IEEE Infocom 2005

March 13 - 17 Miami Florida

PROGRAM INFORMATION

IEEE COMMUNICATIONS SOCIETY

http://www.ieee-infocom.org/2005

Executive Committee

General Chair

Taieb Znati, *University of Pittsburgh*

Technical Program Co-Chairs

Edward Knightly, *Rice University*
Kia Makki, *Florida International University*

Technical Program Vice-Chair

Yuguang "Michael" Fang, *University of Florida*

International Vice-Chairs

Francois Bacelli, *INRIA & ENS*
Ming-Syan Chen, *National Taiwan University*
Christos Douligeris, *University of Piraeus*
Joseph B. Evans, *National Science Foundation*
Mohsen Guizani, *Western Michigan University*
Xiaohua Jia, *City University of Hong Kong*
Kami (Sam) Makki, *Queensland University of Technology*
Charles A. Shoniregun, *University of East London*

Finance Co-Chairs

E. K. Park, *University of Missouri, Kansas City*
Senad Busovaca, *California State University, Sacramento*
Bruce Worthman, *IEEE Communications Society*

Publicity Co-Chairs

Chunming Qiao, *The State University of New York, Buffalo*
A. Bruce McDonald, *Northeastern University*

Tutorial Co-Chairs

Thomas Hou, *Virginia Tech*
Robin Kravets, *University of Illinois*

Keynote Speaker Co-Chairs

Kevin Almeroth, *University of California*
Mukesh Singhal, *University of Kentucky*

Panel Co-Chairs

Mohammed Atiquzzaman, *University of Oklahoma*
Demetrios Kazakos, *University of Idaho*

Publication Co-Chairs

Suresh Singh, *Portland State University*
Ozan Tongus, *Carnegie Mellon University*

Local Arrangement Co-Chairs

John McGowan, *Florida International University*
Niki Pissinou, *Florida International University*
Kang K. Yen, *Florida International University*
Osama Mohammed, *Florida International University*

Internet Co-Chairs

Ibrahim Matta, *Boston University*
Lance Hester, *Motorola*

Information Systems Co-Chairs

Srikanth Krishnamurthy, *University of California, Riverside*
Ophir Frieder, *Illinois Institute of Technology*

Corporate Patrons Co-Chairs

Daniel M. Baeza, *BellSouth Telecommunications*
Parviz Kermani, *IBM T. J. Watson Research Center*

Poster/Demo Co-Chairs

Jennifer Hou, *University of Illinois, Urbana-Champagne*
N. Sai Shankar, *Philips Research Laboratory*
Krishna Sivalingam, *University of Maryland, Baltimore County*

Standing Committee Officers

Harvey Freeman, *Booz Allen Hamilton Inc.* (Chair)
Kazem Sohraby, *University of Arkansas* (Vice-Chair)
Mark Karol, *Avaya Inc.* (Secretary)

Keynote Speakers

Hossein Eslambolchi
President, AT&T Global Networking Technology Services,
AT&T CTO & CIO.

Hossein Eslambolchi is President of AT&T's Global Networking Technology Services (GNTS), Chief Technology Officer (CTO) and Chief Information Officer (CIO). He is responsible for the corporation's strategic technology direction, network operations, research and development, information technology systems and processes, and advises the chairman and senior leaders on technology issues. Hossein is a member of AT&T's Executive Committee and oversees the formulation and implementation of a strategic vision to advance technology in conjunction with AT&T's business objectives. He has been instrumental in the transformation of AT&T from a consumer-oriented voice company to an enterprise-focused IP networking company.

Power of Technology to Transform the Future

Keynote Abstract

In this talk, Dr. Eslambolchi will present how the power of technology will transform the future. He will describe what he views on the top technology trends over the next several years. He will discuss how these technologies will transform the world and our daily lives. He will present the evolution and future direction of Information Communication integral to every aspect of society: Digital Government, Commerce, Health Care, Education, Security, Military, and Arts & Culture. Dr. Eslambolchi will explore the resulting challenges and research opportunities for academia, industry, business, and society and the need for university – industry partnership. He will show how these major trends are already impacting the telecommunications industry.

Andrew Herbert
Managing Director, Microsoft Research,
Cambridge, UK.

Andrew Herbert is the Managing Director of Microsoft Research in Cambridge, England. His research interests span the fields of networks, operating systems, programming languages and distributed information sharing. He began his research career at Cambridge University where he worked on early developments in local area networks and personal computing, then moved to industry when he worked on distributed object technology, telecommunications services architectures and associated standards (ANSA, CORBA, ODP, TINA), thin client systems (Citrix), e-Commerce security and application servers (Digitivity). Andrew is Fellow of Wolfson College Cambridge and a Liveryman of the City of London Worshipful Company of Information Technologists.

An End System View of Networking

Keynote Abstract

Traditionally IP network design has been driven from the perspective of network operators and network equipment vendors, and has regarded end systems as simply sources and sinks of data to be transported end-to-end. From the perspective of an operating system vendor, and particularly for enterprise networks, this is a short-sighted view. Being within a common management domain, end systems in an enterprise IP network provide a robust, distributed computing infrastructure for network monitoring, diagnosis and management; however this infrastructure has to be defended against vulnerability to viruses, worms and other external security attacks. By working together to provide a global picture, end systems can automate detection of and recovery from faults, which will be increasingly necessary as networks grow in scale, making the handling of failed network links, components and services an inevitable part of normal operation.

Technical Program Committee

Dharma Agrawal	University of Cincinnati
Kevin Almeroth	University of California, Santa Barbara
Eitan Altman	INRIA Sophia-Antipolis
Mostafa Ammar	Georgia Institute of Technology
Matthew Andrews	Bell Labs, Lucent Technologies
Nirwan Ansari	New Jersey Institute of Technology
Mohammed Atiquzzaman	University of Oklahoma
Arturo Azcorra	University Carlos III of Madrid
Francois Baccelli	INRIA-ENS
Rajive Bagrodia	University of California, Los Angeles
Sujata Banerjee	HP Laboratories
Suman Banerjee	University of Wisconsin, Madison
Chadi Barakat	INRIA Sophia-Antipolis
Stefano Basagni	Northeastern University
Yigal Bejerano	Bell Labs, Lucent Technologies
Elizabeth Belding-Royer	University of California, Santa Barbara
Randall Berry	Northwestern University
Samrat Bhattacharjee	University of Maryland, College Park
Sem Borst	Bell Labs, Lucent Technologies
Lee Breslau	AT&T Research Laboratories
José Brustoloni	University of Pittsburgh
John Byers	Boston University
Andrew Campbell	Columbia University
Guohong Cao	Pennsylvania State University
H. Jonathan Chao	Brooklyn Polytech
Mainak Chatterjee	University of Central Florida
Jyh-Cheng Chen	National Tsinghua University
Shigang Chen	University of Florida
Xiuzhen Cheng	George Washington University
Carla-Fabiana Chiasserini	Politecnico di Torino
Sunghyun Choi	Seoul National University
Chen-Nee Chuah	University of California, Davis
Mooi Chuah	Lehigh University
Costas Courcoubetis	Athens University of Economics & Business
Jon Crowcroft	University of Cambridge
Sajal Das	University of Texas, Arlington
Ding-Zhu Du	NSF / University of Minnesota
Gustavo de Veciana	The University of Texas, Austin
Christophe Diot	Intel Research
Christos Douligeris	University of Piraeus
Constantinos Dovrolis	Georgia Institute of Technology
Eylem Ekici	Ohio State University
Magda El Zarki	University of California, Irvine
Anthony Ephremides	University of Maryland, College Park
Do Young Eun	North Carolina State University
Joseph B. Evans	National Science Foundation
Sonia Fahmy	Purdue University
Yu Wang	University of North Carolina, Charlotte
Roger Wattenhofer	ETH Zurich
Cedric Westphal	Nokia Research Center
Lars Wolf	TU Braunschweig, IBR
Kevin Fall	Intel Research, Berkeley
Michalis Faloutsos	University of California Riverside
Serge Fdida	University Pierre and Marie Curie
Anja Feldmann	Technical University Munich
Joe Finney	Lancaster University
Luigi Fratta	Politecnico di Milano
Boroko Furht	Florida Atlantic University
Sebastià Galmés	Universitat de les Illes Balears
Mario Gerla	University of California, Los Angeles
Tim Griffin	Intel
Thomas Gross	ETH Zurich
Mohsen Guizani	Western Michigan University
Ruibing Hao	Bell Labs, Lucent Technologies, China
Jennifer Hou	University of Illinois
Thomas Hou	Virginia Tech
Jean-Pierre Hubaux	EPFL, Switzerland
David Hutchison	Lancaster University
Sugih Jamin	University of Michigan
Kevin Jeffay	University of North Carolina
Predrag Jelenkovic	Columbia University
Xiaohua Jia	City University of Hong Kong
David B. Johnson	Rice University
Scott Jordan	University of California, Irvine
Anthony Joseph	University of California, Berkeley
Admela Jukan	National Science Foundation
Shivkumar Kalyanaram	Rensselaer Polytechnic Institute
Koushik Kar	Rensselaer Polytechnic Institute
Brad Karp	Intel Research/Carnegie Mellon University
Srinivasan Keshav	University of Waterloo
George Kesidis	Pennsylvania State University
Peter Key	Microsoft
Turgay Korkmaz	University of Texas, San Antonio
Robin Kravets	University of Illinois, Urbana-Champaign
Srikanth Krishnamurthy	University of California, Riverside
Marwan Krunz	University of Arizona
Srisankar Kunniyur	University of Pennsylvania
Tom La Porta	Pennsylvania State University
Jean-Yves Le Boudec	EPFL, Switzerland
Daniel Lee	University of Southern California
Sung-Ju Lee	HP Laboratories
Ian Leslie	Cambridge University
Baochun Li	University of Toronto
Bo Li	Hong Kong University of Science & Technology
Jie Li	University of Tsukuba
Li Li	Bell Labs, Lucent Technologies
Xiang-Yang Li	Illinois Institute of Technology
Jorg Liebeherr	University of Virginia
Zhi-Li Zhang	University of Minnesota
Chi Zhou	Florida International University
Michele Zorzi	Università degli Studi di Padova
Moshe Zukerman	University of Melbourne

