

Baochun Li

- PRESENT APPOINTMENT Professor
Edward S. Rogers Sr. Department of Electrical and Computer Engineering
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Web: www.eecg.toronto.edu/~bli
- PERSONAL INFORMATION *Citizenship* Canadian
- RESEARCH INTERESTS Large-scale multimedia systems, peer-to-peer networks, applications of network coding, and wireless networks.
- EDUCATION **University of Illinois at Urbana-Champaign**, Urbana, Illinois, USA
Department of Computer Science
- ◇ **Ph.D.**, Computer Science, May 2000
 - ▷ *Dissertation:* "Agilos: A Middleware Control Architecture for Application-Aware Quality of Service Adaptations"
 - ▷ *Advisor:* Klara Nahrstedt, Department of Computer Science
 - ▷ *Thesis Committee:* Vaduvur Bharghavan (ECE), Geneva Belford (Computer Science), Roy H. Campbell (Computer Science)
 - ◇ **M.Sc.**, Computer Science, May 1997
 - ▷ *Dissertation:* "Adaptive Behavior of Quality of Service in Distributed Multimedia Systems"
 - ▷ *Advisor:* Klara Nahrstedt, Department of Computer Science
- Tsinghua University**, Beijing, People's Republic of China
Department of Computer Science and Technology
- ◇ **B.Engr.**, Computer Science and Technology, July 1995
- HONOURS AND AWARDS
- ◇ *Bell University Laboratories Endowed Chair in Computer Engineering*, University of Toronto, August 2005 — present.
 - ◇ *Nortel Networks Junior Chair in Network Architecture and Services*, University of Toronto, October 2003 – June 2005.
 - ◇ *The University of Toronto TechKnowFile Award*, for "outstanding achievement for an application or service," in recognition of the on-line graduate admissions system used in the Faculty of Applied Science and Engineering, May 2007.
 - ◇ *Inaugural winner, ECE Departmental Service Award*, for exemplary service in the development of mission-critical software for graduate admission and undergraduate

course selection, University of Toronto, May 2006.

- ◇ *2009 Multimedia Communications Best Paper Award*, the Multimedia Communications Technical Committee, IEEE Communications Society, 2009
 - ▷ For the paper co-authored with Mea Wang, titled “ R^2 : Random Push with Random Network Coding in Live Peer-to-Peer Streaming,” published in the IEEE Journal on Selected Areas in Communications, Special Issue on Advances in Peer-to-Peer Streaming Systems, vol. 25, no. 9, pp. 1655-1666, December 2007.
- ◇ *Best Student Paper Award*, the Thirteenth International Workshop on Quality of Service (IWQoS 2005)
 - ▷ For the paper co-authored with Ying Zhu, titled “Overlay Networks with Linear Capacity Constraints,” published in the Proceedings of the Thirteenth International Workshop on Quality of Service (IWQoS 2005), also Lecture Notes in Computer Science, Springer, vol. 3552, pp. 21-36, H. de Meer, N. Bhatti (Eds.), Passau, Germany, June 21 – 23, 2005.
- ◇ *Leonard G. Abraham Prize Paper Award in the Field of Communications Systems*, The IEEE Communications Society, June 2000
 - ▷ For the paper co-authored with Klara Nahrstedt, titled “A Control-Based Middleware Framework for Quality-of-Service Adaptations,” published in the IEEE Journal on Selected Areas in Communications, vol. 17, no. 9, pp. 1632-1650, September 1999.
- ◇ *Outstanding Teaching Assistant Award*, Department of Computer Science, University of Illinois at Urbana-Champaign, November 1999.

PROFESSIONAL
EXPERIENCE

University of Toronto, Edward S. Rogers Sr. Department of Electrical and Computer Engineering, Toronto, Ontario, Canada

Full Professor (with tenure) **July 2008 – present**

Associate Professor (with tenure) **July 2005 – June 2008**

Date of promotion and tenure: July 1, 2005

Assistant Professor (tenure-track) **July 2000 – June 2005**

Microsoft Research, Redmond, Washington, USA

Consulting Researcher **August 2007**

Visiting Researcher **September 2006 — October 2006**

Hong Kong Polytechnic University, Hong Kong, P. R. China

Visiting Associate Professor **May 2006**

University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

Ph.D. Candidate

May 1997 – May 2000

The research objective of my dissertation is to explore the theoretical and practical aspects of middleware support for application-aware Quality-of-Service (QoS) adaptations, and to evaluate the proposed algorithms with the implementation of *OmniTrack*, an omni-directional distributed visual tracking application.

Teaching Assistant

May 1999 – August 1999

- ◇ *CS 314: Multimedia Systems Design*, Department of Computer Science, University of Illinois at Urbana-Champaign
 - ▷ Duties involved teaching a class of students in India, using distance learning technologies such as instant messaging. Designed and implemented the solutions of the *Multimedia Streaming and Playback* project, built in Visual C++ on Windows NT, illustrating various techniques such as DirectDraw and Windows socket programming.

