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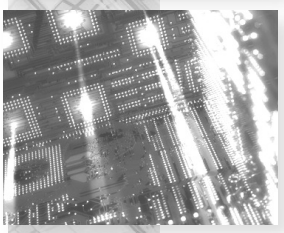
30TH IEEE INTERNATIONAL PERFORMANCE, COMPUTING AND COMMUNICATIONS CONFERENCE

PROGRAM GUIDE



IEEE IPCCC 2011

ORLANDO, FLORIDA, USA

NOVEMBER 17-19, 2011

THE INTERNATIONAL PERFORMANCE, COMPUTING, AND COMMUNICATIONS CONFERENCE IS THE PREMIER IEEE CONFERENCE PRESENTING RESEARCH IN THE PERFORMANCE OF COMPUTER AND COMMUNICATION SYSTEMS.

FOR MORE THAN THREE DECADES, IPCCC HAS BEEN A RESEARCH FORUM FOR ACADEMIC, INDUSTRIAL AND GOVERNMENT RESEARCHERS.

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Message from the General Chair

I am very excited to welcome you to the 2011 IEEE International Performance, Computing, and Communications Conference (IPCCC 2011). This is the 30-year anniversary of this premium conference on performance, computers, and communications. I am extremely happy to celebrate it with all of you.

IPCCC 2011 consists of two keynote talks, both by distinguished researchers, a main conference with two parallel tracks, a poster session, and a workshop. I would like to thank our distinguished keynote speakers, our excellent technical program co-chairs and technical program committee members, our hardworking organizing committee members for all their hard work for the conference. Without them, it would not be possible to have IPCCC 2011.

Finally, I am very happy to enjoy the new conference venue this year: Orlando. I hope you will find our conference as nice as this fantastic city.

Sheng Zhong,
General Chair, IPCCC 2011

Message from the Technical Program Co-chairs

Welcome to the 30th IEEE International Performance, Computing and Communications Conference (IPCCC 2011). On behalf of the technical program committee, we would like to thank all the authors for the high-quality papers that are accepted by the IPCCC main conference and by the workshop held in conjunction with the conference.

This year, IPCCC 2011 received 129 paper submissions, out of which 35 were selected for publication as regular papers with an acceptance rate of 27.1 percent. Another 10 submissions were selected for publication as short papers. Most submissions received three or more peer reviews from our technical program committee and external reviewers. We were only able to accept papers that received broad support from the reviewers. The final technical program includes 2 keynotes, 13 technical sessions (2 of them from HotWiSec workshop) and 1 poster session. We would like to thank our program committee members as well as external reviewers, consisting of high visibility researchers, whose dedication and hard work made the selection of papers for the proceedings possible.

We wish to thank all who contributed to the quality and success of IPCCC 2011. We particularly appreciate the guidance and support from General Chair Prof. Sheng Zhong and Vice General Chairs Prof. Steven Ko and Prof. Chengkai Li. We also thank Publications Chair Prof. Song Fu, Publicity Chair Prof. Liehuang Zhu, Web Chair Neil Nelson, Financial Chair Nasr Ullah, Registration Chair Jack Chen, Workshop Chairs Prof. Tingting Chen and Prof. Murtuza Jadliwala, and Poster Chair Prof. Fan Wu.

We once again welcome you all to IPCCC 2011. We hope you enjoy the technical program and have a great time in Orlando.

Dejing Dou and Yu Wang,
Technical Program Co-chairs,
IEEE IPCCC 2011

Program Guide Contents

The Florida Hotel & Conference Center at the Florida Mall

1500 Sand Lake Road
Orlando, Florida 32809, USA
Toll-free: 800-588-4656
Local: 407-859-1500
Fax: 407-866-9863
More details about the hotel can be found at their website: thefloridahotelorlando.com/

Located at The Florida Mall, the 511 room Florida Hotel and Conference Center offers amenities not available at most hotels – including in-room spa treatments, and a Starbucks in the lobby. Located just minutes from the Orlando International Airport, the Orange County Convention Center, and Walt Disney World Resort.

