

2009 International Conference on Network-Based Information Systems

(NBIS 2009)

**Indianapolis, Indiana, USA
19 – 21 August 2009**



**IEEE Catalog Number: CFP0959H-PRT
ISBN: 978-1-4244-4746-6**

TABLE OF CONTENTS

NBiS SESSION 1A: NETWORK PROTOCOLS

Evaluation of Purpose Mark Releasing Protocol for Purpose-based Marking (PM) Protocol	1
<i>Tomoya Enokido, Makoto Takizawa</i>	
Timeliness and QoS Aware Packet Scheduling for Next Generation Networks	9
<i>Yao-Nan Lien, Yung-Chuan Wun</i>	
A Proactive Fault Resilient Overlay Multicast for Media Streaming	17
<i>Bhed Bahadur Bista</i>	
Enhancing Simulation Mode Operation of ospfd	24
<i>Weigao Xie, Balaji Polepalli, Mukul Goyal, Hossein Hosseini</i>	

NBiS SESSION 1B: PEER TO PEER NETWORKS

Consistency Based Approach for Agreement Achievement among Peers	29
<i>Ailixier Aikebaier, Tomoya Enokido, Makoto Takizawa</i>	
Experimental Results and Evaluation of SmartBox Stimulation Device in a P2P E-learning System	37
<i>Keita Matsuo, Leonard Barolli, Joan Arnedo-Moreno, Fatos Xhafa, Akio Koyama, Arjan Durrresi</i>	
Minimizing Power Consumption with Performance Efficiency Constraint in Web Server Clusters	45
<i>Yan Yang, Naixue Xiong, Ailixier Aikebaier, Tomoya Enokido, Makoto Takizawa</i>	
A Selective Update Propagation Based on Degree of Data Update in Peer-to-Peer Networks	52
<i>Toshiki Watanabe, Akimitsu Kanzaki, Takahiro Hara, Shojiro Nishio</i>	
A Semantic P2P Overlay Network for Web Service Discovery	60
<i>Mario Bisignano, Giuseppe Di Modica, Orazio Tomarchio</i>	

NBiS SESSION 1C: APPLICATIONS

Improvement of a Worker's Motion Trace System Using a Terrestrial Magnetism Sensor	67
<i>Nobuyoshi Sato, Toshihiro Takahashi, Akira Tajima, Shouichi Odashima, Jun Suzuki, Taiji Ishikawa, Yoshitoshi Murata</i>	
Pervasive Scene Map on Wireless Devices for City Navigation	75
<i>Jiang Yu Zheng, Bing Zheng, Hongyuan Cai</i>	
A Mobile Graphics System for Ubiquitous Environment	83
<i>Hiroaki Nishino, Tsuneo Kagawa, Kouichi Utsumiya</i>	

HETGP SESSION 1: HETEROGENEOUS ENVIRONMENTS AND TECHNOLOGIES FOR GRID P2P SYSTEMS

The Complexity of Context in Mobile Information Systems	91
<i>Philip Moore</i>	
Parameter Tuning of JXTA-Based P2P Platforms	97
<i>Fatos Xhafa, Zorion Arrizabalaga, Jordi Missé, Leonard Barolli</i>	
Towards Scalable Simulation of Large Scale Distributed Systems	103
<i>Ciprian Dobre, Florin Pop, Valentin Cristea</i>	
HAP - A Heterogeneous Ad hoc Protocol	109
<i>Arta Doci, Leonard Barolli, Fatos Xhafa</i>	

NBiS SESSION 2A: SENSOR NETWORKS

Design and Implementation of Energy-Efficient and Secure Framework for Wireless Sensor Networks	115
<i>Eui-Jik Kim, Jeongsik In, Taeshik Shon, Yongsuk Park, Bong Wan Jun</i>	
A Survey on Bandwidth Resource Allocation and Scheduling in Wireless Sensor Networks	121
<i>Mangesh Chitnis, Paolo Pagano, Giuseppe Lipari, Yao Liang</i>	
Energy Aware Adaptive Clustering for Wireless Sensor Networks	129
<i>Fuad Bajaber, Irfan Awan</i>	
An Agent Based Layered Framework to Facilitate Intelligent Wireless Sensor Networks	136
<i>Hanh Le, André Scholtz, Anet Potgieter</i>	

NBiS SESSION 2B: WIRELESS AND MOBILITY

Per-Connection Return Routability Test in Mobile IPv6	142
<i>Hengky Susanto, Byung-Guk Kim</i>	
A Survey of Internet Mobility	147
<i>Ping Zhang, Arjan Durrezi, Leonard Barolli</i>	
H-WSNMS: A Web-Based Heterogeneous Wireless Sensor Networks Management System Architecture	155
<i>Wei Zhao, Yao Liang, Qun Yu, Yan Sui</i>	
Event Coverage in Sparse Mobile Sensor Networks	163
<i>Mark Snyder, Sriram Chellappan</i>	