Technical Program Committee

Chuang Lin	Tsinghua University
Bin Liu	Tsinghua University
Jiangchuan Liu	The Chinese University of Hong Kong
Mingyan Liu	University of Michigan
Xin Liu	University of California, Davis
Yonghe Liu	University of Texas, Arlington
Dmitri Loguinov	Texas A&M University
Wenjing Lou	Worcester Polytechnic Institute
Steven Low	California Institute of Technology
Songwu Lu	University of California, Los Angeles
Zhuoqing Mao	University of California, Berkeley
Peter Marbach	University of Toronto
Ibrahim Matta	Boston University
Archan Misra	IBM T. J. Watson Research Center
Vishal Misra	Columbia University
Eytan Modiano	Massachusetts Institute of Technology
Melody Moh	San Jose State University
Prasant Mohapatra	University of California, Davis
Sue Moon	KAIST
Fabio Neri	Politecnico di Torino
T.S. Eugene Ng	Rice University
Robert Nowak	University of Wisconsin, Madison
Antonio Nucci	Sprint ATL
Mohammad S. Obaidat	Monmouth University
Ariel Orda	Technion, Israel
Giovanni Pacifici	IBM T.J. Watson Research Center
Jitendra Padhye	Microsoft Research
Venkata Padmanabhan	Microsoft Research
Sergio Palazzo	University of Catania
Konstantina Papagiannaki	Intel Corporation
Abhay Parekh	University of California, Berkeley
Stephen Patek	University of Virginia
Wuxu Peng	Southwest Texas State University
Adrian Perrig	Carnegie Mellon University
Dhananjay Phatak	University of Maryland, Baltimore County
Niki Pissinou	Florida International University
George Polyzos	Athens University of Economics & Business
Prashant Pradhan	IBM T. J. Watson Research Center
Alexandre Proutiere	France Telecom R&D
Konstantinos Psounis	University of Southern California
Chunming Qiao	State University of New York, Buffalo
Parmesh Ramanathan	University of Wisconsin, Madison
Ram Ramanathan	BBN LLC - A Division of GTE Corp.
Ramachandran Ramjee	Bell Laboratories, Lucent Technologies
Ramesh Rao	University of California, San Diego
A. L. Narasimha Reddy	Texas A & M University
Peter Reiher	University of California, Los Angeles
Xin Wang	State University of New York, Buffalo
Dapeng Oliver Wu	University of Florida
Hongyi Wu	University of Louisiana, Lafayette
Jie Wu	Florida Atlantic University
Martin Reisslein	Arizona State University
Reza Rejaie	University of Oregon
Rudolf Riedi	Rice University
Luigi Rizzo	University of Pisa
Pablo Rodriguez	Microsoft Research, Cambridge
Keith W. Ross	Brooklyn Polytech
Antony Rowstron	Microsoft Research
Dan Rubenstein	Columbia University
Ashutosh Sabharwal	Rice University
Sambit Sahu	IBM T. J. Watson Research Center
Dilip Sarkar	University of Miami
Caterina Scoglio	Georgia Institute of Technology
Subhabrata Sen	AT&T Labs - Research
Sergio Servetto	Cornell University
Sanjay Shakkottai	University of Texas, Austin
Yuval Shavitt	Tel-Aviv University
Sherman Shen	University of Waterloo
Prashant Shenoy	University of Massachusetts, Amherst
Ness Shroff	Purdue University
Suresh Singh	Portland State University
Prasun Sinha	Ohio State University
Raghupathy Sivakumar	Georgia Institute of Technology
Dawn Song	Carnegie Mellon University
Alex Snoeren	University of California, San Diego
R. Srikant	University of Illinois, Urbana-Champaign
David Starobinski	Boston University
Ioannis Stavrakakis	University of Athens
Peter Steenkiste	Carnegie Mellon University
Malgorzata Steinder	IBM
Ralf Steinmetz	Darmstadt University of Technology
Ion Stoica	University Of California, Berkeley
Ivan Stojmenovic	University of Ottawa
Violet Syrotiuk	Arizona State University
Patrick Thiran	EPFL, Switzerland
Fouad Tobagi	Stanford University
Joe Touch	University of Southern California/ISI
Don Towsley	University of Massachusetts, Amherst
Ljiljana Trajkovic	Simon Fraser University
Satish Tripathi	University of California, Riverside
Jonathan Turner	Washington University, St. Louis
Rui Valadas	University of Aveiro
Giorgio Ventre	University of Napoli, Federico II
Andras Veres	Ericsson Research
Mary Vernon	University of Wisconsin, Madison
Peng-Jun Wan	Illinois Institute of Technology
Helen Wang	Microsoft Research
Jia Wang	AT&T Research Laboratories
Wenye Wang	North Carolina State University
Junshan Zhang	Arizona State University
Qian Zhang	Microsoft Research
Xiaodong Zhang	College of William and Mary

Technical Program Committee

Zhen Xiao	AT&T Research
Geoffrey Xie	Naval Postgraduate School
Jun Xu	Georgia Institute of Technology
Guoliang Xue	Arizona State University
Tao Yang	University of California, Santa Barbara
Yang Richard Yang	Yale University
Yuanyuan Yang	State University of New York, Stony Brook
Edmund Yeh	Yale University
Bulent Yener	Rensselaer Polytechnic Institute
Suk-Chung Yoon	Widener University
Hui Zhang	Carnegie Mellon University
Roy Yates	Rutgers University
Chi-Hsiang Yeh	Queen's University

Tutorials

	Tutorial	Day	Room
1	***Resource Allocation Techniques in Cross-layer Designs of Wireless Networks*** Leandros Tassiulas, University of Thessaly, Greece and University of Maryland, College Park, USA	Half Day Tutorial *1:30 P.M. to 5:30 P.M.,* *Sunday, 13th March 2005*	
2	***Virtual and Overlay Networks*** Joe Touch, University of Southern California/Information Sciences Institute, USA	Half Day Tutorial *1:30 P.M. to 5:30 P.M.,* *Sunday, 13th March 2005*	
3	***Traffic Analysis for Network Security*** Tom Chen, Southern Methodist University, USA	Half Day Tutorial *8:30 A.M. to 12:30 P.M.,* *Monday, 14th March 2005*	
4	***Advances in Wireless Local Area Networks*** Benny Bing, Georgia Institute of Technology, USA	Half Day Tutorial *8:30 A.M. to 12:30 P.M.,* *Monday, 14th March 2005*	
5	***Access and Metro Networks*** Hui Zhang, Carnegie Mellon University, USA	Half Day Tutorial *1:30 P.M. to 5:30 P.M.,* *Monday, 14th March 2005*	
6	***Security and Misbehavior Handling in Wireless Ad Hoc Networks*** Nitin H. Vaidya, University of Illinois, Urbana-Champaign, USA	Half Day Tutorial *1:30 P.M. to 5:30 P.M.,* *Monday, 14th March 2005*	
7	***Optimization and Control of Communication Networks*** Steven Low, California Institute of Technology, USA Mung Chiang, Princeton University, USA	Full Day Tutorial *8:30 A.M. to 5:30 P.M.,* *Monday, 14th March 2005*	
8	***Wireless Sensor Networks*** Ian F. Akyildiz, Georgia Institute of Technology, USA	Full Day Tutorial *8:30 A.M. to 5:30 P.M.,* *Monday, 14th March 2005*	

Technical Program

[TUESDAY, 15TH MARCH 2005]

Day	*Tuesday, 15th March 2005*
Time	*8:15 A.M. to 10:30 A.M.*
Keynote Talks	
1	Hossein Eslambolchi President, AT&T Global Networking Technology Services, AT&T Chief Technology Officer & Chief Information Officer, President, AT&T Labs, USA
2	Andrew Herbert, Managing Director, Microsoft Research, United Kingdom

Session	***Cellular Networks***
Chair	Daniel Baeza, *BellSouth Corp.*
Room	
Time	*11:00 A.M. to 12:30 P.M.*

Downlink Beamforming Algorithms with Inter-Cell Interference in Cellular Networks

Tianmin Ren, Richard La
(University of Maryland, College Park, USA)

Blocking Rates in Large CDMA Networks via a Spatial Erlang Formula

Bartlomiej Blaszczyszyn (INRIA-ENS, France),
Mohamed Kadhem Karray (France Telecom R&D, France),
Francois Baccelli (INRIA-ENS, France)

Designing Wireless Radio Access Networks for Third Generation Cellular Networks

Tian Bu (Bell labs, Lucent, USA)
Mun Choon Chan (National University of Singapore, Singapore)
Ramachandran Ramjee (Bell Labs, Lucent Technologies, USA)

Asymptotically Optimal Transmission Power and Rate Control for CDMA Channels with Multiple User Classes

Zvi Rosberg
(Ben Gurion University, Israel)

Session	***802.11 MAC Protocols***
Chair	Dapeng Oliver Wu, *University of Florida*
Room	
Time	*11:00 A.M. to 12:30 P.M.*

