooperative Diversity .....</b>	<b>814</b>
Woong Cho, Liuqing Yang	
<b>Implementing Agent Evolution with Roles in Collaborative Systems.....</b>	<b>820</b>
Linyuan Liu, Haibin Zhu	
<b>Modeling of Agent Migration for Collaborative and Distributed Processing .....</b>	<b>826</b>
Yingyue Xu, Hairong Qi,	
<b>General Methodology for Action-Oriented Industrial Ecology Complex Systems Approach Applied to the Rotterdam Industrial Cluster .....</b>	<b>832</b>
Igor Nikolic, Gerard P.J. Dijkema, Koen H. van Dam, Zofia Lukszo	
<b>A 3-D Real-Time Road Edge Detection System for Automated Smart Car Control.....</b>	<b>838</b>
Jing Li, Richard Liu, Xuemin Chen, Huichun Xing, Ying Wang, Chienping Kao, Yi Xiao	
<b>FDTD Simulation of Substrate Environments .....</b>	<b>843</b>
Y. Tang, L. Guo, J. Li, X. Chen, R. Liu	
<b>Two-Dimensional Resistivity Imaging Survey for Detecting Termitaria in a Dam .....</b>	<b>847</b>
Haobin Dong, Chuanlei Wang, Huaping Wang, Xinhui Cai, C. Richard Liu	
<b>A Texture-based Morphologic Enhancement Filter in Two-dimensional Thoracic CT scans.....</b>	<b>851</b>
Yang Yu, Hong Zhao	
<b>The 3-Dimensional Wireless Sensor Network Coverage Problem.....</b>	<b>857</b>
Mohamed K. Watfa, Sesh Commuri	

# Table of Contents

<b>Recursive Online EM Algorithm for Adaptive Sensor Deployment and Boundary Estimation in Sensor Networks.....</b>	<b>863</b>
Zhen Guo, MengChu Zhou, Fellow, Guofei Jiang	
<b>Detecting Coverage Boundary Nodes in Wireless Sensor Networks .....</b>	<b>869</b>
Chi Zhang, Yanchao Zhang, Yuguang Fang	
<b>An Application-Oriented Virtual Microsensor Integration Platform .....</b>	<b>875</b>
Hongtao Du, Hairong Qi, Donald W. Bouldin	
<b>Multi-Objective Routing in Wireless Sensor Networks with a Differential Evolution Algorithm .....</b>	<b>881</b>
Feng Xue, Arthur Sanderson, Robert Graves	
<b>Topology Maintenance of Wireless Sensor Networks in Node Failure-prone Environments.....</b>	<b>887</b>
Lisa Frye, Liang Cheng, Shenfu Du, Michael W. Bigrigg	
<b>Improvement on Security of a Practical Solution to Remote Authentication .....</b>	<b>893</b>
Guoping Liu, Yingjie Wang, Chunlai Li	
<b>Design of Accurate and Efficient Network Emulation Systems with Application to Inter-planetary Networks.....</b>	<b>896</b>
Zhihao Guo, Behnam Malakooti, Kul Bhasin, Allen Holtz	
<b>Protocol Stacks for Manned Exploration Missions.....</b>	<b>902</b>
Jay Gao, Clayton Okino, William Walsh, Loren Clare	
<b>A Novel Communication Protocol and Delay Model for Networking Satellites.....</b>	<b>908</b>
Stevan Jovanovic, Ardian Greca	
<b>The Research of a Security Prototype for the Network Blocking Controlling .....</b>	<b>914</b>
Wenchuan Yang, Junjian Yao, Lei Xiong, Ruoyao Liu	
<b>A Multi-modality Framework for Energy Efficient Tracking in Large Scale Wireless Sensor Networks .....</b>	<b>917</b>
Lizhi Yang, Chuan Feng, Jerzy. W. Rozenblit, Jianfeng Peng	
<b>Mobile Model and Location Management for PCS Systems.....</b>	<b>923</b>
Demin Li, Jie Zhou, Jiacun Wang	
<b>Rigid Body Based Location Technology for Ad Hoc Sensor Networks.....</b>	<b>927</b>
Feng Niu, Spyros Kyperountas, Qicai Shi, Jian Huang	
<b>A Dynamic Sensor Selection and Allocation Approach for Markov Localization .....</b>	<b>933</b>
Weihong Zhang, Huimin Chen	
<b>Service Fault Localization Using Probing Technology .....</b>	<b>938</b>
Zhixiong Chen	
<b>Neural Network Modeling of Vehicle Gross Emitter Prediction Based on Remote Sensing Data .....</b>	<b>944</b>
Huafang Guo, Jun Zeng, Yueming Hu	
<b>Stochastic Routing In Large Scale Sensor Networks.....</b>	<b>948</b>
Wei. Zhang, Ping Jiang, Qijun Chen	
<b>Efficient Long Signature Matching for Gigabit Intrusion Detection Sensors .....</b>	<b>954</b>
Kenong Zhang, Ming Gao, Jiahua Lu, Xiaohong Guan	
<b>Relative Position Measurements in Vision-based Multi-Person Tracking .....</b>	<b>958</b>
Kanji Tanaka, Eiji Kondo	
<b>Probabilistic Forwarding (ProFor) for large scale sensor networks .....</b>	<b>964</b>
Xi Chen, Yu-Chi Ho, Jiansong Zhang, Hongxing Bai	
<b>3D Map Building Based on Stereo Vision.....</b>	<b>970</b>
Huahua Chen, Zezhong Xu	
<b>Object Tracking and QOS Control Using Infrared Sensor and Video Cameras.....</b>	<b>975</b>
Can Zhang, Jiankang Wu, Guofang Tu	