EUPS SESSION 1: CASE STUDIES, EXPERIMENTATIONS AND UBIQUITOUS AND PERVASIVE APPLICATIONS

A Mobile Personalized RFID System	171
<i>Ruay-Shiung Chang, Jih-Sheng Chang, Jiing-Hsing Ruey</i>	
An Implementation of Traffic Light System Using Multi-hop Ad hoc Networks	177
<i>Imran Shafique Ansari</i>	
A Context-Aware Framework to Enable Adaptation in Pervasive Computing Environments	182
<i>Apostolos Malatras, Béat Hirsbrunner</i>	
A Survey of Security Middleware for Pervasive and Ubiquitous Systems	188
<i>Jameela Al-Jaroodi, Alyaziyah Al-Dhaheri, Fatmah Al-Abdouli, Nader Mohamed</i>	

IBIS SESSION 1: TEXT MINING AND MACHINE LEARNING

A Referral Approach to Finding Medical Informatics Reviewers	194
<i>Weimao Ke, Javed Mostafa</i>	
Hypotheses Generation Pertaining to Ayurveda Using Automated Vocabulary Generation and Transitive Text Mining	200
<i>Harsha Gopal Goud Vaka, Snehasis Mukhopadhyay</i>	
Non-exhaustive Learning for Bacteria Detection	206
<i>Ferit Akova, Daniel Hirleman, Arun K. Bhunia, Bartek Rajwa, M. Murat Dunder</i>	

NBiS SESSION 3A: NETWORK SECURITY

A Security Framework for JXTA-Overlay	212
<i>Joan Arnedo-Moreno, Keita Matsuo, Leonard Barolli, Fatos Xhafa</i>	
SRJE: Decentralized Authentication Scheme against Sybil Attacks	220
<i>Yo Mashimo, Masanori Yasutomi, Hiroshi Shigeno</i>	
Reasonable Security by Effective Risk Management Practices: From Theory to Practice	226
<i>Solange Ghernouti-Hélie, David Simms, Igli Tashi</i>	

Multicasting Key Management in Wireless Networks	234
<i>Yiling Wang, Huy Hoang Ngo, Phu Dung Le, Balasubramaniam Srinivasan, Vishv Malhotra</i>	

NBiS SESSION 3B: NETWORK SECURITY

A Membership-Oriented Group Key Management for Application Services	240
<i>Huy Hoang Ngo, Yiling Wang, Phu Dung Le, Balasubramaniam Srinivasan, Vishv Malhotra</i>	
An Attack-Resilient Channel Assignment MAC Protocol	246
<i>Wanyu Zang, Qijun Gu, Meng Yu, Peng Liu</i>	
SSL Connection Failover in Web Clusters and its Evaluation	254
<i>Satoshi Shimazaki, Takamichi Saito</i>	
Security Analysis of Ultra-lightweight Cryptographic Protocol for Low-cost RFID Tags: Gossamer Protocol	260
<i>Zeeshan Bilal, Ashraf Masood, Firdous Kausar</i>	

EUPS SESSION 2: WIRELESS NETWORKS AND MOBILE COMPUTING AND DISTRIBUTED SYSTEMS

Embedded Soft Processor for Sensor Networks	268
<i>Ali Elkateeb, Aiyappa Mandepanda</i>	
Improving the Robustness of Wireless Device Pairing Using Hyphen-Delimited Numeric Comparison	273
<i>Ambarish Karole, Nitesh Saxena</i>	
An Indirect Proactive Handoff Scheme Using Location Information	279
<i>M. Mansour, Abdulaziz Almazayad</i>	
Exploring Efficient Imperative Handover Mechanisms for Heterogeneous Wireless Networks	286
<i>Glenford Mapp, Fatema Shaikh, Mahdi Aiash, Renata Porto Vanni, Mario Augusto, Edson Moreira</i>	

IBIS SESSION 2: DATABASES AND DATA MINING

Toward Ontology-Driven Omics Data Integration in Current Database Management Systems	292
<i>John A. Springer, Jake Y. Chen</i>	
Bridging Text Mining and Bayesian Networks	298
<i>Sandeep Raghuram, Yuni Xia, Mathew Palakal, Josette Jones, Dave Pecenka, Eric Tinsley, Jean Bandos, Jerry Geesaman</i>	
Visualizing a Correlative Multi-level Graph of Biology Entity Interactions	304
<i>Qian You, Shiao-fen Fang, Snehasis Mukhopadhyay, Harsha Gopal Goud Vaka, Jake Chen</i>	

