Proceedings

ISCC 2006

Table of Contents

Message from the General Chairs ................................................................. xviii
Message from the Technical Program Chairs ........................................... xix
Organizing Committees ............................................................................ xxi
Technical Program Committee ................................................................ xxii
Reviewers ................................................................................................. xxiii

Session 1: Wireless, Cellular, and Mobile Communications - I

Towards Integrated Wireless Systems: Inter-mode Monitoring Techniques ................................................................. 2
Russell Haines, Tim Lewis, and Gary Clemo

WISENEP: A Network Processor for Wireless Sensor Networks ......................................................... 8
André Mota, Leonardo B. Oliveira, Geórgia P. Safe, Felipe F. Rocha,
Ramon Riserio, Antonio A. F. Loureiro, Claudionor J. N. Coelho Jr,
Hao Chi Wong, and Eduardo Nakamura

Support of Real-Time Services over Integrated 802.16 Metropolitan
and Local Area Networks ........................................................................ 15
Pedro Neves, Susana Sargento, and Rui L. Aguiar

A Novel Synchronization Scheme for OFDM WLANs Using Cyclic-Shifted Preamble ......................... 23
Xiang Zhao and Myoung-Seob Lim

Session 2: Security - I

On the Characterization and Evaluation of Mobile Attack Strategies
in Wireless Ad Hoc Networks .................................................................. 29
Vasileios Karyotis, Symeon Papavassiliou, Mary Grammatikou,
and Basil Maglaris
A Wireless Distributed Intrusion Detection System and a New Attack Model
Marco Domenico Aime, Giorgio Calandriello, and Antonio Lioy

Security for the Mythical Air-Dropped Sensor Network
Chandana Gamage, Kemal Bicakci, Bruno Crispo, and Andrew S. Tanenbaum

A Multilayer Approach of Anomaly Detection for Email Systems
Ye Wang and Hussein Abdel-Wahab

Weider D. Yu and Ellora Nayak

Session 3: P2P - I
Communication Channel Management for Maintenance of Strong Overlay Connectivity
Roberto Baldoni, Sirio Scipioni, and Sara Tucci-Piergiovanni

Designing the Architecture of P2P-Based Network Management Systems
André Panisson, Diego Moreira da Rosa, Cristina Melchiors, Lisandro Zambenedetti Granville, Maria Janilce Bosquirol Almeida, and Liane Margarida Rockenbach Tarouco

GTapestry: A Locality-Aware Overlay Network for High Performance Computing
Hai Jin, Fei Luo, Qin Zhang, Xiaofei Liao, and Hao Zhang

An Optimized Peer-to-Peer Overlay Network for Service Discovery

A Semantic Overlay Network for P2P Schema-Based Data Integration
Carmela Comito, Simon Patarin, and Domenico Talia

Session 4: High Performance Networking and Protocols
Experience of Conformance Testing on IPv6 Protocols
Yan Liu, Xia Yin, and Jiaping Wu

Performance Analysis of Embedded Linux ATM for MPC8260 and Derivatives
Apostolos N. Meliones and Stergios D. Spanos

Simple Analytical Formulation of the TCP Send Rate in Optical Burst-Switched Networks
Carla Raffaelli and Paolo Zaffoni

Performance of Paced and Non-paced Transmission Control Algorithms in Small Buffered Networks
Onur Alparslan, Shin’ichi Arakawa, and Masayuki Murata

Fuzzy Logic Congestion Control in TCP/IP Tandem Networks
C. Chrysostomou and A. Pitsillides
Session 5: Wireless, Cellular, and Mobile Communications - II

Performance Evaluation and Modeling of IEEE 802.11a WLAN Based on SDL Simulation ................................................. 130
Pero Latkoski, Toni Janevski, and Borislav Popovski

Hierarchical Home Agent Architecture for Mobile IP Communications ............................................................. 136
Imed Romdhani, Jose Munoz, Hatem Bettahar, and Abdelmadjid Bouabdallah

Performance Evaluation, Improvement and Channel Adaptive Strategy for IEEE 802.11 Fragmentation Mechanism ................................................................. 142
Yong Xi, Ji-Bo Wei, Zhao-Wen Zhuang, and Byung-So Kim

A Selective Co-channel Interference Mitigation Method for Alamouti Code ............................................................. 149
Lei Zhang, Shaoqian Li, Hongming Zheng, and May Wu