The 802.11 MAC Protocol Leads to Inefficient Equilibria

Godfrey Tan, John Guttag
(Massachusetts Institute of Technology, USA)

rDCF: A Relay-enabled Medium Access Control Protocol for Wireless Ad Hoc Networks

Hao Zhu (Florida International University),
Guohong Cao (Pennsylvania State University, USA)

Throughput Modelling and Fairness Issues in CSMA/CA Based Ad-Hoc Networks

Xin Wang, Koushik Kar
(Rensselaer Polytechnic Institute, USA)

Distributed Optimal Contention Window Control for Elastic Traffic in Wireless LANs

Yaling Yang , Jun Wang , Robin Kravets
(University of Illinois, Urbana-Champaign, USA)

Session	***Energy Management in Ad Hoc Networks***
Chair	Joseph B. Evans, *National Science Foundation*
Room	
Time	*11:00 A.M. to 12:30 P.M.*

Exchange Power Management for Mobile Ad Hoc Networks

John Dorsey, Daniel Siewiorek
(Carnegie Mellon University, USA)

Impact of Power Control on the Performance of Ad Hoc Wireless Networks

Arash Behzad, Izhak Rubin
(University of California, Los Angeles, USA)

Optimal Fixed and Scalable Energy Management for Wireless Networks

Rahul Mangharam, Ragunathan Rajkumar (Carnegie Mellon University, USA),
Sofie Pollin, Bruno Bougard, Francky Catthoor , Liesbet Van der Perre (IMEC, Belgium)

Spatial Energy Balancing in Large-scale Wireless Multihop Networks

Seung Jun Baek, Gustavo de Veciana
(University of Texas, Austin, USA)

Technical Program

[TUESDAY, 15TH MARCH 2005]

Session	***Localization in Sensor Networks***
Chair	Sajal Das, *University of Texas, Arlington*
Room	
Time	*11:00 A.M. to 12:30 P.M.*

Localization for Anisotropic Sensor Networks

Hyuk Lim, Jennifer Hou
(University of Illinois, Urbana-Champaign, USA)

GPS Free Coordinate Assignment and Routing in Wireless Sensor Networks

Antonio Caruso (Istitute of Science & IT, Italy),
Alessandro Urpi, Stefano Chessa (University of Pisa, Italy),
Swades De (New Jersey Institute of Technology, USA)

A Beacon-Less Location Discovery Scheme for Wireless Sensor Networks

Lei Fang, Wenliang Du (Syracuse University, USA),
Peng Ning (North Carolina State University, USA)

Mobile-assisted Topology Generation for Auto-Localization in Sensor Networks

Nissanka Priyantha, Hari Balakrishnan, Erik Demaine, Seth Teller
(Massachusetts Institute of Technology, USA)

Session	***Routing – I***
Chair	Ibrahim Matta, *Boston University*
Room	
Time	*11:00 A.M. to 12:30 P.M.*

A Performance vs. Cost Framework for Evaluating DHT Design Tradeoffs under Churn

Jinyang Li , Jeremy Stribling, Frans Kaashoek, Robert Morris, Thomer Gil
(Massachusetts Institute of Technology, USA)

Avoiding transient loops during IGP convergence in IP networks

Pierre François, Olivier Bonaventure
(Université Catholique de Louvain, Belgium)

Practical Routing-Layer Support for Scalable Multihoming

Ramakrishna Gummadi, Ramesh Govindan
(University of Southern California, USA)

A Precomputation Scheme for Minimum Interference Routing: the Least-Critical-Path_first Algorithm

Gabor Retvari, Jozsef Biro, Tibor Cinkler
(Budapest University of Technology and Economics, Hungary)

Session	***Network Pricing – I***
Chair	Mahmoud F. Daneshmand, *AT&T Corp.*
Room	
Time	*11:00 A.M. to 12:30 P.M.*

Economics of Network Pricing with Multiple ISPs

Srinivas Shakkottai, R. Srikant
(University of Illinois, Urbana-Champaign, USA)

Pricing Differentiated Internet Services

Linhai He, Jean Walrand
(University of California, Berkeley, USA)

Pricing and Revenue Sharing Strategies for Internet Service Providers

Linhai He, Jean Walrand
(University of California, Berkeley, USA)

Maximizing profit in overloaded networks

Matthew Andrews
(Bell Labs, Lucent Technologies, USA)

Session	***Traffic Characterization***
Chair	Bin Liu, *Tsinghua University*
Room	
Time	*11:00 A.M. to 12:30 P.M.*

Scalable Packet Classification using Distributed Crossproducting of Field Labels

David Taylor, Jonathan Turner
(Washington University in St. Louis, USA)

What signals do packet-pair dispersions carry?

Xiliang Liu, Kaliappa Ravindran (CUNY Graduate center, USA),
Dmitri Loguinov (Texas A&M University, USA)

TCAM-based Distributed Parallel Packet Classification Algorithm with Range Matching Solution

Kai Zheng (Tsinghua University, P. R. China),
Hao Che, Zhijun Wang (University of Texas, Arlington, USA),
Bin Liu (Tsinghua University, P. R. China)

Packet Classification via Improved Space Decomposition Techniques

Filippo Geraci, Marco Pellegrini, Paolo Pisati (IIT-CNR, Italy),
Luigi Rizzo (University of Pisa, Italy)

Technical Program

[TUESDAY, 15TH MARCH 2005]

Session	***Location Management & Topology Control***
Chair	Mohammad S. Obaidat, *Monmouth University*
Room	
Time	*2:00 P.M. to 3:30 P.M.*

Network Localization in Partially Localizable Networks

David Goldenberg, Arvind Krishnamurthy, Wesley Maness, Yang Richard Yang, Anthony Young, A. Stephen Morse, Andreas Savvides, Brian D.O. Anderson (Yale University, USA)

Monotone Percolation and The Topology Control of Wireless Networks

Anxiao Andrew Jiang, Jehoshua Bruck (California Institute of Technology, USA)

GLIDER: Gradient Landmark-Based Distributed Routing for Sensor Networks

Qing Fang, Jie Gao, Leonidas Guibas, Vin de Silva (Stanford University, USA), Li Zhang (HP Labs, USA)

Locating network monitors: complexity, heuristics, and coverage

Kyoungwon Suh (University of Massachusetts, Amherst, USA), Yang Guo (The MathWorks, Inc., USA), James F. Kurose, Don Towsley (University of Massachusetts, Amherst, USA)

Session	***Optical Networks***
Chair	Krishna Sivalingam, *University of Maryland, BC*
Room	
Time	*2:00 P.M. to 3:30 P.M.*

Bounds on Fiber Minimization in Optical Networks with Fixed Fiber Capacity

Matthew Andrews, Lisa Zhang (Bell Labs, Lucent Technologies, USA)

A Novel Analytical Model for Electronic and Optical Switches with Shared Buffer

Zhenghao Zhang, Yuanyuan Yang (State University of New York, Stony Brook, USA)

Dynamic reconfiguration and routing algorithms for IP-over-WDM networks with stochastic traffic

Andrew Brzezinski, Eytan Modiano (Massachusetts Institute of Technology, USA)

An Efficient Reservation MAC Protocol with Preallocation for High-Speed WDM Passive Optical Networks

Chunpeng Xiao, Benny Bing, Gee-Kung Chang (Georgia Institute of Technology, USA)

Session	***Network Pricing – II***
Chair	Mahmoud F. Daneshmand, *AT&T Corp.*
Room	
Time	*2:00 P.M. to 3:30 P.M.*

Analysis of the Competition between Wired, DSL and Wireless Users in an Access Network

Francois Baccelli, Ki Baek Kim (INRIA, Republic of Korea), Danny De Vleeschauwer (Alcatel, Belgium)

Designing Incentives for Peer-to-Peer Routing

Alberto Blanc, Yi-Kai Liu, Amin Vahdat (University of California, San Diego, USA)

Cooperation and decision-making in a wireless multi-provider setting

Alexander Zemlianov, Gustavo de Veciana (The University of Texas, Austin, USA)

MV Routing and Capacity Building in Disruption Tolerant Networks

Brendan Burns, Oliver Brock, Brian Neil Levine (University of Massachusetts, Amherst, USA)

Session	***Performance Analysis of Ad Hoc Networks***
Chair	Babak Hassibi, *California Institute of Technology*
Room	
Time	*2:00 P.M. to 3:30 P.M.*

Capacity of Wireless Ad-hoc Networks under Ultra Wide Band with Power Constraint

Honghai Zhang, Jennifer Hou (University of Illinois, Urbana-Champaign, USA)

On the Critical Total Power for Asymptotic k-connectivity in wireless networks

Honghai Zhang , Jennifer Hou (University of Illinois, Urbana-Champaign, USA)

Non-pipelined Relay Improves Throughput Performance of Wireless Ad-hoc Networks

Aravind Velayutham, Karthikeyan Sundaresan, Raghupathy Sivakumar (Georgia Institute of Technology, USA)

Coverage and Connectivity of Ad-Hoc Networks in Presence of Channel Randomness

Daniele Miorandi (University of Padova, Italy), Eitan Altman (INRIA, France)

Technical Program

[TUESDAY, 15TH MARCH 2005]

Session	***Security and Group Communications***
Chair	Jean-Pierre Hubaux, *EPFL, Switzerland*
Room	
Time	*2:00 P.M. to 3:30 P.M.*

Group Rekeying for Filtering False Data in Sensor Networks: A Predistribution and Local Collaboration-Based Approach

Wensheng Zhang, Guohong Cao
(Pennsylvania State University, USA)

New Constructions On Broadcast Encryption and Key Pre-Distribution Schemes

Chih-Hao Huang, Dingzhu Du
(University of Minnesota, USA)