# Table of Contents

<b>Multiple Models Intelligent Control for a Class of Nonlinear Systems.....</b>	<b>981</b>
J.Y. Zhai, S.M. Fei, C.Y. Sun	
<b>Velocity Control of an Electro Hydraulic Servosystem.....</b>	<b>986</b>
M. Aliyari shoorehdeli, H. Aliyari shoorehdeli, M. Teshnehlab, J. Yazdanpanah	
<b>Compensation Control of DC Motors by Loss- Free Resistors.....</b>	<b>990</b>
Jianhua Wu, Xinhe Xu, Hongyi Yin	
<b>An Algorithm for UCA Sources Parameter Estimate Based on Multistage Wiener Filters.....</b>	<b>994</b>
Yu Shi, Shuxun Wang, Zhiqiang Huang	
<b>A Method for 4-D Parameter Estimation of Near-field Sources.....</b>	<b>998</b>
Zhiqiang Huang, Shuxun Wang, Bo Wang	
<b>BF-RED: A Novel Algorithm for Improving Bandwidth Fairness of RED.....</b>	<b>1002</b>
Yang Jie, Liu Jun, Lei Zhenming	
<b>Low Frequency Oscillation Analysis and Damping Based on Prony Method and Sparse Eigenvalue Technique .....</b>	<b>1007</b>
Hua Ye, Yutian Liu, Xinsheng Niu	
<b>A UWB Signal Design Method in Indoor Environment with Presence of Narrow-band Interference .....</b>	<b>1012</b>
Ning Xie, Yuanping Zhou	
<b>Self-Organization of Evolutionary Minority Game on Scale-Free Networks.....</b>	<b>1018</b>
Lihui Shang, Xiao Fan Wang	
<b>Maximum Weighted Entropy Clustering Algorithm.....</b>	<b>1023</b>
Li Lao, Xiaoming Wu, Lingpeng Cheng, Xuefeng Zhu	
<b>Research on Scheduling in Multi-Softman System with the Learning Mode Based on Genetic Algorithms .....</b>	<b>1027</b>
Pang Jie, Ning Shurong, Li Guizhi, Wei Yaoguang, Tu Xuyan	
<b>Agent-enabled P2P Service Model With Cooperation Strategies.....</b>	<b>1031</b>
Ying Yang, Qin Zhu	
<b>Architecture Design and Developing Techniques for Rescue Agent .....</b>	<b>1037</b>
TieLi Sun, YongMing Yang, JingJing Zhao, YanTao Tian	
<b>Improving Learning Stability for Reinforcement Learning Agent .....</b>	<b>1042</b>
Du Xiaoqin, Li Qinghua	
<b>Using associative neural network to interpret syndromes of Traditional Chinese Medicine.....</b>	<b>1048</b>
Guacheng Xi, Jianxin Chen, Jianqiang Yi, Dongbin Zhao, Yongyan Wang	
<b>Fuzzy Neural Networks Adaptive Control of Micro Gas Turbine with Prediction Model .....</b>	<b>1054</b>
Wei Deng, Huaguang Zhang	
<b>Improved ANN AISI and Its Application in Erythromycin Fermentation Process.....</b>	<b>1060</b>
Wancheng Wang, Xianzhong Dai, Yuhang Ding	
<b>Contrast Enhancement for Fruit Image by Gray Transform and Wavelet Neural Network.....</b>	<b>1065</b>
Changjiang Zhang, Xiaodong Wang, Haoran Zhang	
<b>Neural Network Inverse Synchronous Control of Two-motor Variable Frequency Speed-Regulating System .....</b>	<b>1071</b>
Xianzhong Dai, Guohai Liu, Hao Zhang, Yue Shen	
<b>An Artificial Neural Network-based Expert System for Fruit Tree Disease and Insect Pest Diagnosis .....</b>	<b>1077</b>
Gang Liu, Xuehong Yang, Yinbing Ge, Yuxin Miao	
<b>Research and Application of a New Artificial Immune Algorithm Which Based on SOM Neural Network.....</b>	<b>1081</b>
Gao Yan, Wei Yaoguang, Fu Dongmei, Zhang Wei, Ning shurong	
<b>Fuzzy entropy-based scheduling strategies for resource-limited distributed reactive systems.....</b>	<b>1085</b>
L.C Axbrink, I.P.W Sillitoe	

# Table of Contents

<b>Aspects on Power System Islanding for Preventing Widespread Blackout.....</b>	<b>1091</b>
Yuanqi Liu, Yutian Liu	
<b>On Adhesion Force of MEMS Micro-cantilever with Rough Surface .....</b>	<b>1097</b>
Wenchao Tian, Jianyuan Jia, Guangyan Chen	
<b>Fabrication of Integrated Chemical Field-Effect transistor Humidity .....</b>	<b>1103</b>
Huiling Tai, Yadong Jiang, Guangzhong Xie	
<b>Research on DALI and Development of Master-Slave module .....</b>	<b>1107</b>
Yuejun Zhang, Ping Zhou, Mingguang Wu	
<b>Design and Experimental Analysis of a Low-Range Overload-Resistant Capacitance Accelerometer .....</b>	<b>1112</b>
LiFan Meng, JuJin Hua	