Channel Estimation Schemes for SC-FDE/FS System ................................................................. 155
Jianfei Li and Yan Du

Session 6: Handoff and Mobility

Performance Evaluation of Mobile IPv6 Handover Extensions in an IEEE 802.11b Wireless Network Environment ................................................................. 161
Johnny Lai, Ahmet Sekercioglu, Norbert Jordan, and Andreas Pitsillides

Evaluating Filtering Strategies for Decentralized Handover Prediction in the Wireless Internet ............................................. 167
Paolo Bellavista, Antonio Corradi, and Carlo Giannelli

A Multi-class, Sub-adaptation Module for Forced Vertical Handoffs ................................................................. 175
Abd-Elhamid M. Taha, Hossam S. Hassanein, and Hussein T. Mouftah

Fast Handover over Micro-MPLS-Based Wireless Networks ................................................................. 181
Scott Fowler and Sherali Zeadally

An Efficient Handover Algorithm for MBMS Enabled 3G Mobile Cellular Networks ................................................................. 187
Christophoros Christophorou and Andreas Pitsillides

Session 7: Mobile Ad Hoc Networks

HQMM: A Hybrid QoS Model for Mobile Ad Hoc Networks ................................................................. 194
Yan He and Hussein Abdel-Wahab

Maintaining a Binary Tree Structure for Mobile Ad Hoc Computing ................................................................. 201
Salahuddin Mohammad Masum and Amin Ahsan Ali

ID-Binary Tree Stack Anticollision Algorithm for RFID ................................................................. 207
Bo Feng, Jin-Tao Li, Jun-Bo Guo, and Zhen-Hua Ding

A Novel QoS Framework for Medium-Sized MANETs Supporting Multipath Routing Protocols ................................................................. 213
Carlos T. Calafate, Pietro Manzoni, and Manuel P. Malumbres
Session 8: Bioinformatics

Decentralized Load Balancing for Highly Irregular Search Problems .................................................. 220
  Giuseppe Di Fatta and Michael R. Berthold

Mining Gene Sets for Measuring Similarities ......................................................................................... 227
  Christine Nardini, Daniele Masotti, Sungroh Yoon, Enrico Macii,
  Michael D. Kuo, Giovanni de Micheli, and Luca Benini

Fingerprint Matching Based on Minutiae Covering Zones ................................................................. 233
  H. Hentous, F. Benhammadi, M. Aissani, and K. Beghdad-Bey

Mining Drug Targets: The Challenges and a Proposed Framework ...................................................... 239
  Hisham El-Shishiny, Taysir H. A. Soliman, and Ibrahim Emam

Session 9: Sensor Networks - I

MP2P Network in Collecting Data from Sensor Networks ................................................................. 246
  Jani Kurhinen

Lease Based Addressing for Event-Driven Wireless Sensor Networks.............................................. 251
  R. Chellappa Doss, D. Chandra, L. Pan, W. Zhou, and M. Chowdhury

An Efficient QoS-Constrained Data Aggregation and Processing Approach
  in Distributed Wireless Sensor Networks ............................................................................................... 257
  Jin Zhu, Symeon Papavassiliou, Stella Kafetzoglou, and Jie Yang

Sensor-Based Power Management for Mobile Devices ........................................................................ 263
  Ram Chary, Raviprakash Nagaraj, Giuseppe Raffa, Tullio Salmon Cinotti,
  and Pradeep Sebastian

Medium Access Control with Adjustable Sleeps for Wireless Sensor Networks ................................ 270
  Christopher K. Nguyen and Anup Kumar

Session 10: Signal Processing, Coding, and Communication Theory

STC-MIMO Block Spread OFDM in Frequency Selective Rayleigh Fading Channels ...................... 277
  Le Chung Tran, Xiaoqiang Huang, Eryk Dutkiewicz, and Joe Chicharo

A New Spreading Codes for MC-CDMA and OFDM Systems ........................................................... 283
  Khairul Anwar, Masato Saito, Takao Hara, Minoru Okada, and Helichi Yamamoto

Mobile Location in GSM Networks Using Database Correlation with Bayesian Estimation ........ 289
  Mohamed Khalaf-Allah and Kyandoghere Kyamakya