IPCCC 2011

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IPCCC 2012

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IPCCC Schedule, Thursday, November 17, 2011

Registration: 8:30 a.m. & Welcome Message: 9 - 9:10 a.m., Salon I

Keynote Address I: 9:10 - 10:10 a.m.

A Few Selected Research Issues in Wireless Network Modeling, Analysis and Design, Professor Yuguang "Michael" Fang, University of Florida, IEEE Fellow

Break – 10:10 - 10:30 a.m.

Session 1A / 1B: 10:30 a.m. - 12:10 p.m.

Session 1A: Wireless Networks I
Chair: Bo Sheng (University of Massachusetts Boston, USA)

Multi-Rate Adaptation with Interference and Congestion Awareness
Duy D Nguyen, J.J. Garcia-Luna-Aceves (University of California at Santa Cruz, USA); Cedric Westphal (Docomo Labs USA, USA)

Performance Modeling of Energy Efficient Wireless Nodes
Agnieszka Lezanska, Muhammad Hayat (Technical University Vienna, Austria)

JRCA: A Joint Routing and Channel Assignment Scheme for Wireless Mesh Networks
Amitangshu Pal, Asis Nasipuri (University of North Carolina at Charlotte, USA)

Session 1B: Cloud Computing and Parallel Systems
Chair: Qishi Wu (University of Memphis, USA)

ARA: Adaptive Resource Allocation for Cloud Computing Environments under Bursty Workloads
Jianzhe Tai, Juemin Zhang, Jun Li, Waleed Meleis, Ningfang Mi (Northeastern University, USA)

Macropower: A Coarse-Grain Power Profiling Framework for Energy-Efficient Cloud Computing
Ziming Zhang, Song Fu (University of North Texas, USA)

Enhancing I/O Throughput via Efficient Routing and Placement for Large-scale Parallel File Systems
David Dillow, Galen Shipman, Sarp Oral (Oak Ridge National Lab, USA); Zhe Zhang (IBM T. J. Watson Research Center, USA); Youngjae Kim (Oak Ridge National Lab., USA)

A Distributed Workflow Management System with Case Study of Real-life Scientific Applications
Qishi Wu (University of Memphis, USA); Mengxia Zhu (Southern Illinois University Carbondale, USA); Yi Gu (University of Tennessee at Martin, USA); Xukang Lu (University of Memphis, USA); Patrick Brown (Southern Illinois University, USA); Michael Reuter, Stephen Miller (Oak Ridge National Lab., USA)

Lunch: Salon 3, Noon - 1:30 p.m.

Session 2A / 2B: 1:30 - 3:10 p.m.

Session 2A: Sensor Networks I
Chair: Yu Wang (University of North Carolina at Charlotte, USA)

Minimum Latency Scheduling for Multi-Regional Query in Wireless Sensor Networks
Mingyuan Yan, Jing (Selena) He, Shouling Ji, Yingshu Li (Georgia State University, USA)

A Simple Myopic Mobile Sink Strategy for Wireless Sensor Networks
Young-Hun Kim, Keon-Taek Lee, Semin Sim, Seung-Jae Han (Yonsei University, Korea)

Web-based Heterogeneous WSN Integration using Pervasive Communication*
Mihaela Cardei, Anthony M Marcus, Ionut Cardei, Timur Tavtilov (Florida Atlantic University, USA)

An Energy Efficient and Integrity-Preserving Aggregation Protocol in Wireless Sensor Networks*
Liehuang Zhu, Meng Li (Beijing Institute of Technology, China)

Session 2B: Computer Systems
Chair: Xiao Qin (Auburn University, USA)

Network Coding in Multicore Processors
Thuan Duong-Ba, Thinh Nguyen, Patrick Chiang (Oregon State University, USA)