Teaching Assistant

September 1996 – May 1997

- ◇ *CS 397kn: Multimedia Systems Design*, Department of Computer Science, University of Illinois at Urbana-Champaign
 - ▷ Duties include the design and solution implementation of the Multimedia Electronic Mail System Project, written in C++ and Java, on SGI and HP workstations.
- ◇ *CS 323: Operating Systems Design*, Department of Computer Science, University of Illinois at Urbana-Champaign
 - ▷ Duties include implementing the solutions for the course programming assignments, which focused on major modifications to enrich the functionalities of the *Nachos* operating system from University of California at Berkeley.

Research Assistant

August 1995 – May 1996

- ◇ *Research topic: SvPablo: a Graphical Source Browser and Performance Visualizer for High-Performance Fortran*
- ◇ *Research group: Pablo Research Group, Professor Daniel Reed, Department of Computer Science, University of Illinois at Urbana-Champaign*
- ◇ *Main contributions: The design and implementation of the SvPablo user interface in Motif.*

SCHOLARLY	Best Paper Awards	3	
RESEARCH	Refereed Publications in Journals	32	
ACHIEVEMENTS	Refereed Publications in Magazines	1	
AT A GLANCE	Refereed Publications in Book Chapters	3	
	Refereed Publications in Conference Proceedings	113	
	Invited Publications in Conference Proceedings	8	
	Dissertations	2	
	Total of Publications in Academic Career (January 1998 – present)		157

[J32] Ying Zhu, Baochun Li, Ken Q. Pu. "Dynamic Multicast in Overlay Networks with Linear Capacity Constraints," in *IEEE Transactions on Parallel and Distributed Systems*, vol. 20, no. 7, pp. 925-939, July 2009.

[J31] Xinyu Zhang, Baochun Li. "Optimized Multipath Network Coding in Lossy Wireless Networks," to appear in *IEEE Journal on Selected Areas in Communications*, Special Issue on Network Coding for Wireless Communication Networks, Second Quarter, 2009.

[J30] Yunfeng Lin, Ben Liang, Baochun Li. "Priority Random Linear Codes in Distributed Storage Systems," to appear in *IEEE Transactions on Parallel and Distributed Systems*, 2009.

[J29] Zongpeng Li, Baochun Li, Lap Chi Lau. "A Constant Bound on Throughput Improvement of Multicast Network Coding in Undirected Networks," in *IEEE Transactions on Information Theory*, vol. 55, no. 3, pp. 1016-1026, March 2009.

[J28] Chuan Wu, Baochun Li, Zongpeng Li. "Dynamic Bandwidth Auctions in Multi-overlay P2P Streaming with Network Coding," in *IEEE Transactions on Parallel and Distributed Systems*, vol. 19, no. 6, pp. 806-820, June 2008.

[J27] Yunfeng Lin, Baochun Li, and Ben Liang. "Stochastic Analysis of Network Coding in Epidemic Routing," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Delay and Disruption Tolerant Wireless Communication Systems, vol. 26, no. 5, pp. 794-808, June 2008.

[J26] Chuan Wu, Baochun Li, Shuqiao Zhao. "Exploring Large-Scale Peer-to-Peer Live Streaming Topologies," in *ACM Transactions on Multimedia Computing, Communications and Applications*, vol. 4, no. 3, article 19, August 2008.

[J25] Ying Zhu, Baochun Li. "Overlay Networks with Linear Capacity Constraints," in *IEEE Transactions on Parallel and Distributed Systems*, vol. 19, no. 2, pp. 159-173, February 2008.

[J24] Chuan Wu, Baochun Li. "rStream: Resilient and Optimal Peer-to-Peer Streaming with Rateless Codes," in *IEEE Transactions on Parallel and Distributed Systems*, vol. 19, no. 1, pp. 77-92, January 2008.

[J23] Kevin Yuen, Ben Liang, Baochun Li. "A Distributed Framework for Correlated Data Gathering in Sensor Networks," in *IEEE Transactions on Vehicular Technology*, vol. 57, no. 1, pp. 578-593, January 2008.

[J22] Mea Wang, Baochun Li. " R^2 : Random Push with Random Network Coding in Live Peer-to-Peer Streaming," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Advances in Peer-to-Peer Streaming Systems, vol. 25, no. 9, pp. 1655-1666, December 2007. (This paper received the Best Paper Award of the Multimedia Communications Technical Committee in the IEEE Communications Society.)

[J21] Chuan Wu, Baochun Li, Shuqiao Zhao. "Characterizing Peer-to-Peer Streaming Flows," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Advances in Peer-to-Peer Streaming Systems, vol. 25, no. 9, pp. 1612-1626, December 2007.

[J20] Mea Wang, Baochun Li. "Network Coding in Live Peer-to-Peer Streaming," in *IEEE Transactions on Multimedia*, Special Issue on Content Storage and Delivery in Peer-to-Peer Networks, vol. 9, no. 8, pp. 1554-1567, December 2007.

[J19] Chuan Wu, Baochun Li. "Diverse: Application-Layer Service Differentiation in Peer-to-Peer Communications," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Peer-to-Peer Communications and Applications, vol. 25, no. 1, pp. 222-234, January 2007.

[J18] Tara Small, Baochun Li, Ben Liang. "Outreach: Peer-to-Peer Topology Construction towards Minimized Server Bandwidth Costs," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Peer-to-Peer Communications and Applications, vol. 25, no. 1, pp. 35-45, January 2007.