NBiS SESSION 4A: NETWORK SECURITY

Privacy Preserving Portable Health Record (P³HR)	310
<i>Pavan Roy Marupally, Vamsi Paruchuri, Sriram Chellappan</i>	
Secure Routing and Broadcast Authentication in Heterogeneous Sensor Networks	316
<i>Aasma Abid, Mukhtar Hussain, Firdous Kausar</i>	
Orthogonal Expansion of Port-scanning Packets	321
<i>Hiroaki Kikuchi, Tomohiro Kobori, Masato Terada</i>	

NBiS SESSION 4B: AD HOC WIRELESS NETWORKS

Performance Evaluation of a MANET Tested for Different Topologies	327
<i>Makoto Ikeda, Leonard Barolli, Masahiro Hiyama, Tao Yang, Giuseppe De Marco, Arjan Durrresi</i>	
Performance Analysis of OLSR Protocol for Wireless Sensor Networks and Comparison Evaluation with AODV Protocol	335
<i>Tao Yang, Leonard Barolli, Makoto Ikeda, Fatos Xhafa, Arjan Durrresi</i>	
Disjointed Conflict Free Address Auto-Configuration for Mobile Ad Hoc Networks	343
<i>Sudath Indrasinghe, Rubem Pereira, John Haggerty</i>	

Investigation and Implementation of Border Nodes in S-MAC	350
<i>Elhadi M. Shakshuki, Tarek R. Sheltami, Haroon Malik, Chuoxian Yang</i>	

ITIS SESSION 1: INNOVATIVE APPLICATION

A Textbook Editor Based on a Customware Service	358
<i>Tokuro Matsuo, Dzulfarnain Nasir, Takayuki Fujimoto</i>	
A Proposal and Trial on a Model of a Motion Monitor System for a Ski Jumper Using Terrestrial Magnetism and Acceleration Sensors	364
<i>Masaki Oikawa, Nobuyoshi Sato, Yoshitoshi Murata</i>	
Development of Web Counseling System	370
<i>Yasunori Shiono, Takaaki Goto, Tetsuro Nishino, Chieko Kato, Kensei Tsuchida</i>	

EMN SESSION 1: EMERGING MOBILE NETWORKS

Angular Mobility Assisted Coverage in Directional Sensor Networks	376
<i>Cyriac Kandoth, Sriram Chellappan</i>	
Applying the Service-Oriented Architecture for Network Discovery and Selection in the Next Generation Wireless Mobile Networks	380
<i>Qiang Duan</i>	
LITS: Lightweight Intelligent Traffic Simulator	386
<i>Thomas Winters, Matthew Johnson, Vamsi Paruchuri</i>	

NBiS SESSION 5A: WEB SERVICES

Web-Disk-Based Efficient Application Delivery Method for Grids	391
<i>Kenichi Tanaka, Minoru Uehara, Makoto Murakami, Motoi Yamagiwa</i>	
Analysis of Web Alert Models	398
<i>Jameela Al-Jaroodi, Nader Mohamed</i>	
A Middleware Architecture for Web Information Reuse	404
<i>Nader Mohamed, Jameela Al-Jaroodi</i>	
Genetic Algorithm for QoS-Aware Web Service Selection Based on Chaotic Sequences	410
<i>Chengwen Zhang, Yue Ma</i>	

NBiS SESSION 5B: ENABLING TECHNOLOGIES 1

Multiple Micro Virtual Disks for Constructing Large-scale Storage	417
<i>Minoru Uehara</i>	
Energy-Efficient Computation Models for Distributed Systems	424
<i>Ailixier Aikebaier, Yan Yang, Tomoya Enokido, Makoto Takizawa</i>	
A Log Management System for Internal Control	432
<i>Akihiro Tomono, Minoru Uehara, Makoto Murakami, Motoi Yamagiwa</i>	
Evaluation of Stateful Reliability Counter in Small-World Cellular Neural Networks	440
<i>Katsuyoshi Matsumoto, Minoru Uehara, Hideki Mori</i>	

ITIS SESSION 2: INNOVATIVE PLATFORM

Run-time Updating of Network Device Drivers	446
<i>Hiroyuki Tanaka, Yoshinari Nomura, Hideo Taniguchi</i>	
Combining N-ary RAID to RAID MP	451
<i>Minoru Uehara</i>	
Applied System of the Social Life Log for Ecological Lifestyle in the Home	457
<i>Motoi Yamagiwa, Minoru Uehara, Makoto Murakami</i>	
A Conceptual Framework for Modelling Service Value Creation Networks	463
<i>Thang Le Dinh, Michel LÃ©onard</i>	