Reliability Analysis of An Energy-Aware RAID System
Shu Yin, Yun Tian, Jiong Xie, Xiao Qin (Auburn University, USA), Mohammed Alghamdi (Al-Baha University, Kingdom of Saudi Arabia), Xiaojun Ruan (West Chester University of Pennsylvania, USA), Meikang Qiu (University of Kentucky, USA)

Energy-Efficient Elastic Scheduling in Heterogeneous Computing Systems
Xiaomin Zhu, Chuan He, Jianjiang Wang (National University of Defense Technology, China)

Explicit Moving Particle Semi-implicit method on GPU clusters*
Denis Taniguchi, Liria Sato (University of Sao Paulo, Brazil)

Break: 3:10 - 3:30 p.m.

Session 3A / 3B: 3:30 - 5:30 p.m.

Session 3A: Internet
Chair: Dejing Dou (University of Oregon, USA)

A Subscription Overlay Network for Large-scale and Cost-efficient Any Source Multicast
Patricio Galdames (Iowa State University, USA); Qinghua Zheng (Xi'an Jiaotong University, China); Ying Cai (Iowa State University, USA)

Subnet Level Network Topology Mapping
Mehmet Engin Tozal, Kamil Sarac (University of Texas at Dallas, USA)

Using Spikes to Deal with Elephants
Dinil Mon Divakaran (IIT Mandi, India)

An Efficient SVM-based Method for Multi-Class Network Traffic Classification
Ning Jing, Ming Yang, Shaoyin Cheng, Qunfeng Dong (University of Science and Technology of China, China); Hui Xiong (Rutgers University, USA)

Session 3B: Fundamental Theory
Chair: Aleksi Penttinen (Aalto University, Finland)

Dynamic Data Allocation with Replication in Distributed Systems
Shahin Kamali, Pedram Ghodsnia, Khuzaima Daudjee (University of Waterloo, Canada)

Optimizing Energy Consumption Under Flow and Stretch Constraints
Zhi Zhang,Fei Li (George Mason University, USA)

Energy-aware Dispatching in Parallel Queues with On-Off Energy Consumption
Aleksi Penttinen, Esa HyytiŠ, Samuli Aalto (Aalto University, Finland)

Using Hidden Convexity in Structured Communication Problems
Tharwat Morsy (Dortmund University of Technology, Germany); JŸrgen Gštze (TU Dortmund University, Germany); Hamed Nassar (Suez Canal University, Egypt)

*Short Papers

IPCCC Schedule, Friday, November 18, 2011

Registration: 8:30 a.m., Salon I

Keynote Address II: 9 - 10 a.m.

Social-aware Data Dissemination in Opportunistic Mobile Networks

Professor Guohong Cao, Pennsylvania State University, IEEE Fellow

Break – 10 - 10:20 a.m.

Session 4A / 4B: 10:20 a.m. - 12:10 p.m.

Session 4A: Wireless Networks II
Chair: Asis Nasipuri (University of North Carolina at Charlotte, USA)

Fuzzy-based Adaptive Cross Layer Routing Protocol for Mobile Ad hoc Networks
Cherine Fathy (Arab Academy for Science and Technology and Maritime Transport, Egypt); Mahmoud T El-Hadidi (Cairo University, Egypt); Mohamad Abou El-Nasr (Arab Academy for Science and Technology, Egypt)

Generalized Broadcast Scheduling in Duty-Cycle Multi-Hop Wireless Networks*
Yueming Duan, Shouling Ji, Zhipeng Cai (Georgia State University, USA)

Cooperative Optimal Pricing for Stochastic Access Control in Heterogeneous Wireless Networks*
Haoran Zhang, Liusheng Huang, Hongli Xu (University of Science and Technology of China, China)

A Case for Packet Deflection in Structured Wireless Topologies*
Maulik Desai, Nick Maxemchuk (Columbia University, USA)

