

The Twelfth International Workshop on Quality of Service (IWQoS 2004)
Delta Centre-Ville
Montreal, Canada
June 7 – 9, 2004

Preliminary Technical Program

June 7, 2004, Monday
8:00 – 9:00: Breakfast and Registration
9:00 – 9:15: Welcome and introduction Program co-chairs: Baochun Li (Toronto) and Zhi-Li Zhang (Minnesota)
9:15 – 10:15: Keynote address “Showstoppers for Sensors,” Professor Andrew Campbell Department of Electrical Engineering, Columbia University
10:15 – 10:45: Coffee Break
10:45 – 12:15: Session 1: Ad Hoc Wireless, Mobile and Sensor Networks Session Chair: Professor Philip McKinley, Michigan State University “Enhancing Mobile QoS Based on Movement Contracts,” Frank A. Zdarsky, Jens B. Schmitt (University of Kaiserslautern, Germany) “Robust Communications for Sensor Networks in Hostile Environments,” Ossama Younis, Sonia Fahmy (Department of Computer Sciences, Purdue University), Paolo Santi (Istituto di Informatica e Telematica, Italy) “Distributed On-line Schedule Adaptation for Balanced Slot Allocation in Wireless Ad Hoc Networks,” Theodoros Salonidis (Department of Electrical and Computer Engineering, University of Maryland, College Park), Leandros Tassioulas (Institute of Systems Research, University of Maryland, College Park) “Mobility Assisted Optimal Routing in Non-Interfering Mobile Ad Hoc Networks,” Jihui Zhang (Department of Computer Science, Hong Kong University of Science and Technology), Yunnan Wu (Department of Electrical Engineering, Princeton University), Qian Zhang (Microsoft Research, Asia), Bo Li (Department of Computer Science, Hong Kong University of Science and Technology), Wenwu Zhu (Microsoft Research, Asia), Sun-Yuan Kung (Department of Electrical Engineering, Princeton University)
12:15 – 2:00: Lunch
2:00 – 3:30: Session 2: Web Servers and E-commerce Provisioning Session Chair: Dr. Nina Bhatti, HP Labs “Decay Function Model for Resource Configuration and Adaptive Allocation on Internet Servers,” Minhua Xu, Cheng-Zhong Xu (Wayne State University) “Yaksha: A Controller for Managing the Performance of 3-Tiered Websites,” Abhinav Kamra, Vishal Misra (Department of Computer Science, Columbia University), Erich Nahum (IBM T. J.

Watson Research Center)

“Provisioning Servers in the Application Tier for E--Commerce Systems,” Daniel Villela, Dan Rubenstein (Department of Electrical Engineering, Columbia University), Prashant Pradhan (IBM T. J. Watson Research Center)

“Triage: Performance Isolation and Differentiation for Storage Systems,” Magnus Karlsson, Christos Karamanolis, Xiaoyun Zhu (HP Labs)

3:00 – 4:00: Coffee Break

4:00 – 5:45: Session 3: Packet Scheduling and Queue Management

Session Chair: Professor Chen-Nee Chuah, University of California, Davis

“Coordinated Aggregate Scheduling for Improving End-to-End Delay Performance,” Wei Sun, Kang G. Shin (University of Michigan)

“Local Flow Separation,” Vincenzo Liberatore (Division of Computer Science, Case Western Reserve University)

“A Simple FIFO-based Scheme for Differentiated Loss Guarantees,” Yaqing Huang, Roch Guerin (Department of Electrical and Systems Engineering, University of Pennsylvania)

“Delay bound Guarantees with WFQ-based CBQ discipline,” Anne Millet, Zoubir Mammeri (Paul Sabatier University, France)

“Network Calculus meets Queueing Theory – A Simulation Based Approach to Bounded Queues,” Krishna Pandit (Technische Universität Darmstadt), Jens Schmitt (Technische Universität Kaiserslautern), Ralf Steinmetz (Technische Universität Darmstadt)

6:30 – 8:30: Workshop Dinner

The Tour de Ville

The only revolving rooftop restaurant in Montreal, atop Delta Centre-Ville

June 8, 2004, Tuesday

8:00 – 9:00: Breakfast and Registration

9:00 – 10:00: Keynote address

“Next Big Things in Internet Research,”

Professor Hui Zhang

Department of Computer Science, Carnegie Mellon University

10:00 – 10:30: Coffee Break

10:30 – 12:15: Session 4: Network QoS: Specification, Monitoring and Bandwidth Allocation

Session Chair: Professor Jörg Liebeherr, University of Virginia

“Service Performance Monitoring for GPRS/EDGE Network Based on Treatment Classes,” David Soldani, Nilmini Lokuge, Antti Kuurne (Nokia Networks)

“Service Quality Measurements for IPv6 Inter-networks,” Dimitrios Pezaros, David Hutchison

(Lancaster University), Francisco Garcia, Robert Gardner (Agilent Technologies), Joseph Sventek (University of Glasgow)