SESSION PPW 1: PROVENANCE IN e-RESEARCH

The Concept of Web Service Versioning in Provenance	469
<i>Dayang Hanani Abang Ibrahim</i>	
Astro-WISE: Tracing and Using Lineage for Scientific Data Processing	475
<i>Johnson Mwebaze, Danny Boxhoorn, Edwin Valentijn</i>	
A Multi-Tier Provenance Model for Global Climate Research	481
<i>Eric Stephan, Todd Halter, Tara Gibson, Nathaniel Beagley, Karen Schuchardt</i>	
Supporting Data Regeneration in Integrated Rule Based Storage System	487
<i>Maria Indrawan, Minh Vuong</i>	

NBiS SESSION 6A: ENABLING TECHNOLOGIES 2

Motion Generation System Using Interactive Evolutionary Computation and Signal Processing	492
<i>Yuki Wakayama, Shigeru Takano, Yoshihiro Okada, Hiroaki Nishino</i>	
Selection of Relevant Parameters Based on Conflict	499
<i>Mourad Benkaci, A. Doncescu, Nabil Kabbaj</i>	
Multiresolution Learning on Neural Network Classifiers: A Systematic Approach.....	505
<i>Qifeng Lu, Yao Liang</i>	
Balls Hierarchy: A Proximity Query for Metric Spaces and Covering Theorem	512
<i>Sinan Kockara</i>	

NBiS SESSION 6B: NETWORK BASED INTELLIGENCE

A Fuzzy Inference Model for Risk based Informed Decision-Making in e-Business	519
<i>Omar Hussain, Tharam Dillon, Elizabeth Chang, Farookh Hussain</i>	
Real-Time Public Group Collaboration using IP Multicast Label Filters	525
<i>Jaipal Singh, Prakash Veeraraghavan, Samar Singh, Vidyasagar Potdar</i>	
Self-stabilized Flocking of a Group of Mobile Robots under Memory Corruption	532
<i>Yan Yang, Xavier Défago, Makoto Takizawa</i>	
A Client-Server Architecture for Context-Aware Search Application.....	539
<i>Feng Gui, Magno Guillen, Naphtali Rishe, Armando Barreto, Jean Andrian, Malek Adjouadi</i>	

ITIS SESSION 3: INNOVATIVE NETWORK

A Configuration Method for Structured P2P Overlay Network Considering Delay Variations	547
<i>Tomoya Kitani, Yoshitaka Nakamura</i>	
Community Based P2P Video Streaming Service by Networked Consumer Electronics	553
<i>Yasuhiro Kawano, Koji Hashimoto, Yoshitaka Shibata</i>	
A Method for Synchronous Transmissions with Exposing Terminal on the Basis of Overheating RTS Header Information.....	559
<i>Tetsuya Shigeyasu, Hiyuu Shimizu, Hiroshi Matsuno, Norihiko Morinaga</i>	

NBiS SESSION 7A: WIRELESS NETWORKS

A Comparison Study of Two Fuzzy-Based Handover Systems for Avoiding Ping-Pong Effect in Wireless Cellular Networks	564
<i>Gjergji Mino, Leonard Barolli, Arjan Durresi, Fatos Xhafa, Akio Koyama</i>	
Locals Search Algorithms for Efficient Router Nodes Placement in Wireless Mesh Networks	572
<i>Fatos Xhafa, Christian Sánchez, Leonard Barolli</i>	
A New Method for Improving MAC Level Broadcast Receive Ratio Using 2-Phase RTS/CTS Handshakes Sequence	580
<i>Tetsuya Shigeyasu, Hiroshi Matsuno, Norihiko Morinaga</i>	
Challenges in the Development of Mobile Applications in Industrial Field Service	586
<i>Markus Aleksy, Bernd Stieger</i>	

NBiS SESSION 7B: DESIGN UNDER ENERGY CONSTRAINTS

Power Saving Cognitive Radio LANs for Disaster Information	592
<i>Goshi Sato, Noriki Uchida, Daisuke Asahizawa, Yoshitaka Shibata</i>	
Processing of Low Level Signals in Mixed Signal Environment - A Hardware Design for Better Performance	597
<i>Atif Sharif, Rana Fayyaz Ahmad, Malaya Nath, Vidyasagar M. Potdar, Jaipal Singh, Yan Yang</i>	
Reducing Total Energy Consumption with Collaboration between Network and End Systems	603
<i>Kenichi Hatakeyama, Yasunori Osana, Shin-ichi Kuribayashi</i>	

ITIS SESSION 4: INNOVATIVE INTERACTION

Tele-Immersion Environment for Video Avatar Based CVE	608
<i>Tomoyuki Ishida, Keisuke Yatsu, Yoshitaka Shibata</i>	
Study on Realistic Communication Technology with Tiled Displays Wall	612
<i>Yasuo Ebara, Yoshitaka Shibata</i>	
Decision Model for a System to Start Communicating with a Human Using HMM.....	618
<i>Makoto Murakami, Motoi Yamagiwa, Minoru Uehara, Satoshi Ushiyama, Katsuhiko Shirai</i>	
Author Index	