Session 4B: P2P and Streaming Systems
Chair: Mea Wang (University of Calgary, Canada)

How P2P Live Streaming Systems Scale Quickly Under a Flash Crowd?
Haibo Wu, Hai Jiang (Institute of Computing Technology, Chinese Academy of Sciences, China); Jing Liu (Inner Mongolia University, China); Yi Sun, Jun Li, Zhongcheng Li (Institute of Computing Technology, Chinese Academy of Sciences, China)

Adaptive Neighbor Management for Cooperative P2P Video-on-Demand Streaming
Jung Ki So, Douglas Reeves (North Carolina State University, USA)

Can P2P Help the Cloud Go Green?
Christopher Jarabek, Mea Wang (University of Calgary, Canada)

Fulfilling End-to-End Latency Constraints in Large-scale Streaming Environments
Stamatia Rizou, Frank DŸrr, Kurt Rothermel (University of Stuttgart, Germany)

Lunch: Salon 3, 12:10 - 2 p.m.

Session 5A / 5B: 2 - 4 p.m.

Session 5A: Sensor Networks II
Chair: Abdelmajid Khelil (Technical University of Darmstadt, Germany)

Joint Routing, Scheduling and Channel Assignment in Multi-Power Multi-Radio Wireless Sensor Networks
Jinbao Li, Xiaohang Guo (Heilongjiang University, China); Longjiang Guo (Georgia State University, USA)

Integrated Load Balanced and Energy Aware Routing In Large Scale Wireless Sensor Networks
Siddharth Kamath, Asis Nasipuri (University of North Carolina at Charlotte, USA)

Energy Modeling and Optimization through Joint Packet Size Analysis of BSN and WiFi Networks
Yantao Li, Xin Qi, Zhen Ren, Gang Zhou (College of William and Mary, USA); Di Xiao, Shaojiang Deng (Chongqing University, China)

Assessing the Comparative Effectiveness of Map Construction Protocols in Wireless Sensor Networks*
Abdelmajid Khelil, Hanbin Chang, Neeraj Suri (Technical University of Darmstadt, Germany)

Session 5B: Security
Chair: Yi Gu (University of Tennessee at Martin, USA)

Making Eclipse Attacks Computational Infeasible in Large-Scale DHTs
Ren Zhang, Jianyu Zhang, Yu Chen, Nanhao Qin, Bingshuang Liu, Yuan Zhang (Peking University, China)

Resource-Misuse Attack Detection in Delay-Tolerant Networks
Vivek Natarajan (Pennsylvania State University, USA); Yi Yang (Catholic University of America, USA); Sencun Zhu (Pennsylvania State University, USA)

DoS Resilience of Real Time Streaming Protocol
Nihat Altiparmak, Ali Tekeoglu, Ali Saman Tosun (University of Texas at San Antonio, USA)

Non-interactive OS Fingerprinting through Memory De-duplication Technique in Virtual Machines
Rodney Owens, Weichao Wang (University of North Carolina at Charlotte, USA)

Break: 4 - 4:30 p.m.

Reception and Poster Session: Salon 3, 4:30 - 6:30 p.m.

Poster Session
Chair: Tingting Chen (Oklahoma State University, USA)

Power and Energy Consumption Analysis on Intel SCC Many-Core System **–** Pollawat Thanarungroj, Chen Liu (Florida International University, USA)

A SOA-based Framework for Cross-layer QoS Adaptation in Next Generation Networks **–** Gordana Gardasevic (Faculty of EE, Bosnia and Herzegovina), Dejan Stjepanovic (City Administration of Banjaluka, Bosnia and Herzegovina), Aleksandar Damljanovic (LANACO IT, Bosnia and Herzegovina), Dejan Cvijanovic (Faculty of EE, Bosnia and Herzegovina)