[J17] Jun Yuan, Zongpeng Li, Wei Yu, Baochun Li. "A Cross-Layer Optimization Framework for Multihop Multicast in Wireless Mesh Networks," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Multihop Wireless Mesh Networks, vol. 24, no. 11, pp. 2096-2103, November 2006.

[J16] Zongpeng Li, Baochun Li, Lap Chi Lau. "On Achieving Maximum Multicast Throughput in Undirected Networks," in the Joint Special Issue on *Networking and Information Theory*, *IEEE Transactions on Information Theory* and *IEEE/ACM Transactions on Networking*, vol. 52, no. 6, pp. 2467-2485, June 2006.

[J15] Zongpeng Li, Baochun Li. "Improving Throughput in Multihop Wireless Networks," in *IEEE Transactions on Vehicular Technology*, Special Section on Cross-Layer Design for Mobile Ad Hoc Networks and Wireless Sensor Networks, vol. 55, no. 3, pp. 762-773, May 2006.

[J14] Weihong Wang, Baochun Li. "Market-based Resource Allocation in Service Overlay Networks," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Autonomic Communication Systems, vol. 23, no. 12, pp. 2320-2332, December 2005.

[J13] Yuan Xue, Baochun Li, Klara Nahrstedt. "Optimal Resource Allocation in Wireless Ad Hoc Networks: A Price-based Approach," in *IEEE Transactions on Mobile Computing*, vol. 5, no. 4, pp. 347-364, April 2006.

[J12] Selwyn Yuen, Baochun Li. "Strategyproof Mechanisms towards Dynamic Topology Formation in Autonomous Networks," in *ACM/Kluwer Mobile Networks and Applications (MONET)*, Special Issue on Non-Cooperative Wireless Networking and Computing, Kluwer Academic Publishers, vol. 10, no. 6, pp. 961-970, December 2005.

[J11] Yongyi Mao, Frank R. Kschischang, Baochun Li, Subbarayan Pasupathy. "A Factor Graph Approach to Link Loss Monitoring in Wireless Sensor Networks," in *IEEE Jour-*

nal on Selected Areas in Communications, Special Issue on Self-Organizing Distributed Collaborative Sensor Networks, vol. 23, pp. 820-829, April 2005.

[J10] Yuan Xue, Baochun Li, Klara Nahrstedt. "Channel-Relay Price Pair: towards Arbitrating Incentives in Wireless Ad Hoc Networks," in *Wireless Communications and Mobile Computing*, Special Issue on Ad Hoc Wireless Networks, vol. 6, Issue 2, pp. 235-245, Wiley InterScience, March 2006.

[J9] Zongpeng Li, Baochun Li. "Probabilistic Power Management for Wireless Ad Hoc Networks," in *ACM/Kluwer Mobile Networks and Applications (MONET)*, Special Issue on WLAN Optimization at the MAC and Network Levels, Kluwer Academic Publishers, vol. 10, no. 5, pp. 771-782, October 2005.

[J8] Ying Zhu, Jiang Guo, Baochun Li. "oEvolve: Towards Evolutionary Overlay Topologies for High Bandwidth Data Dissemination," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Quality of Service Delivery in Variable Topology Networks, vol. 22, no. 7, pp. 1237-1251, September 2004.

[J7] Yi Cui, Baochun Li, Klara Nahrstedt. "oStream: Asynchronous Streaming Multicast in Application-Layer Overlay Networks," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Recent Advances in Service Overlay Networks, vol. 22, no. 1, pp. 91-106, January 2004.

[J6] Ying Zhu, Baochun Li, Jiang Guo. "Multicast with Network Coding in Application-Layer Overlay Networks," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Recent Advances in Service Overlay Networks, vol. 22, no. 1, pp. 107-120, January 2004.

[J5] Baochun Li, Karen Wang. "NonStop: Continuous Multimedia Streaming in Wireless Ad Hoc Networks with Node Mobility," in *IEEE Journal on Selected Areas in Communications*, Special Issue on Recent Advances in Wireless Multimedia, vol. 21, no. 10, pp. 1627-1641, December 2003.

[J4] Baochun Li, Dongyan Xu, Klara Nahrstedt. "An Integrated Runtime QoS-aware Middleware Framework for Distributed Multimedia Applications," in *ACM Multimedia Systems Journal*, ACM Springer-Verlag, vol. 8, Issue 5, pp. 420-430, 2002.

[J3] Baochun Li. "On Increasing Service Accessibility and Efficiency in Wireless Ad-hoc Networks with Group Mobility," in *Wireless Personal Communications*, Special Issue on Multimedia Networking and Enabling Radio Technologies, Kluwer Academic Publishers, vol. 21, no. 1, pp. 105-123, April 2002.

[J2] Baochun Li, William Kalter and Klara Nahrstedt. "A Hierarchical Control Architecture for Configurable Multimedia Applications," in *Journal of High-Speed Networks*, Special Issue on QoS for Multimedia on the Internet, IOS Press, vol. 9, pp. 153-174, 2000.

[J1] Baochun Li, Klara Nahrstedt. "A Control-based Middleware Framework for Qual-

ity of Service Adaptations,” in *IEEE Journal on Selected Areas in Communications*, Special Issue on Service Enabling Platforms for Networked Multimedia, vol. 17, no. 9, pp. 1632-1650, September 1999. (This paper received the Leonard G. Abraham Prize Paper Award.)