PIKE: Peer Intermediaries for Key Establishment

Haowen Chan, Adrian Perrig
(Carnegie Mellon University, USA)

Spoofing Prevention Method

Anat Bremler-Barr (Interdisciplinary Center Herzliya, Israel),
Hanoch Levy (Tel Aviv University, Israel)

Session	***Routing – II***
Chair	Ramon Puigjaner, *Universitat de les Illes Balears, Spain*
Room	
Time	*2:00 P.M. to 3:30 P.M.*

Heterogeneity and Load Balance in Distributed Hash Tables

Brighten Godfrey, Ion Stoica
(University Of California, Berkeley, USA)

On Optimal Routing with Multiple Traffic Matrices

Chun Zhang, Yong Liu , Weibo Gong , James F. Kurose, Robert Moll, Don Towsley
(University of Massachusetts, Amherst, USA)

Relating Two Formal Models of Path- Vector Routing

Vijay Ramachandran (Yale University, USA),
Aaron Jaggard (Tulane University, USA)

Provably Competitive Adaptive Routing

Baruch Awerbuch, David Holmer (Johns Hopkins University, USA),
Robert Kleinberg (Massachusetts Institute of Technology, USA)
Herbert Rubens (Johns Hopkins University, USA)

Session	***Resource Allocation in Wireless Networks***
Chair	Thomas F. La Porta, *Pennsylvania State University*
Room	
Time	*2:00 P.M. to 3:30 P.M.*

A Calculus Approach to Minimum Energy Transmission Policies with Quality of Service Guarantees

Murtaza Zafer, Eytan Modiano
(Massachusetts Institute of Technology, USA)

Quasi-optimal bandwidth allocation for multi-spot MFTDMA satellites

Sara Alouf, Eitan Altman (INRIA, France),
Jerome Galtier (France Telecom R&D, France),
Jean-François Lalande (University of Nice Sophia Antipolis, France),
Corinne Touati (INRIA Sophia-Antipolis, France)

Energy Optimal Control for Time Varying Wireless Networks

Michael Neely
(University of Southern California, USA)

Bounding the Power Rate Function of Wireless Ad hoc Networks

Yunnan Wu (Princeton University, USA),
Qian Zhang, Wenwu Zhu (Microsoft Research, P.R. China),
S. Y. Kung (Princeton University, USA)

Technical Program

[TUESDAY, 15TH MARCH 2005]

Session	***Localization and Mobility in WLANs***
Chair	Haiyun Luo, *University of Illinois, Urbana-Champagne*
Room	
Time	*4:00 P.M. to 5:30 P.M.*

On the Accuracy of Signal Strength-based Location Estimation Techniques

A.S. Krishnakumar, P. Krishnan
(Avaya Labs, USA)

Location Enhancement to IEEE 802.11 DCF

Tamer Nadeem (University of Maryland, USA), Lusheng Ji (AT&T Labs Research, USA), Ashok K. Agrawala, Jonathan Agre (Fujitsu Labs of America, USA)

A Mobility Model Based on WLAN Traces and its Validation

Cristian Tuduce, Thomas Gross
(ETH Zurich, Switzerland)

SyncScan: Practical Fast Handoff for 802.11 Infrastructure Networks

Ishwar Ramani, Stefan Savage
(University of California, San Diego, USA)

Session	***Routing in Ad Hoc Networks – I***
Chair	Jie Wu, *Florida Atlantic University*
Room	
Time	*4:00 P.M. to 5:30 P.M.*

A Distributed Adaptive Cache Update Algorithm for the Dynamic Source Routing Protocol

Xin Yu, Zvi Kedem
(New York University, USA)

Multipath Routing for Multiple Description Video over Wireless Ad Hoc Networks

Shiwen Mao, Thomas Hou, Xiaolin Cheng, Hanif Sherali, Scott Midkiff
(Virginia Tech, USA)

Interference-Aware Routing in Multihop Wireless Networks using Directional Antennas

Jian Tang, Guoliang Xue, Christopher Chandler, Weiyi Zhang
(Arizona State University, USA)

Online Lifetime-centric Multicast Routing for Wireless Ad Hoc Networks with Directional Antennas

Thomas Hou, Yi Shi , Hanif Sherali (Virginia Tech, USA), Jeffrey Wieselthier (Naval Research Laboratory, USA)

Session	***WDM Networks***
Chair	Parviz Kermani, *IBM Corp.*
Room	
Time	*4:00 P.M. to 5:30 P.M.*

Dual-Header Optical Burst Switching: A new Architecture for WDM Burst-Switched Networks

Neil Barakat, Edward H. Sargent
(University of Toronto, Canada)

On-Line Optimal Wavelength Assignment in WDM Networks with Shared Wavelength Converter Pool

Zhenghao Zhang, Yuanyuan Yang
(State University of New York, Stony Brook, USA)

Multicast Capacity of Packet-Switched Ring WDM Network

Michael Scheutzow (Technical University Berlin, Germany), Patrick Seeling (Arizona State University, USA), Martin Maier (CTTC, Spain), Martin Reisslein (Arizona State University, USA)

Traffic grooming in WDM SONET rings with multiple line speeds

Huan Liu, Fouad Tobagi
(Stanford University, USA)

Session	***Network Servers***
Chair	Ken Vastola, *Rensselaer Polytechnic Institute*
Room	
Time	*4:00 P.M. to 5:30 P.M.*

Threshold and Reservation Based Admission Control Policies for Multiservice Resource-Sharing Systems

Jian Ni, Sekhar Tatikonda (Yale University, USA), Danny H. K. Tsang, Brahim Bensaou (Hong Kong University of Science and Technology, Hong Kong)

Discriminatory Processor Sharing Revisited

Konstantin Avrachenkov (INRIA Sophia Antipolis, France), Urtzi Ayesta, Patrick Brown (France Telecom R&D, France), Rudesindo Nunez-Queija (CWI, The Netherlands)

Dependency Isolation for Thread-based Multi-tier Internet Services

Lingkun Chu (UC, Santa Barbara, USA), Kai Shen (University of Rochester, USA), Hong Tang, Tao Yang, Jingyu Zhou (University of California, Santa Barbara, USA)

An Efficient Packet Scheduling Algorithm in Network Processors

Jiani Guo, Jingnan Yao, Laxmi Bhuyan
(University of California, Riverside, USA)

Technical Program

[TUESDAY, 15TH MARCH 2005]

Session	***Scheduling***
Chair	Kami (Sam) Makki, *Queensland University of Technology*
Room	
Time	*4:00 P.M. to 5:30 P.M.*

Joint Optimal Scheduling and Routing for Maximum Network Throughput

Emilio Leonardi, Marco Mellia, Marco Ajmone Marsan, Fabio Neri
(Politecnico di Torino, Italy)

FRR: a Proportional and Worst-Case Fair Round Robin Scheduler

Xin Yuan, Zhenhai Duan
(Florida State University, USA)

Credit Based Fair Scheduling for Packet Switched Networks

Deng Pan, Yuanyuan Yang
(State University of New York, Stony Brook, USA)

Online Time-Constrained Scheduling in Linear Networks

Joseph (Seffi) Naor, Adi Rosen, Gabriel Scalosub
(Technion, Israel)

Session	***Transport Protocol Performance***
Chair	John McGowan, *Florida International University*
Room	
Time	*4:00 P.M. to 5:30 P.M.*

TCP congestion avoidance: A network calculus intyerpretation and performance inprovements

Mingyu Chen, Jinsong Zhang, Manohar Murthy, Kamal Premaratne
(University of Miami, USA)

A Systematic Simulation-based Study of Adverse Impact of Short-lived TCP Flows on Long-lived TCP Flows

Shirin Ebrahimi-Taghizadeh, Ahmed Helmy, Sandeep Gupta
(University of Southern California, USA)

Modelling and Stability of FAST TCP

Jiantao Wang, Xiaoliang Wei, Steven Low
(California Institute of Technology, USA)

Spatial-Temporal Analysis of passive TCP Measurements

Eli Brosh, Galit Lubetzky-Sharon, Yuval Shavitt
(Tel-Aviv University, Israel)

Session	***Sensor Networks***
Chair	Guohong Cao, *Pennsylvania State University*
Room	
Time	*4:00 P.M. to 5:30 P.M.*

BARD: Bayesian-Assisted Resource Discovery In Sensor Networks

Fred Stann, John Heidermann
(University of Southern California, USA)

Exploiting Heterogeneity in Sensor Networks

Mark Yarvis, Nandakishore Kushalnagar (Intel Corp., USA)
Harkirat Singh (Portland State University, USA)
Anand Rangarajan, York Liu (Intel Corp., USA)
Suresh Singh (Portland State University, USA)

RID: Radio Interference Detection in Wireless Sensor Networks

Gang Zhou, Tian He, John Stankovic, Tarek Abdelzaher
(University of Virginia, USA)

Localized Fault-Tolerant Event Boundary Detection in Sensor Networks

Xiuzhen Cheng, Min Ding, Kai Xing (The George Washington University, USA),
Dechang Chen (Uniformed Services University of the Health Sciences, USA)

Technical Program

[WEDNESDAY, 16TH MARCH 2005]

Session	***Switches and Routers***
Chair	Laxmi Bhuyan, *University of California, Riverside*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

Generalization of the Pollaczek-Khinchin Formula for Throughput Analysis of Inputbuffered switches

Cheng-Shang Chang, Duan-Shin Lee, ChaoLin Yu
(National Tsing Hua University)

On the Maximal Throughput of Networks with Finite Buffers and its Application to Buffered Crossbars

Paolo Giaccone, Emilio Leonardi (Politecnico di Torino, Italy)
Devavrat Shah (Stanford University, USA)

Practical Algorithms for Performance Guarantees in Buffered Crossbars

Shang-Tse Chuang, Sundar Iyer, Nick McKeown
(Stanford University, USA)

IPStash: A Set-Associative Memory Approach for Efficient IP-lookup

Georgios Keramidas, Stefanos Kaxiras
(University of Patras, Greece)

Session	***Network Architecture – I***
Chair	Xin Yuan, *Florida State University*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

The BEST Challenge for Next-Generation Ethernet Services

Pankaj Risbood, Bhawna Gupta, Swarup Acharya
(Bell Laboratories, Lucent Technologies, USA)

Classification of Access Network Types: Ethernet, Wireless LAN, ADSL, Cable Modem or Dialup?