QoS Assurance in MANETs Using Flow Aware Admission Control-Multipath Protocol **–** Muhammad Asif, Zhili Sun, Haitham Cruickshank, Naveed Ahmad (University of Surrey, United Kingdom)

Evaluation of Process Level Redundant Checkpointing/Restart for HPC Systems **–** Ifeanyi Egwutuoha, David Levy (University of Sydney, Australia), Bran Selic (Malina Software Corp., Canada)

GNAED: A Data Mining Framework for Network-wide Abnormal Event Detection in Backbone Networks **–** Yingjie Zhou, Guangmin Hu (University of Electronic Science and Technology of China, China)

Underlay-Robust Application Layer Multicast **–** Mathias Fischer (Ilmenau University of Technology, Germany), Sebastian Delling (Computer Networks, Network Security, Germany), Sascha Grau, Guenter Schaefer (Technische Universitaet Ilmenau, Germany)

VM Clock Synchronization Measurements **–** Jagmohan Chauhan, Dwight Makaroff, Anthony Arkles (University of Saskatchewan, Canada)

A QoS based Handover Decision (Nearest Performance Handover) Algorithm for Next Generation Networks **–** Fazal Karam (Norwegian University of Science and Technology, Norway), Terje Jensen (Telenor, Norway)

Adaptation-Based Programming for Network Protocol Design: An 802.11x Case Study **–** Pingan Zhu, Jervis Pinto, Alan Fern, Thinh Nguyen (Oregon State University, USA)

CUDA Acceleration of P7Viterbi Algorithm in HMMER 3.0 **–** Saddam Quirem, Fahian Ahmed, Byeong Kil Lee (University of Texas at San Antonio, USA)

Real Time Video QoE Analysis of RTMP Streams – Holly French, Jie Lin, Tung Phan, Amy Csizmar Dalal (Carleton College, USA)

*Short Papers

IPCCC Schedule, Saturday, November 19, 2011

Registration: Salon 1, 8:30 a.m.

Session 6 / Workshop 1: 9 - 10:30 a.m.

Session 6: High Performance Computing
Chair: Ningfang Mi (Northeastern University, USA)

Mesh Traversal and Sorting for Efficient Memory Usage in Scientific Codes
Pablo Barrio, Carlos Carreras (Universidad Politecnica de Madrid, ES)

Service Curve Based Memory Access Scheduling for High-Performance Multimedia SoC
Guangfei Zhang, Menghao Su, Wenxiang Wang, Xinke Chen (Institute of Computing, China)

A Merge-and-Split Mechanism for Dynamic Virtual Organization Formation in Grids
Lena Mashayekhy, Daniel Grosu (Wayne State University, USA)

Workshop Session 1: HotWiSec I
Chair: Tingting Chen (Oklahoma State University, USA)

Improving Location Privacy in Mix-Zones for VANETs
Antonio M. Carianha, Luciano Porto Barreto, George Lima (Federal University of Bahia, Brazil)

The Cost of Location Privacy in Locator/Identifier-Split Architectures
Oliver Hanka (Technische UniversitŠt MŸnchen, Germany)

Cryptanalysis and Security Enhancement of an Advanced Authentication Scheme using Smart Cards, and a Key Agreement Scheme for Two-Party Communication
Swapnoneel Roy, Amlan K Das and Yu Li (State University of New York at Buffalo, USA)

Break – 10:30 - 10:45 a.m.

Session 7 / Workshop 2: 10:45 a.m. - 12:30 p.m.