"A Mechanism for Equitable Bandwidth Allocation Under QoS and Budget Constraints," Sreenivas Gollapudi (SUNY, Buffalo), D. Sivakumar (IBM Almaden)

"Formal Model for QoS Specification and Handling in Networks," Zoubir Mammeri (Paul Sabatier University, France)

"Backward Connection Preemption in Multi-class QoS-aware Networks," Li Lei, Sampalli Srinivas (Faculty of Computer Science, Dalhousie University, Halifax, Canada)

12:15 – 2:00: Lunch

2:00 – 3:30: Session 5: Multimedia Streaming and Content Distribution

Session Chair: Professor Jens Schmitt, University of Kaiserslautern, Germany

"On Quality-of-Service and Energy Consumption Tradeoffs in FEC-Encoded Wireless Audio Streaming," Zhinan Zhou, Philip K. McKinley, S. Masoud Sadjadi (Department of Computer Science and Engineering, Michigan State University)

"Incentive Mechanism for Peer-to-Peer Media Streaming," Ahsan Habib, John Chuang (School of Information Management and Systems, University of California, Berkeley)

"Towards Content Distribution Networks with Latency Guarantees," Chengdu Huang, Tarek Abdelzaher (Department of Computer Science, University of Virginia)

"Policy-Driven Multi-File Distribution," Catherine Rosenberg, Pascal Pons (School of Electrical and Computer Engineering, Purdue University), Dongyan Xu (Department of Computer Sciences, Purdue University)

3:30 – 4:00: Coffee Break

4:00 – 5:45: Panel Discussion

Chair: Professor Srinivasan Keshav
School of Computer Science, University of Waterloo

New Frontiers in Quality of Service

The concept of QoS has moved beyond network scheduling and congestion control to other areas, such as mobile devices, where we have issues like mobility contracts and power-aware computing; sensor networks, where QoS is related to sensing quality and network lifetime; web servers, where QoS is achieved by job management in a cluster; and P2P networks, where QoS has to do with mean query path lengths. What is the thread that unites them? We believe it is the notion that the system has to provide some sort of performance guarantee to the user. This basic idea, when applied to diverse systems, has led to a resurgence of research in the general area of QoS.

The goal of this panel is to (a) identify areas where QoS research has hit a dead end (and why?) and (b) identify new areas where research into QoS is both needed and has some hope of success.

Panelists:

Professor Jörg Liebeherr, University of Virginia
Professor Kevin Jeffay, University of North Carolina at Chapel Hill

Dr. Raymond Liao, Siemens TTB, Berkeley, California
Dr. Nina Bhatti, HP Labs

June 9, 2004, Wednesday

8:00 – 9:00: Breakfast

9:00 – 10:40: Session 6: Network Topologies, Overlays and P2P

Session Chair: Professor Dongyan Xu, Purdue University

“Small-World Overlay P2P Networks,” Ken Y. K. Hui, John C. S. Lui (Department of Computer Science and Engineering, The Chinese University of Hong Kong), David K. Y. Yau (Department of Computer Sciences, Purdue University)

“Topology Design for Service Overlay Networks with Bandwidth Guarantees,” Sibelius L. Vieira (Department of Computer Science, Catholic University of Goias), Jorg Liebeherr (Department of Computer Science, University of Virginia)

“Max-Min Overlay Multicast: Rate Allocation and Tree Construction,” Yi Cui, Yuan Xue, Klara Nahrstedt (Department of Computer Science, University of Illinois at Urbana-Champaign)

“Service Availability: A New Approach to Characterize IP Backbone Topologies,” Ram Keralapura, Chen-Nee Chuah (University of California, Davis), Gianluca Iannaccone (Intel Labs, Cambridge), Supratik Bhattacharyya (Sprint ATL)

10:40 – 11:10: Coffee Break

11:10 – 12:50: Session 7: QoS, TCP and Applications

Session Chair: Professor John C.S. Lui, The Chinese University of Hong Kong

“Paving the First Mile for QoS-dependent Applications and Appliances,” Mohamed El Gendy, Abhijit Bose (Department of Electrical Engineering and Computer Science, University of Michigan), Seong-Taek Park (Samsung Electronics Co.), Kang G. Shin (Department of Electrical Engineering and Computer Science, University of Michigan)

“Client-Centered Energy*Delay Minimization for TCP Downloads,” Haijin Yan, Rupa Krishan, Scott Watterson, David Lowenthal, Kang Li (University of Georgia), Larry Peterson (Princeton University)

“Single-service Quality Differentiation,” Gunnar Karlsson, Ignacio Más Ivars, Henrik Lundqvist (KTH, The Royal Institute of Technology, Sweden)

“Where Packet Traces Meet Speech Samples: An Instrumental Approach to Perceptual QoS Evaluation of VoIP,” Florian Hammer, Peter Reichl, Thomas Ziegler (Telecommunications Research Center Vienna)

12:50 – 1:00: Closing Remarks

Baochun Li and Zhi-Li Zhang, Program co-chairs