Wei Wei, Bing Wang, Chun Zhang , James F. Kurose, Don Towsley
(University of Massachusetts, Amherst, USA)

Buffer Sizing for Congested Internet Links

Amogh Dhamdhere, Hao Jiang, Constantinos Dovrolis
(Georgia Institute of Technology, USA)

Relevance of Massively Distributed Explorations of the Internet Topology: Simulation Results

Jean-Loup Guillaume (University of Paris - LIAFA, France),
Matthieu Latapy (CNRS - LIAFA, France)

Session	***Congestion Control – I***
Chair	Steven Low, *California Institute of Technology*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

Pitfalls in the Fluid Modeling of RTT Variations in Window-Based Congestion Control

Shao Liu, Tamer Basar, R. Srikant
(University of Illinois, Urbana-Champaign, USA)

A Class of Reliable UDP-based Transport Protocols Based on Stochastic Approximation

Qishi Wu, Nageswara Rao
(Oak Ridge National Laboratory, USA)

Understanding XCP: Equilibrium and Fariness

Steven Low (California Institute of Technology, USA)
Lachlan Andreq (University of Melbourne, Australia)
Bartek Wydrowski (California Institute of Technology, USA)

An Implementation and Experimental Study of the eXplicit Control Protocol (XCP)

Yongguang Zhang (HRL Laboratories, LLC, USA),
Thomas Henderson (The Boeing Company, USA)

Session	***Optical Switching Networks***
Chair	Martin Maier, *CTTC, Spain*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

Power Control for OSNR Optimization in Optical Networks: A Distributed Algorithm via A Central Cost Approach

Lacra Pavel
(University of Toronto, Canada)

On Survivable Routing of Mesh Topologies in IP-over-WDM Networks

Maciej Kurant, Patrick Thiran
(Swiss Federal Institute of Technology (EPFL), Switzerland)

Differential Delay Aware Routing for Ethernet over SONET/SDH

Anurag Srivastava, Swarup Acharya , Mansoor Alicherry, Bhawna Gupta, Pankaj Risbood
(Bell Laboratories, Lucent Technologies, USA)

Optical Switching Networks with Minimum Number of Limited Range Wavelength Converters

Hung Ngo, Dazhen Pan (State University of New York, Buffalo, USA),
Yuanyuan Yang (State University of New York, Stony Brook, USA)

Technical Program

[WEDNESDAY, 16TH MARCH 2005]

Session	***Peer-to-Peer Communications – I***
Chair	Xiaodong Zhang, *National Science Foundation*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

dPAM: A Distributed Prefetching Protocol for Scalable Asynchronous Multicast in P2P Systems

Abhishek Sharma, Azer Bestavros, Ibrahim Matta
(Boston University, USA)

Non-uniform Random Membership Management in Peer-to-Peer Networks

Ming Zhong, Kai Shen, Joel Seiferas
(University of Rochester, USA)

Efficient and Scalable Query Routing for Unstructured Peer-to-Peer Networks

Abhishek Kumar, Jun Xu, Ellen Zegura
(Georgia Institute of Technology, USA)

Pollution in P2P File Sharing Systems

Jian Liang, Rakesh Kumar, Yongjian Xi (Polytechnic University, USA),
Keith W. Ross (Brooklyn Polytech, USA)

Day	*Wednesday, 16th March 2005*
Time	*10:30 A.M. to 12:00 P.M.*
Panel 1	***Paranoid Protocol Design for Wireless Networks***
Moderator	Jean-Pierre Hubaux, *EPFL, Switzerland*
Panelists	Bill Arbaugh, *University of Maryland* Ed Knightly, *Rice University* Adrian Perrig, *Carnegie-Mellon University* Nitin Vaidya, *University of Illinois, Urbana-Champaign* Markus Jakobsson, *Indiana University*

Session	***Mobility and Location Management***
Chair	Mohd. Atiquzzaman, *University of Oklahoma*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

On-line Search for Mobile Users

Zohar Naor
(University of Haifa, Israel)

DHARMA: Distributed Home Agent for Robust Mobile Access

Yun Mao, Bjorn Knutsson, Honghui Lu, Jonathan Smith
(University of Pennsylvania, USA)

Location Management for PCS Networks with Consideration of Mobility Patterns

Jie Li, Atushi Kubota
(University of Tsukuba, Japan)

Bayesian Indoor Positioning Systems

David Madigan, Eiman Elnahrawy, Richard Martin (Rutgers University, USA),
Wen-Hua Ju, P. Krishnan, A.S. Krishnakumar (Avaya Labs, USA)

Day	*Wednesday, 16th March 2005*
Time	*10:30 A.M. to 12:00 P.M.*
Panel 2	***Nanoscale Communications***
Moderator	Tatsuya Suda, *University of California, Irvine*
Panelists	Satoshi Hiyama, *NTT DoCoMo, Japan* Kazu Oiwa, *NICT, Japan* Ron Weiss, *Princeton University* Kamal Abdali, *National Science Foundation*

Technical Program

[WEDNESDAY, 16TH MARCH 2005]

Session	***Routing in Ad Hoc Networks – II***
Chair	Chunming Qiao, *SUNY, Buffalo*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Performance Comparison of Scalable Location Services for Geographic Ad Hoc Routing

Himabindu Pucha, Saumitra Das, Y. Charlie Hu
(Purdue University, West Lafayette, USA)

Routing in Ad Hoc Networks: A Theoretical Framework with Practical Implications

Nianjun Zhou, Alhussein Abouzeid
(Rensselaer Polytechnic Institute, USA)

HADOF: Defense Against Routing Disruptions in Mobile Ad Hoc Networks

Wei Yu, Yan Sun, K.J. Ray
(University of Maryland College Park, USA)

Asymptotically Optimal Power-Aware Routing for Multihop Wireless Networks with Renewable Energy Sources

Longbi Lin, Ness Shroff (Purdue University, USA),
R. Srikant (University of Illinois, Urbana-Champaign, USA)

Session	***Congestion Control – II***
Chair	Eytan Modiano, *Massachusetts Institute of Technology*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Performance Analysis and Stochastic Stability of Congestion Control Protocols

Eitan Altman, Konstantin Avrachenkov, Arzad Kherani, Balakrishna Prabhi
(INRIA Sophia Antipolis, France)

Flow Control as Stochastic Optimal Control Problem with Incomplete Information

Boris Miller (Institute for Information Transmission Problem, Russia),
Konstantin Avrachenkov (INRIA Sophia Antipolis, France),
Karen Stepanyan (Institute for Information Transmission Problem, Russia),
Gregory Miller (Moscow State Aviation Institute, Russia)

Equilibrium of Heterogeneous Congestion Control Protocols

Ao Tang, Jiantao Wang, Steven Low (California Institute of Technology, USA),
Mung Chiang (Princeton University, USA)

Fairness in MIMD Congestion Control Algorithms

Eitan Altman, Konstantin Avrachenkov, Balakrishna Prabhu
(INRIA Sophia-Antipolis, France)

Session	***Admission Control & Buffer Management***
Chair	Prasant Mohapatra, *University of California, Davis*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Connection Admission Control for Flow Level QoS in Bufferless Models

Sandor Racz, Tamas Jakabfy, Janos Farkas, Csaba Antal
(Ericsson Research, Hungary)

A New Admission Control Scheme under Energy and QoS Constraints for Wireless Networks

Weyne Wang
(North Carolina State University, USA)

On stochastic recursive equations and infinite server queues

Eitan Altman
(INRIA, France)

Q-Composer & CpR: A Probabilistic Synthesizer and Regulator of Traffic (A Probabilistic Control of Buffer Occupancy)

Sami Ayyorgun (Los Alamos National Laboratory, USA)
Sarut Vanichpun (University of Maryland, College Park, USA)
Wu-chun Feng (Los Alamos National Laboratory, USA)

Session	***Internet Security***
Chair	Dave Sincoskie, *Telcordia Technologies Inc.*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Reduction of Quality (RoQ) Attacks on Internet End-Systems

Mina Guirguis, Azer Bestavros, Ibrahim Matta, Yuting Zhang
(Boston University, USA)

On the Effectiveness of DDOS Attacks on Statistical Filtering

Qiming Li, Ee Chien Chang, Mun Choon Chan
(National University of Singapore, Singapore)

Defending Against Internet Worms: A Signature-Based Approach

Yong Tang, Shigang Chen
(University of Florida, USA)

FIT: Fast Internet Traceback

Abraham Yaar, Adrian Perrig, Dawn Song
(Carnegie Mellon University, USA)

Technical Program

[WEDNESDAY, 16TH MARCH 2005]

Session	***Network Architecture – II***
Chair	Anthony Pressley, *U. S. Army Research Laboratory*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Controlling the Mobility of Multiple Data Transport Ferries in a Delay-Tolerant Network

Wenrui Zhao, Mostafa Ammar, Ellen Zegura
(Georgia Institute of Technology, USA)

