

2011 Ninth Annual Communication Networks and Services Research Conference

(CNSR 2011)

**Ottawa, Opwctkq, Canada
2 – 5 May 2011**



**IEEE Catalog Number: CFP11558-PRT
ISBN: 978-1-4577/0040-8**

2011 Ninth Annual Communication Networks and Services Research Conference

CNSR 2011

Table of Contents

Message from the Conference General Chair.....	x
Message from the Conference Technical	
Program Co-chairs.....	xi
Organizing Committee.....	xii
Technical Program Committee.....	xiii
Reviewers.....	xvi

Session A.1: Cognitive Radio

Collaborative Spectrum Sensing in Cognitive Radio System - Performance Analysis of Weighted Gain Combining	1
<i>T. Feng, G. Wang, S. Culver, and M. Gidlund</i>	
Intelligent Power Management for QoS-Aware Multimedia in Cognitive Mesh Networks Using Reinforcement Learning	7
<i>Ayoub Alsarhan and Anjali Agarwal</i>	
Cluster Size Optimization in Cooperative Spectrum Sensing	13
<i>Ebrahim Karami and Amir H. Banihashemi</i>	

Session A.2: Applications 1

Measurement Study on PPLive Based on Channel Popularity	18
<i>Ruixuan Li, Guoqiang Gao, Weijun Xiao, and Zhiyong Xu</i>	
A Peer-to-Peer Model for XML Publish/Subscribe Services	26
<i>Yang Cao, Chung-Horng Lung, and Shikharesh Majumdar</i>	
ADDER: Probabilistic, Application Layer Service Discovery for MANETs and Hybrid Wired-Wireless Networks	33
<i>George Oikonomou, Iain Phillips, Lin Guan, and Alan Grigg</i>	

Session A.3: Modelling and Performance Issues

A Structural Analysis of Network Delay	41
<i>Atef Abdelkefi and Yuming Jiang</i>	
Using Traffic Shaping to Improve Performance for Raw Data Transfer and Video Streaming	49
<i>Andrei Hutanu and Sandeep Nimmagadda</i>	
VisVerND: Visual Verification of Network Traffic Dataset	56
<i>John Felix Charles Joseph and Ali A. Ghorbani</i>	
Characterization of the IntelRate Controller for High-Speed Networks	63
<i>Jungang Liu and Oliver W. W. Yang</i>	

Session A.4: Protocols

RRB-SIMD: RTP Rate-Based SIMD Protocol for Media Streaming Applications over the Internet	69
<i>G. A. Lusilao-Zodi, M. E. Dlodlo, G. De Jager, and K. L. Ferguson</i>	
The Good, the Bad, the IPv6	77
<i>Matthew Dunlop, Stephen Groat, Randy Marchany, and Joseph Tront</i>	
Tuning Open-iSCSI for Operation over WAN Links	85
<i>Y. Zhang and M. H. MacGregor</i>	
Enhanced QoS Support in Certified Wireless USB	93
<i>Issam Al-Dalati, Jose R. Gallardo, Dimitrios Makrakis, and Ashraf Matrawy</i>	

Session A.5: Security

A Robust Anomaly Detection Technique Using Combined Statistical Methods	101
<i>Joseph Ndong and Kavé Salamatian</i>	
Distributed Key Establishment in Disruption Tolerant Location Based Social Wireless Sensor and Actor Network	109
<i>Jingzhe Du, Evangelos Kranakis, and Amiya Nayak</i>	
On Threshold Selection for Principal Component Based Network Anomaly Detection	117
<i>Petar Djukic and Biswajit Nandy</i>	
An Adaptive Hybrid Architecture for Intrusion Detection Based on Fuzzy Clustering and RBF Neural Networks	123
<i>Ahmad Ghadiri and Nasser Ghadiri</i>	