◇ **Refereed Book Chapters**

[BC3] Zongpeng Li, Hong Xu, Baochun Li. “Network Coding in Bi-directed and Peer-to-Peer Networks,” in *Next-Generation Internet Architectures and Protocols*, Byrav Ramamurthy, George Rouskas, Krishna Sivalingam, Cambridge University Press, to appear.

[BC2] Yuan Feng, Baochun Li. “Peer-assisted Media Streaming: A Holistic Review,” in *Intelligent Multimedia Transmission: Techniques and Applications*, Changwen Chen, Zhu Li, Shiguo Lian, Editors, Springer, to appear.

[BC1] Zhihua Hu, Baochun Li. “Fundamental Performance Limits of Wireless Sensor Networks,” in *Ad Hoc and Sensor Networks*, Yang Xiao and Yi Pan, Editors, Nova Science Publishers, pp. 81-101, ISBN 1-59454-396-8, Hardcover, 2005.

◇ **Refereed Magazine Articles**

[M1] Klara Nahrstedt, Dongyan Xu, Duangdao Wichadakul and Baochun Li. “QoS-Aware Middleware for Ubiquitous Computing,” in *IEEE Communications Magazine*, vol. 39, Issue 11, pp. 140-148, November 2001.

◇ **Refereed Papers in Conference Proceedings** (in reverse chronological order)

[C113] Fangming Liu, Ye Sun, Bo Li, Baochun Li. “Quota: Rationing Server Resources in Peer-Assisted Online Hosting Systems,” in the Proceedings of the *17th IEEE International Conference on Network Protocols (ICNP 2009)*, Princeton, New Jersey, October 13 – 16, 2009 (acceptance ratio: 18%).

[C112] Wei Wang, Baochun Li, Li Yu. “Achievable Throughput of Multiple Access Spectrum Systems Based on Cognitive Relay,” in the Proceedings of the *ACM International Workshop on Cognitive Radio Networks (CoRoNet 2009)*, co-located with ACM Mobicom 2009, Beijing, China, September 21, 2009.

[C111] Jin Jin, Baochun Li. “Cooperative Multicast Scheduling with Random Network Coding in WiMAX,” in the Proceedings of the *17th IEEE International Workshop on Quality of Service (IWQoS 2009)*, Charleston, South Carolina, July 13 – 15, 2009 (acceptance ratio: 33%).

[C110] Jun Li, Shuang Yang, Xin Wang, Xiangyang Xue, Baochun Li. “Tree-structured Data Regeneration with Network Coding in Distributed Storage Systems,” in the Proceedings of the *17th IEEE International Workshop on Quality of Service (IWQoS 2009)*, Charleston, South Carolina, July 13 – 15, 2009 (acceptance ratio: 33%).

[C109] Fangming Liu, Bo Li, Lili Zhong, Baochun Li. “Understanding the Flash Crowd in P2P Live Video Streaming Systems,” in the Proceedings of the *Seventeenth Interna-*

tional Packet Video Workshop (PV 2009), Seattle, Washington, May 11 – 12, 2009.

[C108] Hassan Shojania, Baochun Li. “Random Network Coding on the iPhone: Fact or Fiction?” in the Proceedings of the *19th International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2009)*, Williamsburg, Virginia, June 3 – 5, 2009 (acceptance ratio: 30%).

[C107] Ye Sun, Fangming Liu, Bo Li, Baochun Li. “Peer-Assisted Online Storage and Distribution: Modeling and Server Strategies,” in the Proceedings of the *19th International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2009)*, Williamsburg, Virginia, June 3 – 5, 2009 (acceptance ratio: 30%).

[C106] Fangming Liu, Bo Li, Lili Zhong, Baochun Li, Di Niu. “How Do P2P Streaming Systems Scale Over Time Under a Flash Crowd?” in the Proceedings of the *International Workshop on Peer-to-Peer Systems (IPTPS 2009)*, Boston, MA, April 21, 2009 (acceptance ratio: 20%).

[C105] Hassan Shojania, Baochun Li. “Pushing the Envelope: Extreme Network Coding on the GPU,” to appear in the Proceedings of the *29th International Conference on Distributed Computing Systems (ICDCS 2009)*, Montreal Canada, June 22 – 26, 2009 (acceptance ratio: 16%).

[C104] Zimu Liu, Chuan Wu, Baochun Li, Shuqiao Zhao. “Why Are Peers Less Stable in Unpopular P2P Streaming Channels?” in the Proceedings of *IFIP Networking 2009*, Aachen, Germany, May 11 – 15, 2009 (acceptance ratio: 20%).

[C103] Hassan Shojania, Baochun Li, Xin Wang. “Nuclei: GPU-accelerated Many-core Network Coding,” in the Proceedings of *IEEE INFOCOM 2009*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 20%).

[C102] Hong Xu, Baochun Li. “XOR-Assisted Cooperative Diversity in OFDMA Wireless Networks: Optimization Framework and Approximation Algorithms,” in the Proceedings of *IEEE INFOCOM 2009*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 20%).

[C101] Xinyu Zhang, Baochun Li. “On the Market Power of Network Coding in P2P Content Distribution Systems,” in the Proceedings of *IEEE INFOCOM 2009*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 20%).