Distributed, Secure Load Balancing with Skew, Heterogeneity, and Churn

Jonathan Ledlie, Margo Seltzer
(Harvard University, USA)

Optimizing Cost-sensitive Trust-negotiation Protocols

Weifeng Chen, Lori Clarke, James F. Kurose, Don Towsley
(University of Massachusetts, Amherst, USA)

Delayed-Dictionary Compression for Packet Networks

Yossi Matias, Raanan Refua
(Tel-Aviv University, Israel)

Session	***Peer-to-Peer Communications – II***
Chair	Peter I. Scheuermann, *Northwestern University*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Scalable Consistency Maintenance in Structured P2P Systems

Xin Chen, Shansi Ren, Haining Wang, Xiaodong Zhang
(College of William and Mary, USA)

Assisted Peer-to-Peer Search with Partial Indexing

Rongmei Zhang, Y. Charlie Hu
(Purdue University, USA)

Hybrid Search Schemes for Unstructured Peer-to-Peer Networks

Christos Gkantsidis, Milena Mihail, Amin Saberi
(Georgia Institute of Technology, USA)

Optimal Peer Selection for P2P Downloading and Streaming

Micah Adler (University of Massachusetts, Amherst, USA),
Rakesh Kumar (Polytechnic University, USA),
Keith W. Ross (Brooklyn Polytech, USA), Dan Rubenstein (Columbia University, USA),
Torsten Suel (Polytechnic University, USA), David. D. Yao (Columbia University, USA)

Session	***Network Performance Evaluation***
Chair	Edmundo A. de Souza e Silva, *Universidade Federal do Rio de Janeiro, Brazil*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

The effect of network topology on the spread of epidemics

Ayalvadi Ganesh, Laurent Massoulié, Don Towsley
(University of Massachusetts, Amherst, USA)

Trade-offs in Resource Management for Virtual Private Networks

Satish Raghunath (Nortel Networks, USA),
Shivkumar Kalyanaraman (Rensselaer Polytechnic Institute, USA),
K. K. Ramakrishnan (AT&T Labs. Research, USA)

A Quantitative Study of Authentication and QoS in Wireless IP Networks

Wei Liang, Wenye Wang
(North Carolina State University, USA)

On Efficiency in Searching Networks

Hsinping Wang, Tsungnan Lin
(National Taiwan University, Republic of China)

Session	***Wireless LANs***
Chair	Dilip Sarkar, *University of Miami*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

New Insights from a Fixed Point Analysis of Single Cell IEEE 802.11 WLANs

Anurag Kumar (Indian Institute of Science, India),
Eitan Altman (INRIA, France),
Daniele Miorandi (University of Padova, Italy),
Munish Goyal (Indian Institute of Science, India)

ECHOS: Enhanced Capacity 802.11 Hotspots

Arunchandar Vasan (University of Maryland, USA),
Ramachandran Ramjee, Thomas Woo (Bell Labs, Lucent Technologies, USA)

Smart Power-Saving Mode for IEEE 802.11 WLANs

Daji Qiao (Iowa State University, USA),
Kang G. Shin (University of Michigan, USA)

Achieving Per-Stream QoS with Distributed Airtime Allocation and Admission Control in IEEE 802.11e Wireless LANs

Chun-Ting Chou (University of Michigan, USA),
Saishankar Nandagopalan (Philips Research USA, USA),
Kang Shin (University of Michigan, USA)

Technical Program

[WEDNESDAY, 16TH MARCH 2005]

Session	***Multicast***
Chair	Yuanyuan Yang, *SUNY, Stony Brook*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

Design Multicast Protocols for Non-Cooperative Networks

WeiZhao Wang, Xiang-Yang Li
(Illinois Institute of Technology, USA)

Achieving Minimum-Cost Multicast: A Decentralized Approach Based on Network Coding

Desmond Lun (Massachusetts Institute of Technology, USA),
Niranjan Ratnakar, Ralf Koetter (University of Illinois Urbana-Champaign, USA),
Muriel Medard, Ebad Ahmed, Hyunjoo Lee (Massachusetts Institute of Technology, USA)

Efficient and Distributed Computation of Maximum Multicast Rates

Zongpeng Li, Baochun Li
(University of Toronto, Canada)

The One-to-Many TCP Overlay: A Scalable and Reliable Multicast Architecture

Francois Baccelli (INRIA-ENS, France),
Augustin Chaintreau (Ecole Normale Superieure, France),
Zhen Liu, Anton Riabov (IBM T. J. Watson Research Center, USA)

Session	***Network Management***
Chair	Niki Pissinou, *Florida International University*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

A Measurement Study of Internet Bottlenecks

Ningning Hu (Carnegie Mellon University, USA),
Li Li (Bell Labs, Lucent Technologies, USA),
Z. Morley Mao (University of Michigan, USA),
Peter Steenkiste (Carnegie Mellon University, USA),
Jia Wang (AT&T Labs. Research, USA)

Efficient Monitoring of End-to-End Network Properties

David Chua, Eric Kolaczyk , Mark Crovella
(Boston University, USA)

Optimal Load-Balancing

Isaac Keslassy (Technion, Israel),
Cheng-Shang Chang (National Tsing Hua University),
Nick McKeown (Stanford University, USA),
Duan-Shin Lee (National Tsing Hua University)

Fairness and Optimal Stochastic Control for Heterogeneous Networks

Michael Neely (University of Southern California, USA),
Eytan Modiano (Massachusetts Institute of Technology, USA),
Chihping Li (University of Southern California, USA)

Session	***Network Design and Optimization***
Chair	Vishal Misra, *Columbia University*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

High-Performance Longest Prefix Matching supporting High-Speed Incremental Updates and Guaranteed Compression

Lars-Åke Larzon (Uppsala University, Sweden),
Mikael Sundström (Luleå University of Technology, Sweden)

Gossip Algorithms: Design, Analysis and Applications

Stephen Boyd, Arpita Ghosh, Balaji Prabhakar, Devavrat Shah
(Stanford University, USA)

Improved Single-Round Protocols for Remote File Synchronization

Utku Irmak, Svilen Mihaylov, Torsten Suel
(Polytechnic University, USA)

FissionE: A Scalable Constant Degree and Low Congestion DHT Scheme Based on Kautz Graph

Dongsheng Li, Xicheng Lu (National University of Defense Technology, P.R. China),
Jie Wu (Florida Atlantic University, USA)

Session	***Routing in Sensor Networks***
Chair	Guoliang Xue, *Arizona State University*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

Joint Mobility and Routing for Lifetime Elongation in Wireless Sensor Networks

Jun Luo, Jean-Pierre Hubaux
(Swiss Federal Institute of Technology (EPFL), Switzerland)

Power Aware Routing for Sensor Databases

Chiranjeeb Buragohain , Divyakant Agrawal, Subhash Suri
(University of California, Santa Barbara, USA)

XVR: X Visiting-pattern Routing for Sensor Networks

Yu He, Cauligi Raghavendra
(University of Southern California, USA)

MACRO: An Integrated MAC/Routing Protocol for Geographical Forwarding in Wireless Sensor Networks

Sergio Palazzo, Alessandro Leonardi, Giacomo Morabito,
Laura Galluccio, Dario Ferrara
(University of Catania, Italy)

Technical Program

[WEDNESDAY, 16TH MARCH 2005],[THURSDAY, 17TH MARCH 2005]

Session	***Scheduling in Wireless Networks***
Chair	Weili Wu, *University of Texas, Dallas*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

Power Controlled Minimum Frame Length Scheduling in TDMA Wireless Networks with Sectored Antennas

Arindam Kumar Das (University of Washington, USA),
Robert J. Marks (Baylor University, USA),
Payman Arabshahi, Andrew Gray (Jet Propulsion Laboratory, USA)

Fair Resource Allocation in Wireless Networks using Queue-length-based Scheduling and Congestion Control

Atilla Eryilmaz, R. Srikant
(University of Illinois, Urbana-Champaign, USA)

The Impact of Imperfect Scheduling on Cross-Layer Rate Control in Wireless Networks

Xiaojun Lin, Ness Shroff
(Purdue University, USA)

Random-Access Scheduling with Service Differentiation in Wireless Networks

Piyush Gupta (Bell Labs, Lucent Technologies, USA),
Yogesh Sankarasubramaniam (Georgia Tech, USA),
Sasha Stoylar (Bell Labs, Lucent Technologies, USA)

Session	***Routing, Mobility & Topology in Ad Hoc Networks***
Chair	Xiang-Yang Li, *Illinois Institute of Technology*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

Minimum Energy Accumulative Routing in Wireless Networks

Jiangzhuo Chen, Lujun Jia, Xin Liu, Guevara Noubir, Ravi Sundaram
(Northeastern University, USA)

PEER: A Progressive Energy Efficient Routing Protocol for Wireless Ad Hoc Networks

Jinhua Zhu, Xin Wang
(State University of New York, Buffalo, USA)

Properties of Random Direction Model

Philippe Nain (INRIA, France),
Don Towsley (University of Massachusetts, Amherst, USA),
Benyuan Liu (City College, City University of New York, USA),
Zhen Liu (IBM T.J. Watson Research Center, USA)

SICTA: A 0.693 Contention Tree Algorithm Using Successive Interference Cancellation

Yingqun Yu, Georgios B. Giannakis
(University of Minnesota, USA)

Session	***TCP Enhancements***
Chair	Kamal Premaratne, *University of Miami*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

Bayesian Packet Loss Detection for TCP

Nahur Fonseca, Mark Crovella
(Boston University, USA)

TCP-Africa: An Adaptive and Fair Rapid Increase Rule for scalable TCP

Ryan King, Rudolf Riedi, Richard Baraniuk
(Rice University, USA)