Session A.6: Applications 2

Touch to Communicate Using NGN Open Interfaces	130
<i>Klemen Peternel, Matevž Pogačnik, Janez Bešter, Luka Zebec, Matevž Pustišek, and Andrej Kos</i>	
Sensor Web Adaptation to Dynamic Sensor Networks	137
<i>Gunita Saini and Bradford G. Nickerson</i>	
Context Aware Middleware Services for Disconnection Tolerant Mobile Applications	145
<i>Sangwhan Cha and Weichang Du</i>	
The Competitor Busting Strategy in Keyword Auctions: Who's Worst Hit?	153
<i>Maurizio Naldi, Antonio Pavignani, Antonio Grillo, Alessandro Lentini, and Giuseppe F. Italiano</i>	

Session B.1: Ad Hoc and Mesh Networks

The Performance of Greedy Geographic Forwarding in Unmanned Aeronautical Ad-Hoc Networks	161
<i>Rostam Shirani, Marc St-Hilaire, Thomas Kunz, Yifeng Zhou, Jun Li, and Louise Lamont</i>	
Mitigation of Flooding Disruption Attacks in Hierarchical OLSR Networks	167
<i>Gimer Cervera, Michel Barbeau, Joaquin Garcia-Alfaro, and Evangelos Kranakis</i>	
Gateway Placement in Backbone Wireless Mesh Networks Using Directional Antennas	175
<i>Ziping Hu and Pramode K. Verma</i>	

Session B.2: All Optical Networks

Adaptive Load Balancing for the Agile All-Photonic Network	181
<i>Imad Khazali, Anjali Agarwal, and Lukas Kencel</i>	
Performance Evaluation and Enhancements of 42.7 Gb/s DWDM Transmission System Using Different Modulation Formats	189
<i>Samy Ghoniemy, Karim F. George, and Leonard MacEachern</i>	
RWA and p -Cycles	195
<i>Hai Anh Hoang and Brigitte Jaumard</i>	

Session B.3: Cellular Networks

Towards QoS Assurance with Revenue Maximization of LTE Uplink Scheduling	202
<i>Rukhsana Ruby and Victor Leung</i>	
A Survey of Opportunities for Free Space Optics in Next Generation Cellular Networks	210
<i>Frédéric Demers, Halim Yanikomeroglu, and Marc St-Hilaire</i>	
User Satisfaction Based Resource Allocation in Future Heterogeneous Wireless Networks	217
<i>Umar Toseef, Manzoor Ahmed Khan, Carmelita Görg, and Andreas Timm-Giel</i>	

Session B.4: Network Coding

Random Network Coding Effects on CDMA/TDD Mesh Networks	224
<i>Juma Ben Saleh and Ahmed K. Elhakeem</i>	
Tradeoffs of Combining Network Coding and Duty Cycling in WSNs	231
<i>Van Ho and Ioanis Nikolaidis</i>	
Opportunistic Network Coding for Energy Conservation in Wireless Sensor Networks	239
<i>Philipp M. Glatz, Leander B. Hörmann, Christian Steger, and Reinhold Weiss</i>	

Session B.5: Resource Allocation

Dynamic Resource Allocation Based on Weighted Max-Min Fairness	247
<i>Yu Sheng and M. H. MacGregor</i>	
The Effect of Transmission Capacities on Interference-Free Scheduling in Wireless Networks	257
<i>Raheleh Niat, Thomas Kunz, and Amir H. Banihashemi</i>	
Relay Assignment in AMT-Based Multicast Content Distribution	263
<i>Suhel Patel, Kamil Sarac, R. Chandrasekaran, Korkmaz Turgay, and Neeraj Mittal</i>	

Session B.6: Wireless and Sensor Network Performance

Performance Comparison of Opportunistic Routing Schemes in Wireless Sensor Networks	271
<i>Petros Spachos, Liang Song, and Dimitrios Hatzinakos</i>	
Efficient Wireless Access to Video-on-Demand Services	278
<i>Zohar Naor</i>	
Credit-Based Flow Control for Multihop Wireless Networks and Stochastic Petri Nets Analysis	284
<i>Rainer Schoenen</i>	

Performance of a Frequency-Hopped Real-Time Remote Control System in a Multiple Access Scenario	291
<i>Frank Cervantes and Marc St-Hilaire</i>	
Author Index	299