[C100] Elias Kehdi, Baochun Li. “Null Keys: Limiting Malicious Attacks Via Null Space Properties of Network Coding,” in the Proceedings of *IEEE INFOCOM 2009*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 20%).

[C99] Zimu Liu, Chuan Wu, Baochun Li, Shuqiao Zhao. “Distilling Superior Peers in Large-Scale P2P Streaming Systems,” in the Proceedings of *IEEE INFOCOM 2009*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 20%).

[C98] Yunfeng Lin, Ben Liang, Baochun Li. “Passive Loss Inference in Wireless Sensor

Networks Based on Network Coding,” in the Proceedings of *IEEE INFOCOM 2009*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 20%).

[C97] Chen Feng, Baochun Li, Bo Li. “Understanding the Performance Gap between Pull-based Mesh Streaming Protocols and Fundamental Limits,” in the Proceedings of *IEEE INFOCOM 2009*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 20%).

[C96] Ye Sun, Fangming Liu, Bo Li, Baochun Li, Xinyan Zhang. “FS2You: Peer-Assisted Semi-Persistent Online Storage at a Large Scale,” in the Proceedings of *IEEE INFOCOM 2009*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 20%).

[C95] Chuan Wu, Baochun Li, Shuqiao Zhao. “Diagnosing Network-wide P2P Live Streaming Inefficiencies,” in the Proceedings of *IEEE INFOCOM 2009 Mini-Conference*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 9% in remaining papers).

[C94] Jiahua Wu, Baochun Li. “Keep Cache Replacement Simple in Peer-Assisted VoD Systems,” in the Proceedings of *IEEE INFOCOM 2009 Mini-Conference*, Rio de Janeiro, Brazil, April 19 – 25, 2009 (acceptance ratio: 9% in remaining papers).

[C93] Yunfeng Lin, Baochun Li, Ben Liang. “CodeOR: Opportunistic Routing in Wireless Mesh Networks with Segmented Network Coding,” in the Proceedings of *the 16th IEEE International Conference on Network Protocols (ICNP 2008)*, Orlando, Florida, October 19 – 22, 2008 (acceptance ratio: 16%).

[C92] Chen Feng, Baochun Li. “On Large-Scale Peer-to-Peer Streaming Systems with Network Coding,” in the Proceedings of *ACM Multimedia 2008*, Vancouver, British Columbia, October 27 – November 1, 2008 (acceptance ratio: 16%).

[C91] Xinyu Zhang, Baochun Li. “Drift: A Highly Condensed Emulation Framework for Mobile Nodes in Server Clusters,” in the Proceedings of *the 5th IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS 2008)* (regular paper), Atlanta, Georgia, September 29 – October 2, 2008 (acceptance ratio for regular papers: 10%).

[C90] Andrew Smith, Bryce Evans, Zongpeng Li, Baochun Li. “The Cost Advantage of Network Coding in Uniform Combinatorial Networks,” in the Proceedings of *the First IEEE International Workshop on Wireless Network Coding (WiNC 2008)*, San Francisco, California, June 16, 2008.

[C89] Xinyu Zhang, Baochun Li. “On the Benefits of Network Coding in Multi-Channel Wireless Networks,” in the Proceedings of *the 5th IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2008)*, San Francisco, California, June 17 – 20, 2008 (acceptance ratio: 21%).

[C88] Xinyu Zhang, Baochun Li. “Dice: a Game Theoretic Framework for Wireless Multipath Network Coding,” in the Proceedings of *the 9th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc 2008)*, Hong Kong, China, May 26 – 30, 2008 (acceptance ratio: 14%).

[C87] Mea Wang, Hassan Shojania, Baochun Li. "Crystal: An Emulation Framework for Practical Peer-to-Peer Multimedia Streaming Systems," in the Proceedings of *the 28th International Conference on Distributed Computing Systems (ICDCS 2008)*, Beijing, China, June 17 – 20, 2008 (acceptance ratio: 16%).

[C86] Xinyu Zhang, Baochun Li. "Optimized Multipath Network Coding in Lossy Wireless Networks," in the Proceedings of *the 28th International Conference on Distributed Computing Systems (ICDCS 2008)*, Beijing, China, June 17 – 20, 2008 (acceptance ratio: 16%).

[C85] Di Niu, Baochun Li. "Circumventing Server Bottlenecks: Indirect Large-Scale P2P Data Collection," in the Proceedings of *the 28th International Conference on Distributed Computing Systems (ICDCS 2008)*, Beijing, China, June 17 – 20, 2008 (acceptance ratio: 16%).

[C84] Jin Jin, Baochun Li. "Adaptive Random Network Coding in WiMAX," in the Proceedings of *IEEE International Conference on Communications (ICC 2008)*, Beijing, China, May 19 – 23, 2008 (acceptance ratio: 36%).

[C83] Xinyu Zhang, Baochun Li. "Network Coding Aware Dynamic Subcarrier Assignment in OFDMA Wireless Networks," in the Proceedings of *IEEE International Conference on Communications (ICC 2008)*, Beijing, China, May 19 – 23, 2008 (acceptance ratio: 36%).

[C82] Yunfeng Lin, Baochun Li. "Geometric Random Linear Codes in Sensor Networks," in the Proceedings of *IEEE International Conference on Communications (ICC 2008)*, Beijing, China, May 19 – 23, 2008 (acceptance ratio: 36%).