A Disconnection-Tolerant Transport for Drive-thru Internet Environments

Joerg Ott, Dirk Kutscher
(University of Bremen, Germany)

A Dynamic Adaptive Acknowledgment Strategy for TCP over Multihop Wireless Networks

Ruy Oliveira, Torsten Braun
(University of Berne, Switzerland)

Session	***Security in Wireless Networks***
Chair	Peter Reiher, *University of California, Los Angeles*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

Secure positioning of wireless devices with application to sensor networks

Srdan Capkun, Jean-Pierre Hubaux
(Swiss Federal Institute of Technology (EPFL), Switzerland)

Mobile Multi-Layered IPSec

Heesook Choi, Hui Song, Guohong Cao, Tom La Porta
(Pennsylvania State University, USA)

Anonymous Communications in Mobile Ad Hoc Networks

Yanchao Zhang, Wei Liu (Universify of Florida, USA)
Wenjing Lou (Worcester Polytechnic Institute, USA)

Distributed Algorithms for Secure Multipath Routing

Patrick P. C. Lee, Vishal Misra, Dan Rubenstein
(Columbia University, USA)

Technical Program

[THURSDAY, 17TH MARCH 2005]

Session	***Energy Management in Sensor Networks***
Chair	Lance Hester, *Motorola Inc.*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

Cross-Layer Design for Lifetime Maximization in Interference-Limited Wireless Sensor Networks

Ritesh Madan, Shuguang Cui, Sanjay Lall, Andrea Goldsmith
(Stanford University, USA)

Energy-efficient target coverage in wireless sensor networks

Mihaela Cardei (Florida Atlantic University, USA),
My Thai (University of Minnesota, USA),
Weili Wu (University of Texas, Dallas, USA)

A Novel Framework for Energy-Conserving Data Gathering in Wireless Sensor Networks

Wook Choi, Sajal Das
(University of Texas, Arlington, USA)

Dynamic Node Activation in Networks of Rechargeable Sensors

Koushik Kar, Ananth Krishnamurthy, Neeraj Jaggi
(Rensselaer Polytechnic Institute, USA)

Session	***Network Management & Traffic Characterization***
Chair	Dina Papagiannaki, *Intel Corp.*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

A Study of Analyzing Network traffic as Images in Real-Time

Seong Soo Kim, Narasimha Reddy
(Texas A & M University, USA)

ClassBench: A Pacet Classification Benchmark

David Taylor, Jonathan Turner
(Washington University in St. Louis, USA)

Fast, Memory-Efficient Traffic Estimation by Coincidence Counting

Fang Hao, M. Kodialam, T. V. Lakshman
(Bell Labs, Lucent Technologies, USA),
Hui Zhang (University of Southern California, USA)

The Netnice Packet Filter: Bridging the Structural Mismatches in End-host Network Control

Takashi Okumura (Asahikawa Medical College, Japan),
Daniel Mosse (University of Pittsburg, USA)

Session	***Multimedia and Real-time Services***
Chair	James W. Modestino, *University of Miami*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

QoS-Aware AIMD Protocols for Multimedia Services in Wireless/IP Networks

Lin Cai, Sherman Shen, Jon Mark, Jianping Pan
(University of Waterloo, Canada)

Exploiting Diversity to Enhance Multimedia Streaming Over Cellular Links

Julian Chesterfield
(University of Cambridge, United Kingdom)

Capacity of Packetized Voice Services over Time-Shared Wireless Packet Data Channels

Patrick Hosein
(Ericsson Wireless Communications Inc., USA)

A Network Scalability Model for Multiplayer Real-time Games

Jens Mueller, Sergei Gorlatch
(University of Muenster, Germany)

Session	***Overlay Networks – I***
Chair	Yuval Shavitt, *Tel-Aviv University, Israel*
Room	
Time	*8:30 A.M. to 10:00 A.M.*

DONet: A Data-Driven Overlay Network for Efficient Live Media Streaming

Xinyan Zhang (Chinese University of Hong Kong, Hong Kong),
Jiangchuan Liu (Simon Fraser University, Canada),
Bo Li (Hong Kong University of Science and Technology, P. R. China),
Peter Yum (Chinese University of Hong Kong, Hong Kong)

On Failure Detection Algorithms in Overlay Networks

Shelley Zhuang, Dennis Geels, Ion Stoica, Randy H. Katz
(University of California, Berkeley, USA)

Network Overlay Construction under Limited End-to-End Reachability

Wenjie Wang (University of Michigan, USA),
Cheng Jin (California Institute of Technology, USA),
Sugih Jamin (University of Michigan, USA)

Strategyproof Mechanisms for Dynamic Multicast Tree Formation in Overlay Networks

Selwyn Yuen, Baochun Li
(University of Toronto, Canada)

Technical Program

[THURSDAY, 17TH MARCH 2005]

Day	*Thursday, 17th March 2005*
Time	*10:30 A.M. to 12:00 P.M.*
Panel 3	***How does Mobility fit into the Internet Layering Scheme?***
Moderator	Mohammed Atiquzzaman, *University of Oklahoma*
Panelists	Hesham Soliman, *Flarion* Alex C. Snoeren, *University of California, San Diego* Pekka Nikander, *Ericcson Research Lab/ Helsinki Institute for Information Technology* Yogesh Prem Swami, *Nokia Research* Will Ivancic, *NASA GRC*

Session	***Ad Hoc Networks – I***
Chair	Peng-Jun Wan, *Illinois Institute of Technology*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Reaction-Diffusion Based Transmission Patterns for Ad Hoc Networks

Mathilde Durvy, Patrick Thiran
(Swiss Federal Institute of Technology (EPFL), Switzerland)

Power assignment for k-connectivity in wireless ad hoc networks

Xiaohua Jia (City University of Hong Kong, Hong Kong),
Dongsoo Kim (Indiana U. Purdue U. Indianapolis, USA),
Peng-Jun Wan, Chih-Wei Yi (Illinois Institute of Technology, USA)

Joint Congestion Control and Media Access Control Design for Ad Hoc Wireless Networks

Lijun Chen, Steven Low, John Doyle
(California Institute of Technology, USA)

Architecture and Algorithms for an IEEE 802.11-Based Multi-Channel Wireless Mesh Network

Ashish Raniwala, Tzi-Cker Chiueh
(State University of New York, Stony Brook, USA)

Session	***Network Performance Analysis – I***
Chair	Jorg Liebeherr, *University of Virginia*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Exploiting Anarchy in Networks: A Game-Theoretic Approach to Combining Fairness and Throughput

Sreenivas Gollapudi (Oracle Corporation, USA),
D. Sivakumar (IBM Almaden Research Center, USA),
Aidong Zhang (State University of New York, Buffalo, USA)

An Analytic Framework for Modeling Peer to Peer Networks

Krishna Ramachandran, Biplab Sikdar
(Rensselaer Polytechnic Institute, USA)

On Static Reachability Analysis of IP Networks

Geoffrey Xie (Naval Postgraduate School, USA),
Jibin Zhan, David Maltz, Hui Zhang (Carnegie Mellon University, USA),
Albert Greenberg, Jennifer Rexford (AT&T Labs, USA)

On Achieving Optimal End-to-End Throughput in Data Networks: Theoretical and Empirical Studies

Zongpeng Li, Baochun Li, Dan Jiang, Lap Chi Lau
(University of Toronto, Canada)

Session	***Content Delivery and Multimedia***
Chair	Jennifer Hou, *University of Illinois, Urbana-Champagne*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Network Coding for Large Scale Content Distribution

Pablo Rodriguez (Microsoft Research, Cambridge, UK)
Christos Gkantsidis (Georgia Institute of Technology, USA)

Fast Replication in Content Distribution Overlays

Samrat Ganguly, Akhilesh Saxena, Sudeept Bhatnagar, Rauf Izmailov
(NEC Laboratories America, USA),
Suman Banerjee (University of Wisconsin, USA)

Analysis and Modeling of MPEG-4 and H.264 Multi-Layer Video Traffic

Min Dai, Dmitri Loguinov
(Texas A&M University, USA)

Improving VoIP Quality Through Path Switching

Shu Tao (University of Pennsylvania, USA), Kuai Xu (University of Minnesota, USA),
Antonio Estepa (University of Sevilla, Spain),
Teng Fei, Lixin Gao, Roch Guerin (University of Pennsylvania, USA)

Technical Program

[THURSDAY, 17TH MARCH 2005]

Session	***Deployment in Sensor Networks***
Chair	Mou-Hsiung (Harry) Chang, *U. S. Army Research Office*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Deployment Optimization of Sensornet-Based Stochastic Location-Detection Systems

Saikat Ray, Wei Lai, Ioannis Paschalidis
(Boston University, USA)

Efficient Node Deployment in Massively Dense Sensor Networks as an Electrostatics Problem

Stavros Toumpis (Forschungszentrum Telekommunikation Wien, Austria),
Leandros Tassiulas (University of Thessaly, Greece)

Sensor Relocation in Mobile Sensor Networks

Guiling Wang, Guohong Cao , Tom La Porta , Wensheng Zhang
(The Pennsylvania State University, USA)

SMART: A Scan-Based Movement-Assisted Sensor Deployment Method in Wireless Sensor Networks

Jie Wu, Shuhui Yang
(Florida Atlantic University, USA)

Session	***Network Design and Planning***
Chair	Demetrios Kazakos, *University of Idaho*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

The Design and Implementation of Network Puzzles

Wu-chang Feng (Portland State University, USA),
Edward Kaiser (OHSU, USA),
Wu-chi Feng (Oregon Graduate Institute, USA),
Antoine Luu (ENSEIRB, France)