Session 7: Wireless Networks III
Chair: Baljeet Malhotra (National University of Singapore, Singapore)

Biased Shortest Path Trees in Wireless Networks*
Baljeet Malhotra (National University of Singapore, Singapore); Ioanis Nikolaidis, Mario A Nascimento (University of Alberta, Canada); Stephane Bressan (National University of Singapore, Singapore)

DAT: An AP Scheduler using Dynamically Adjusted Time Windows for Crowded WLANs*
Yi Yao (Northeastern University, USA); Bo Sheng (University of Massachusetts Boston, USA); Ningfang Mi (Northeastern University, USA)

Performance and Power-Consumption Analysis of Mobile Internet Devices*
Joseph Issa, Silvia Figueira (Santa Clara University, USA)

Workshop Session 2: HotWiSec II
Chair: Tingting Chen (Oklahoma State University, USA)

Best-Effort Authentication for Opportunistic Networks
John Solis (Sandia National Labs, USA), Philip Ginzboorg, N. Asokan (Nokia Research Center, Finland), Jšrg Ott (Aalto University, Finland)

Design and Implementation of Data Survival in Unattended Wireless Sensor Networks
Mateus A. S. Santos, C'ntia Borges Margi (Escola PolitŽcnica da Universidade de Sao Paulo, Brazil)

A Reputation System for Wireless Mesh Network Using Multi-path Routing Protocol
Yu Li (State University of New York at Buffalo, USA)

Efficient Java Implementation of Elliptic Curve Cryptography for Mobile Devices
Johann Gro§schŠdl (University of Luxembourg, Luxemburg)

*Short Papers

END OF IPCCC PROGRAM SCHEDULE

2011 Workshop Information

HotWiSec 2011: The 2011 International Workshop on Hot Topics on Wireless Network Security and Privacy in Conjunction with IEEE IPCCC 2011

In the last few years, wireless networks have experienced an explosive growth. The advanced wireless network technologies have been widely adopted in a broad spectrum of applications, including electronic healthcare systems, pervasive communications, vehicular networks, mobile wireless peer-to-peer networks, among many others. The security and privacy issue is a central concern to guarantee the functions and performance of such important wireless network applications. This workshop aims to bring together researchers and practitioners from the communities of wireless networking, security, data privacy and cryptography, to promote discussions and research on hot new topics in these areas and out-of-the-box ideas that can generate a discussion and controversy. We are interested in novel and exciting research on all aspects of security and privacy in wireless networks.

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Shambhu Upadhyaya
University at Buffalo, USA

Lifang Wu
Beijing University of Technology, PRC

Lei Yu
Clemson University, USA

THURSDAY , NOVEMBER 17
9:10 - 10:10 A.M.

A FEW SELECTED RESEARCH ISSUES IN WIRELESS NETWORK MODELING, ANALYSIS AND DESIGN

PROFESSOR YUGUANG "MICHAEL" FANG, UNIVERSITY OF FLORIDA, IEEE FELLOW

Abstract:

Wireless and mobile networks have gone a long way to offer the convenience we have enjoyed today. Obviously, performance optimization and design have played a significant role. As we observe, tremendous efforts have been made in developing viable analytical or simulation tools in assessing the network performance, ranging from coverage, connectivity and capacity to service/performance optimization and resource efficiency. Yet, more than often, there exists a tremendous gap between the theory and practice in performance modeling and optimization. In this talk, the speaker will select a few research problems to discuss such mismatch and highlight some research challenges ahead in wireless networking research.

Speaker's Biography:

Yuguang "Michael" Fang (F'08) received a Ph.D. degree in Systems Engineering from Case Western Reserve University in January 1994 and a Ph.D. degree in Electrical Engineering from Boston University in May 1997. He was an assistant professor in the Department of Electrical and Computer Engineering at New Jersey Institute of Technology from July 1998 to May 2000. He then joined the Department of Electrical and Computer Engineering at University of Florida in May 2000 as an assistant professor, got an early promotion to an associate professor with tenure in August 2003 and to a full professor in August 2005. He holds a University of Florida Research Foundation (UFRF) Professorship from 2006 to 2009, a Changjiang Scholar Chair Professorship with Xidian University, Xi'an, China, from 2008 to 2011, and a Guest Chair Professorship with Tsinghua University, China, from 2009 to 2012. He has published over 300 papers in refereed professional journals and conferences. Dr. Fang received the National Science Foundation Faculty Early Career Award in 2001 and the Office of Naval Research Young Investigator Award in 2002, and is the recipient of the Best Paper Award in IEEE International Conference on Network Protocols (ICNP) in 2006 and the recipient of the IEEE TCGN Best Paper Award in the IEEE High-Speed Networks Symposium, IEEE Globecom in 2002. He has also received 2011 Florida Blue Key/UF Homecoming Celebration of Education Distinguished Faculty Award, the 2010-2011 UF Doctoral Dissertation Advisor/Mentoring Award and the 2009 UF College of Engineering Faculty Mentoring Award.