[C81] Tara Small, Baochun Li, Ben Liang. "Topology Affects the Efficiency of Network Coding in Peer-to-Peer Networks," in the Proceedings of *IEEE International Conference on Communications (ICC 2008)*, Beijing, China, May 19 – 23, 2008 (acceptance ratio: 36%).

[C80] Chuan Wu, Baochun Li, Shuqiao Zhao. "Multi-channel Live P2P Streaming: Refocusing on Servers," in the Proceedings of *IEEE INFOCOM 2008*, Phoenix, Arizona, April 14 – 17, 2008 (acceptance ratio: 21%).

[C79] Yunfeng Lin, Baochun Li, Ben Liang. "Efficient Network Coded Data Transmissions in Disruption Tolerant Networks," in the Proceedings of *IEEE INFOCOM 2008*, Phoenix, Arizona, April 14 – 17, 2008 (acceptance ratio: 21%).

[C78] Jin Jin, Baochun Li, Taegon Kong. "Is Random Network Coding Helpful in WiMAX?" in the Proceedings of *IEEE INFOCOM 2008 Mini-Conference*, Phoenix, Arizona, April 14 – 17, 2008 (acceptance ratio: 9% beyond regular INFOCOM papers).

[C77] Xinyu Zhang, Baochun Li. "Joint Network Coding and Subcarrier Assignment in OFDMA-Based Wireless Networks," in the Proceedings of the *Fourth International Workshop on Network Coding, Theory and Applications (NetCod 2008)*, pp. 126-131, Hong Kong, January 3 – 4, 2008.

[C76] Chuan Wu, Baochun Li. "On Meeting P2P Streaming Bandwidth Demand with Limited Supplies," in the Proceedings of the *Fifteenth Annual SPIE/ACM International Conference on Multimedia Computing and Networking (MMCN 2008)*, vol. 6818, pp. 1-12, San Jose, California, January 30 – 31, 2008 (acceptance ratio: 26%).

[C75] Zongpeng Li, Baochun Li, Mea Wang. "Optimization Models for Streaming in Multihop Wireless Networks," in the Proceedings of the *16th IEEE International Conference on Computer Communications and Networking (IEEE ICCCN 2007)*, Honolulu, Hawaii, August 13 – 16, 2007 (acceptance ratio: 29%).

[C74] Yunfeng Lin, Ben Liang, Baochun Li. "Performance Modeling of Network Coding in Epidemic Routing," in the Proceedings of the *First International Workshop on Mobile Opportunistic Networking (ACM/SIGMOBILE MobiOpp 2007)*, in conjunction with ACM MobiSys 2007, pp. 67-74, Puerto Rico, June 11, 2007.

[C73] Hassan Shojanian, Baochun Li. "Parallelized Progressive Network Coding with Hardware Acceleration," in the Proceedings of the *Fifteenth IEEE International Workshop on Quality of Service (IWQoS 2007)*, pp. 47-55, Chicago, Illinois, June 21 – 22, 2007 (acceptance ratio: 26%).

[C72] Di Niu, Baochun Li. "On the Resilience-Complexity Tradeoff of Network Coding in Dynamic P2P Networks," in the Proceedings of the *Fifteenth IEEE International Workshop on Quality of Service (IWQoS 2007)*, pp. 38-46, Chicago, Illinois, June 21 – 22, 2007 (acceptance ratio: 26%).

[C71] Chuan Wu, Baochun Li, Shuqiao Zhao. "Magellan: Charting Large-Scale Peer-to-Peer Live Streaming Topologies," to appear in the Proceedings of *27th International Conference on Distributed Computing Systems (ICDCS 2007)*, Toronto, Ontario, Canada, June 25 – 29, 2007 (acceptance ratio: 13%).

[C70] Yunfeng Lin, Baochun Li, Ben Liang. "Differentiated Data Persistence with Priority Random Linear Codes," to appear in the Proceedings of *27th International Conference on Distributed Computing Systems (ICDCS 2007)*, Toronto, Ontario, Canada, June 25 – 29, 2007 (acceptance ratio: 13%).

[C69] Chuan Wu, Baochun Li. "Outburst: Efficient Overlay Content Distribution with Rateless Codes," in the Proceedings of *IFIP Networking 2007*, also *Lecture Notes in Computer Science*, Springer, vol. 4479, pp. 1208-1216, Atlanta, Georgia, May 14 – 18, 2007 (acceptance ratio: 28%).

[C68] Chuan Wu, Baochun Li. "Optimal Rate Allocation in Overlay Content Distribution," in the Proceedings of *IFIP Networking 2007*, also *Lecture Notes in Computer Science*, Springer, vol. 4479, pp. 678-690, Atlanta, Georgia, May 14 – 18, 2007 (acceptance ratio: 22%).

[C67] Mea Wang, Baochun Li. "Lava: A Reality Check of Network Coding in Peer-to-Peer Live Streaming," in the Proceedings of *IEEE INFOCOM 2007*, Anchorage, Alaska, May 6 – 12, 2007 (acceptance ratio: 18%).

[C66] Chuan Wu, Baochun Li. "Strategies of Conflict in Coexisting Streaming Overlays," in the Proceedings of *IEEE INFOCOM 2007*, Anchorage, Alaska, May 6 – 12, 2007 (acceptance ratio: 18%).