An Information-Controlled Transmission Power Adjustment Scheme for Collaborative
  Target Tracking ................................................................................................................................. 294
  Tolga Onel, Cem Ersoy, and Hakan Delic
Session 11: Management of Telecommunications Services

An Analytical Tool to Assess Readiness of Existing Networks for Deploying IP Telephony ............................................. 301
K. Salah and M. Almashari

A Resilient Telco Grid Middleware .................................................................................................................. 306
C. Lac and S. Ramanathan

Wavelet Based RDNN for Software Reliability Estimation ................................................................. 312
Adam Smiarowski Jr, Hoda S. Abdel-Aty-Zohdy, Mostafa Hashem Sherif, and Hemal Shah

MYCAREVENT—Vehicular Communication Gateway for Car Maintenance and Remote Diagnosis ........................................ 318
Erik Weiss, Guido Gehlen, Sven Lukas, Carl-Herbert Rokitsansky, and Bernhard Walke

Session 12: E-Commerce and E-Government

Fair E-commerce Protocols without a Third Party .............................................................................. 324
Huaping Li, Weidong Kou, and Xiaozhen Du

A Web Service Based Micro-payment System ......................................................................................... 328
V. Auletta, C. Blundo, S. Cimato, and G. Raimato

Grid Platforms for E-democracy Applications ...................................................................................... 334
H. Senger, F.A.B. Silva, M. de J. Mendes, R. Rondini, and C.R.G. de Farias

On the Tradeoff between Performance and Security in OCSP-Based Certificate Revocation Systems for Wireless Environments ...................................................... 340
Diana Berbecaru

Session 13: Web Services

Using Web Services for Bridging End-User Applications and Wireless Sensor Networks ...................... 347
Truong Ta, Nuru Yakub Othman, Roch H. Glitho, and Ferhat Khendek

Integration of Embedded Devices through Web Services: Requirements, Challenges and Early Results ................................................................. 353
Guilherme Bertoni Machado, Frank Siqueira, Robinson Mittmann, and Carlos Augusto Vieira e Vieira

QoS-Aware Middleware for Web Services Composition—A Qualitative Approach ........................................ 359
Hassan Issa, Chadi Assi, and Mourad Debbabi

Optimal Web Services Selection Using Dynamic Programming .......................................................... 365
Yan Gao, Jun Na, Bin Zhang, Lei Yang, and Qiang Gong

Considering QoS Aspects in Web Service Composition ...................................................................... 371
Dirk Thißen and Pimjai Wesnarat
### Session 14: Security - II

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Autonomous Architecture for Inter-domain Traceback across the Borders of Network Operation</td>
<td>378</td>
</tr>
<tr>
<td>Hiroaki Hazeyama, Youki Kadobayashi, Daisuke Miyamoto, and Masafumi Oe</td>
<td></td>
</tr>
<tr>
<td>Using Attack Information to Reduce False Positives in Network IDS</td>
<td>386</td>
</tr>
<tr>
<td>Makoto Shimamura and Kenji Kono</td>
<td></td>
</tr>
<tr>
<td>Protocol Algebra</td>
<td>394</td>
</tr>
<tr>
<td>Anders Moen Hagalisletto</td>
<td></td>
</tr>
<tr>
<td>Scan Detection on Very Large Networks Using Logistic Regression Modeling</td>
<td>402</td>
</tr>
<tr>
<td>Carrie Gates, Joshua J. McNutt, Joseph B. Kadane, and Marc I. Kellner</td>
<td></td>
</tr>
</tbody>
</table>

### Session 15: P2P - II

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag Routing for Efficient Blind Search in Peer-to-Peer Networks</td>
<td>409</td>
</tr>
<tr>
<td>Vladimir Vishnevsky, Alexander Safonov, Mikhail Yakimov, Eunsoo Shim, and Alexander G. Gelman</td>
<td></td>
</tr>
<tr>
<td>A Distributed Load Balancing Algorithm for Structured P2P Systems</td>
<td>417</td>
</tr>
<tr>
<td>Zhenyu Li and Gaogang Xie</td>
<td></td>
</tr>
<tr>
<td>Adaptive Packet Video Streaming over P2P Networks Using Active Measurements</td>
<td>423</td>
</tr>
<tr>
<td>Mubashar Mushtaq and Toufik Ahmed</td>
<td></td>
</tr>
<tr>
<td>AntSearch: An Ant Search Algorithm in Unstructured Peer-to-Peer Networks</td>
<td>429</td>
</tr>
<tr>
<td>Chi-Jen Wu, Kai-Hsiang Yang, and Jan-Ming Ho</td>
<td></td>
</tr>
<tr>
<td>File Consistency Maintenance through Virtual Servers in P2P Systems</td>
<td>435</td>
</tr>
<tr>
<td>Zhijun Wang, Mohan Kumar, Sajal K. Das, and Huaping Shen</td>
<td></td>
</tr>
</tbody>
</table>