Farsighted Users Harness Network Time-Diversity

Peter Key, Laurent Massoulié , Milan Vojnovic
(Microsoft Research, United Kingdom)

Configuring Networks with Content Filtering Nodes with Applications to Network Security

M. Kodialam, T. V. Lakshman (Bell Labs, Lucent Technologies, USA),
Sudipta Sengupta (Massachusetts Institute of Technology, USA)

The Effect of DNS Delays on Worm Propagation in an IPv6 Internet

Hanhua Feng, Abhinav Kamra, Vishal Misra, Angelos Keromytis
(Columbia University, USA)

Session	***Network Architecture & Traffic Engineering***
Chair	Cliff Bragdon, *Florida Atlantic University*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

On Optimal Traffic Partitioning for Realtime Multipath Transport

Shiwen Mao (Virginia Polytechnic Institute and State University, USA),
Shivendra Panwar (Polytechnic University, USA),
Thomas Hou (Virginia Tech, USA)

Limiting Path Exploration in BGP

Jaideep Chandrashekar (University of Minnesota, USA),
Zhenhai Duan (Florida State University, USA),
Zhi-Li Zhang, Jeffrey Krasky (University of Minnesota, USA)

Differentiated Traffic Engineering for QoS Provisioning

Vahid Tabatabaee, Samrat Bhattacharjee, Richard La, Mark Shayman
(University of Maryland, College Park, USA)

Optimal ISP Subscription for Internet Multihoming: Algorithm Design and Implication Analysis

Hao Wang, Haiyong Xie (Yale University, USA),
Lili Qiu (Microsoft Research, USA),
Avi Silberschatz, Yang Richard Yang (Yale University, USA)

Session	***Resource Management and QoS – I***
Chair	Ahmed Helmy, *University of Southern California*
Room	
Time	*1:30 P.M. to 3:00 P.M.*

Optimal Utility Based Multi-User Throughput Allocation Subject to Throughput Constraints

Matthew Andrews (Bell Labs, Lucent Technologies, USA),
Lijun Qian (Prairie View A&M University, USA),
Sasha Stolyar (Bell Labs, Lucent Technologies, USA)

Differentiated Bandwidth Sharing with Disparate Flow Sizes

Gijs Van Kessel (Eindhoven University of Technology, The Netherlands),
Rudesindo Nunez-Queija (CWI, The Netherlands),
Sem Borst (Bell Labs, Lucent Technologies, USA)

Low State Fairness: Lower Bounds and Practical Enforcement

Abhimanyu Das (USC/Mahi Networks, USA),
Debojyoti Dutta (University of Southern California, USA),
Ashish Goel (Stanford University, USA),
John Heidemann, Ahmed Helmy (University of Southern California, USA)

RSVP Performance Evaluation using Multi-Objective Evolutionary Optimisation

Olufemi Komolafe, Joseph Sventek
(University of Glasgow, United Kingdom)

Technical Program

[THURSDAY, 17TH MARCH 2005]

Session	***Scheduling in Sensor Networks***
Chair	Xiaohua Jia, *City University of Hong Kong*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

Asymptotically Optimal Transmission Policies for Low-Power Wireless Sensor Networks

Ioannis Paschalidis, Wei Lai, David Starobinski
(Boston University, USA)

Delay Efficient Sleep Scheduling in Wireless Sensor Networks

Gang Lu, Narayanan Sadagopan, Bhaskar Krishnamachari
(University of Southern California, USA)

Maximal Lifetime Scheduling in Sensor Surveillance Networks

Liu Hai (City University of Hong Kong, Hong Kong),
Peng-Jun Wan (Illinois Institute of Technology, USA),
Xiaohua Jia (City University of Hong Kong, Hong Kong)

Link Scheduling in Sensor Networks: Distributed Edge Coloring Revisited

Shashidhar Gandham, Milind Dawande, Ravi Prakash
(University of Texas, Dallas, USA)

Session	***Overlay Networks – II***
Chair	Pablo Rodriguez, *Microsoft Corp.*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

On the Interaction Between Overlay Routing and Traffic Engineering

Yong Liu, Honggang Zhang, Weibo Gong , Don Towsley
(University of Massachusetts, Amherst, USA)

Topology Aware Overlay Networks

Junghee Han, David Watson, Farnam Jahanian
(University of Michigan, USA)

A Cost-Based Analysis of Overlay Routing Geometries

Nicolas Christin, John Chuang
(University of California, Berkeley, USA)

Market-driven Bandwidth Allocation in Selfish Overlay Networks

Weihong Wang, Baochun Li
(University of Toronto, Canada)

Session	***Ad Hoc Networks – II***
Chair	Robert Ulman, *U. S. Army Research Office*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

On Neighbor Discovery in Wireless Networks With Directional Antennas

Sudarshan Vasudevan, Jim Kurose, Don Towsley
(University of Massachusetts, Amherst, USA)

On Selfish Behavior in CSMA/CA Networks

Mario Cagalj (Ecole Polytechnique Federale de Lausanne, Switzerland),
Saurabh Ganeriwal (University of California, Los Angeles, USA),
Imad Aad, Jean-Pierre Hubaux (Swiss Federal Institute of Technology (EPFL), Switzerland)

On the Physical Carrier Sense in Wireless Ad-hoc Networks

Xue Yang, Nitin Vaidya
(University of Illinois, Urbana-Champaign, USA)

Throughput-Storage Tradeoff in Ad Hoc Networks

Jeffrey Herdtner (University of Miami, USA),
Edwin Chong (Colorado State University, USA)

Session	***Network Performance Analysis – II***
Chair	Rudolf H. Riedi, *Rice University*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

Tight Delay Bounds for Packetizing Time-Varying Fluid Policies with Speedup and Lookahead in Single Server Systems

Raymond Yim (Harvard University, USA),
Michael Rosenblum (Massachusetts Institute of Technology, USA),
Vahid Tarokh (Harvard University, USA)

The Accuracy of Gilbert Models in Predicting Packet-Loss Statustics for a Single-Multiplexer Models

Xunqi Yu, James Modestino, Xusheng Tian
(University of Miami, USA)

Analysis of Alternating-priority Queueing Models with (Cross) Correlated Switchover Times

Robin Groenevelt, Eitan Altman
(INRIA, France)

Technical Program

[THURSDAY, 17TH MARCH 2005]

Session	Performance Analysis in Multihop Wireless Networks
Chair	Hao Zhu, *Florida International University*
Room	
Time	*3:30 P.M. to 5:30 P.M.*

Time and Energy Complexity of Distributed Computation in Wireless Sensor Networks

Nilesh Khude, Anurag Kumar (Indian Institute of Science, India), Aditya Karnik (Tata Institute of Fundamental Research, India)

Achieving Minimum Coverage Breach under Bandwidth Constraints in Wireless Sensor Networks

Maggie Cheng (University of Missouri, USA), Lu Ruan (Iowa State University, USA), Weili Wu (University of Texas, Dallas, USA)

Probabilistic QoS Guarantee in Reliability and Timeliness Domains in Wireless Sensor Networks

Emad Felemban, Chang-Gun Lee, Eylem Ekici, Ryan Boder, Serdar Vural (The Ohio State University, USA)

Minimum-Color Path Problems for Reliability in Mesh Networks

Shengli Yuan (University of Houston, USA), Saket Varma, Jason Jue (University of Texas, Dallas, USA)

Information Theoretic Bounds on the Throughput Scaling of Wireless Relay Networks

Olivier Dousse (Swiss Federal Institute of Technology (EPFL), Switzerland), Massimo Franceschetti (University of California, Berkeley, USA), Patrick Thiran (Swiss Federal Institute of Technology (EPFL), Switzerland)

Session	Resource Management and QoS – II
Chair	Payman Arabshahi, *Jet Propulsion Laboratory*
Room	
Time	*3:30 P.M. to 5:00 P.M.*

Distributed Rate Allocation for Inelastic Flows: Optimization Frameworks, Optimality Conditions, and Optimal Algorithms

Mung Chiang, Shengyu Zhang, Prashanth Hande (Princeton University, USA)

Capacity Allocation and Routing of Locally Restorable Bandwidth Guaranteed Connections

Randeep Bhatia, M. Kodialam, T. V. Lakshman (Bell Labs, Lucent Technologies, USA), Sudipta Sengupta (Massachusetts Institute of Technology, USA)

Linear Time Construction of Redundant Trees for Recovery Schemes Enhancing QoP and QoS

Weiyi Zhang, Guoliang Xue, Jian Tang (Arizona State University, USA), Krishnaiyan Thulasiraman (University of Oklahoma)

Session	Performance of Wireless Networks
Chair	Kamal Abdali, *National Science Foundation*
Room	
Time	*3:30 P.M. to 5:30 P.M.*

Compact Neighbor Discovery: A Bandwidth Defense through Bandwidth Optimization

Mutaf Pars, Claude Castelluccia (INRIA, France)

A Delay Analysis for Opportunistic Transmission in Fading Broadcast Channels

Masoud Sharif, Babak Hassibi (California Institute of Technology, USA)

MINT: A Miniaturized Network Testbed for Mobile Wireless Research

Pradipta De, Ashish Raniwala, Srikant Sharma, Tzi-Cker Chiueh (State University of New York, Stony Brook, USA)

Perfect Simulation and Stationarity of a Class of Mobility Models

Jean-Yves Le Boudec (Swiss Federal Institute of Technology (EPFL), Switzerland), Milan Vojnovic (Microsoft Research, United Kingdom)

A Continuum Approach to Dense Wireless Networks with Cooperation

Birsen Sirkeci, Anna Scaglione (Cornell University, USA)