[C65] Yunfeng Lin, Ben Liang, Baochun Li. "Data Persistence in Large-scale Sensor Networks with Decentralized Fountain Codes," in the Proceedings of *IEEE INFOCOM 2007*, Anchorage, Alaska, May 6 – 12, 2007 (acceptance ratio: 18%).

[C64] Tara Small, Ben Liang, Baochun Li. "Scaling Laws and Tradeoffs of Peer-to-Peer Live Multimedia Streaming," in the Proceedings of *ACM Multimedia 2006*, Santa Barbara, California, pp. 539-548, October 23 – 27, 2006 (acceptance ratio: 16%).

[C63] Chuan Wu, Baochun Li. "Echelon: Peer-to-Peer Network Diagnosis with Network Coding," in the Proceedings of the *Fourteenth IEEE International Workshop on Quality of Service (IWQoS 2006)*, pp. 20-29, Yale University, New Haven, Connecticut, June 19 – 21, 2006 (acceptance ratio: 25%).

[C62] Mea Wang, Baochun Li. "How Practical is Network Coding?" in the Proceedings of the *Fourteenth IEEE International Workshop on Quality of Service (IWQoS 2006)*, pp. 274-278, Yale University, New Haven, Connecticut, June 19 – 21, 2006 (acceptance ratio: 25%).

[C61] Tara Small, Baochun Li, Ben Liang. "On Optimal Peer-to-Peer Topology Construction with Maximum Peer Bandwidth Contributions," in the Proceedings of the *23rd Queen's Biennial Symposium on Communications*, pp. 157-160, Kinston, Ontario, Canada, May 29 – June 1, 2006.

[C60] Ying Zhu, Baochun Li. "Overlay Multicast with Inferred Link Capacity Correlations," in the Proceedings of the *26th International Conference on Distributed Computing Systems (ICDCS 2006)*, pp. 54, Lisbon, Portugal, July 4 – 7, 2006 (acceptance ratio: 13%).

[C59] Kevin Yuen, Baochun Li, Ben Liang. "Distributed Data Gathering in Multi-Sink Sensor Networks with Correlated Sources," in the Proceedings of *IFIP Networking 2006*, pp. 868-879, Coimbra, Portugal, May 15 – 19, 2006 (acceptance ratio: 20%).

[C58] Kevin Yuen, Baochun Li, Ben Liang. "Distributed Minimum Energy Data Gathering and Aggregation in Sensor Networks," in the Proceedings of the *2006 IEEE International Conference on Communications (ICC 2006)*, Istanbul, Turkey, June 11 – 15, 2006 (acceptance ratio: 39%).

[C57] Ying Zhu, Baochun Li. "Correlation-aware Multimedia Content Distribution in Overlay Networks," in the Proceedings of the *Thirteenth Annual SPIE/ACM Multimedia Computing and Networking (MMCN 2006)*, pp. 127-138, San Jose, California, January 18 – 19, 2006.

[C56] Chuan Wu, Baochun Li. "Optimal Peer Selection for Minimum-Delay Peer-to-Peer Streaming with Rateless Codes," in the Proceedings of *ACM Workshop on Advances in Peer-to-Peer Multimedia Streaming (P2PMMS 2005)*, in conjunction with *ACM Multi-*

media 2005, pp. 69-78, Singapore, November 6 – 12, 2005.

[C55] Chuan Wu, Baochun Li. “rStream: Resilient Peer-to-Peer Streaming with Rateless Codes,” in the Proceedings of *ACM Multimedia 2005*, pp. 307-310, Singapore, November 6 – 12, 2005 (acceptance ratio: 19%).

[C54] Zongpeng Li, Baochun Li. “On Increasing End-to-End Throughput in Wireless Ad Hoc Networks,” in the Proceedings of the *Second International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks (QShine 2005)*, Orlando, Florida, August 22 – 24, 2005.

[C53] Jun Yuan, Zongpeng Li, Wei Yu, Baochun Li. “A Cross-Layer Optimization Framework for Multicast in Multi-hop Wireless Networks,” in the Proceedings of the *First International Conference on Wireless Internet (WICON 2005)*, pp. 47-54, Budapest, Hungary, July 10 – 14, 2005 (acceptance ratio: 39%).

[C52] Ying Zhu, Baochun Li. “Overlay Networks with Linear Capacity Constraints,” in the Proceedings of the *Thirteenth International Workshop on Quality of Service (IWQoS 2005)*, also *Lecture Notes in Computer Science*, Springer, vol. 3552, pp. 21-36, H. de Meer, N. Bhatti (Eds.), Passau, Germany, June 21 – 23, 2005 (acceptance ratio: 26%). (*This paper received the Best Student Paper Award.*)

[C51] Mea Wang, Zongpeng Li, Baochun Li. “A High-Throughput Overlay Multicast Infrastructure with Network Coding,” in the Proceedings of the *Thirteenth International Workshop on Quality of Service (IWQoS 2005)*, also *Lecture Notes in Computer Science*, Springer, vol. 3552, pp. 37-53, H. de Meer, N. Bhatti (Eds.), Passau, Germany, June 21 – 23, 2005 (acceptance ratio: 26%).