### Session 16: Pattern Recognition and Classification

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACT: A New Fuzzy Adaptive Clustering Technique</td>
<td>442</td>
</tr>
<tr>
<td>Faeezeh Ensan, Mohammad Hossien Yaghmaee, and Ebrahim Bagheri</td>
<td></td>
</tr>
<tr>
<td>An Adaptive Fuzzy kNN Text Classifier Based on Gini Index Weight</td>
<td>448</td>
</tr>
<tr>
<td>Wengqian Shang, Youli Qu, Haibin Zhu, Houkuan Huang, Yongmin Lin, and Hongbin Dong</td>
<td></td>
</tr>
<tr>
<td>A Wireless Body Area Sensor Network for Posture Detection</td>
<td>454</td>
</tr>
<tr>
<td>Elisabetta Farella, Augusto Pieracci, Luca Benini, and Andrea Acquaviva</td>
<td></td>
</tr>
<tr>
<td>Similarity Search in a Hybrid Overlay P2P Network</td>
<td>460</td>
</tr>
<tr>
<td>Mouna Kacimi and kokou Yéıntongnon</td>
<td></td>
</tr>
</tbody>
</table>
Session 17: Wireless, Cellular, and Mobile Communications - III

Comparison of Spectral Efficiency for OFDM and SC-FDE under IEEE 802.16 Scenario ........................................ 467
   Jianfei Li, Yan Du, and Yang Liu

Performance Improvement of DVB-H System with LDPC Code in MPE-FEC Frame ........................................... 472
   Hyung Taek Lim, Sang Hoon Lee, Jong Soo Lim, Ju Yeun Kim, and Eon Kyeong Joo

Iterative Channel Estimation and Turbo Equalization of STBC-OFDM System over Time-Varying ISI Channels .............. 477
   Mohamed A. S. Hassan, Bayan S. Sharif, and W. L. Woo

Signal Reduction and Local Route Optimization of SIP-Based Network Mobility ..................................................... 482
   Chung-Ming Huang and Chao-Hsien Lee

Session 18: Routing

Characterizing Address Use Structure and Stability of Origin Advertisement in Inter-domain Routing .......................... 489
   Sophie Y. Qiu, Patrick D. McDaniel, Fabian Monrose, and Aviel D. Rubin

Investigating Prefix Propagation through Active BGP Probing .................................................................................. 497
   Lorenzo Colitti, Giuseppe Di Battista, Maurizio Patrignani, Maurizio Pizzonia, and Massimo Rimondini

Routing Performance of Cooperative Diversity in Ad Hoc Networks ........................................................................ 505
   Michael A. Tope, John C. McEachen, and Albert C. Kinney

On Cooperative Inter-domain Path Computation .................................................................................................. 511
   Payam Torab, Bijan Jabbari, Qian Xu, Shuja Gong, Xi Yang, Tom Lehman, Chris Tracy, and Jerry Sobieski

Flow Based Routing for Irregular Traffic Using Reinforcement Learning Approach in Dynamic Networks ................ 519
   Abdelhamid Mellouk, Said Hoceini, and Samia Larynouna

Session 19: Modeling and Simulation

Simulator for Performance Analysis of VOQ Switches .......................................................... 526
   Dušan Banović and Igor Radusinović

Heuristics Resolution of a Constrained Hybrid Flow Shop Problem ................................................................. 532
   H. Hentous and F. Benhammedi

An Efficient Heuristic for Scheduling a Flowshop to Minimize the Makespan Criterion ........................................ 536
   M. Maiza, H. Hentous, and A. Labed

TCP New Vegas: Performance Evaluation and Validation ...................................................................................... 541
   Joel Sing and Ben Soh