Dr. Fang is also active in professional activities. He is a Fellow of IEEE and a member of ACM. He is currently serving as the Editor-in-Chief for IEEE Wireless Communications (2009-present) and serves/served on several editorial boards of technical journals including IEEE Transactions on Mobile Computing (2003-2008, 2011-present), IEEE Transactions on Communications (2000-present), IEEE Transactions on Wireless Communications (2002-2009), IEEE Journal on Selected Areas in Communications (1999-2001), IEEE Wireless Communications Magazine (2003-2009) and ACM Wireless Networks (2001-present). He served on the Steering Committee for IEEE Transactions on Mobile Computing (2008-2010). He has been actively participating in professional conference organizations such as serving as the Technical Program Co-Chair for IEEE INOFOCOM'2014, the Steering Committee Co-Chair for QShine (2004-2008), the Technical Program Vice-Chair for IEEE INFOCOM'2005, the Technical Program Area Chair for IEEE INFOCOM (2009-2012), Technical Program Symposium Co-Chair for IEEE Globecom'2004, and a member of Technical Program Committee for IEEE INFOCOM (1998, 2000, 2003-2008).

FRIDAY , NOVEMBER 18
9 - 10 A.M.

SOCIAL-AWARE DATA DISSEMINATION IN OPPORTUNISTIC MOBILE NETWORKS

PROFESSOR GUOHONG CAO, PENNSYLVANIA STATE UNIVERSITY, IEEE FELLOW

Abstract:

In opportunistic mobile networks, mobile devices communicate with each other through opportunistic contacts; i.e., moving into the communication range of each other. The major advantage of opportunistic mobile network is that it does not rely on any infrastructure, and thus it is widely used in battlefield, disaster recovery, environmental monitoring, inter-vehicle communication, etc. Due to the low node density and unpredictable node mobility, the network topology is highly dynamic and end-to-end connections are hard to maintain.

To deal with these problems, researchers adopt the idea of carry and forward, where nodes carry the data packet when routes do not exist, and forward the packet to a relay that moves into its vicinity. Then, the key problem for data access/dissemination becomes how to determine the appropriate relay selection strategy, and many researchers design different metrics for choosing the relays. In this keynote, I will talk about the challenges and solutions of applying social network concepts to data dissemination, and how to exploit social contact patters, social interest and social relationship to improve the performance of data dissemination.

Speaker's Biography:

Guohong Cao received a Bachelor of Science degree from Xian Jiaotong University, China. He received the Master of Science degree and Ph.D. degree in computer science from Ohio State University in 1997 and 1999 respectively. Since then he has been with the Department of Computer Science and Engineering at Pennsylvania State University, where he is currently a professor. His research interests are wireless networks and mobile computing.

Professor Guohong has published more than 150 papers in the areas of cache management, data access and dissemination, wireless sensor networks, wireless network security, vehicular ad hoc networks and distributed fault tolerant computing. He has served on the editorial board of IEEE Transactions on Mobile Computing, IEEE Transactions on Wireless Communications, IEEE Transactions on Vehicular Technology, and has served on the organizing and technical program committees of many conferences. He was a recipient of the NSF CAREER award in 2001. He is a Fellow of the IEEE.

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