[C50] Baochun Li. “End-to-End Fair Bandwidth Allocation in Multi-hop Wireless Ad Hoc Networks,” in the Proceedings of the *25th International Conference on Distributed Computing Systems (ICDCS 2005)*, pp. 471-480, Columbia, Ohio, June 6 – 9, 2005 (acceptance ratio: 14%).

[C49] Gregory Hartl, Baochun Li. “*infer*: A Bayesian Inference Approach towards Energy Efficient Data Collection in Sensor Networks,” in the Proceedings of the *25th International Conference on Distributed Computing Systems (ICDCS 2005)*, pp. 371-380, Columbia, Ohio, June 6 – 9, 2005 (acceptance ratio: 14%).

[C48] Zhihua Hu, Baochun Li. “ZAL: Zero-Maintenance Address Allocation in Mobile Wireless Ad Hoc Networks,” in the Proceedings of the *25th International Conference on Distributed Computing Systems (ICDCS 2005)*, pp. 103-112, Columbia, Ohio, June 6 – 9, 2005 (acceptance ratio: 14%).

[C47] Zongpeng Li, Baochun Li, Dan Jiang, Lap-Chi Lau. “On Achieving Optimal Throughput with Network Coding,” in the Proceedings of *IEEE INFOCOM 2005*, vol. 3, pp. 2184-2194, Miami, Florida, March 13 – 17, 2005 (acceptance ratio: 17%).

[C46] Zongpeng Li, Baochun Li. “Efficient and Distributed Computation of Maximum

Multicast Rates,” in the Proceedings of *IEEE INFOCOM 2005*, Miami, Florida, vol. 3, pp. 1618-1628, March 13 – 17, 2005 (acceptance ratio: 17%).

[C45] Selwyn Yuen, Baochun Li. “Strategyproof Mechanisms for Dynamic Multicast Tree Formation in Overlay Networks,” in the Proceedings of *IEEE INFOCOM 2005*, vol. 3, pp. 2135-2146, Miami, Florida, March 13 – 17, 2005 (acceptance ratio: 17%).

[C44] Weihong Wang, Baochun Li. “Market-driven Bandwidth Allocation in Selfish Overlay Networks,” in the Proceedings of *IEEE INFOCOM 2005*, vol. 3, pp. 2578-2589, Miami, Florida, March 13 – 17, 2005 (acceptance ratio: 17%).

[C43] Baochun Li, Jiang Guo, Mea Wang. “iOverlay: A Lightweight Middleware Infrastructure for Overlay Application Implementations,” in the Proceedings of *the Fifth ACM/IFIP/USENIX International Middleware Conference (Middleware 2004)*, also Lecture Notes in Computer Science, ACM Springer-Verlag, vol. 3231, pp. 135-154, Toronto, Canada, October 18 – 22, 2004 (acceptance ratio: 14%).

[C42] Selwyn Yuen, Baochun Li. “Strategyproof Mechanisms towards Evolutionary Topology Formation in Autonomous Networks,” in the Proceedings of *the International Workshop on Theoretical Aspects of Wireless Ad hoc, Sensor and Peer-to-Peer Networks*, Chicago, Illinois, June 11 – 12, 2004.

[C41] Alex Varshavsky, Baochun Li, Eyal De Lara. “Cross-Layer Flow Control in Lightly-Loaded Multi-Hop Ad Hoc Networks,” in the Proceedings of *the International Workshop for Network Design and Architecture (IWANDA 2004)*, in conjunction with *the 2004 International Conference on Parallel Processing (ICPP 2004)*, pp. 315-321, Montreal, Quebec, Canada, August 15 – 18, 2004.

[C40] Jiang Guo, Baochun Li. “Mitigating Information Asymmetries to achieve Efficient Peer-to-Peer Queries,” in the Proceedings of *the 2004 International Conference on Parallel Processing (ICPP 2004)*, pp. 91-99, Montreal, Quebec, Canada, August 15 – 18, 2004 (acceptance ratio: 34%).

[C39] Yi Cui, Baochun Li, Klara Nahrstedt. “On Achieving Optimized Capacity Utilization in Application Overlay Networks with Multiple Competing Sessions,” in the Proceedings of *the Sixteenth ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2004)*, pp. 160-169, Barcelona, Spain, June 27 – 30, 2004.

[C38] Alvin Mok, Bina Mistry, Eric Chung, Baochun Li. “FAIR: Fee Arbitrated Incentive Architecture in Wireless Ad Hoc Networks,” in the Proceedings of *the 10th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2004)*, pp. 2-9, Toronto, Canada, May 25 – 28, 2004 (acceptance ratio: 32%).

[C37] Zhihua Hu, Baochun Li. “On the Fundamental Capacity and Lifetime Limits of Energy-Constrained Wireless Sensor Networks,” in the Proceedings of *the 10th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2004)*, pp. 38-47, Toronto, Canada, May 25 – 28, 2004 (acceptance ratio: 32%).

[C36] Jiang Guo, Baochun Li. "Distributed Algorithms in Service Overlay Networks: A Game Theoretic Perspective," in the Proceedings of *IEEE International Conference on Communications (ICC 2004)*, vol. 3, pp. 1421-1425, Paris, France, June 20 – 24, 2004 (acceptance ratio: 29%).

[C35] Gregory Hartl, Baochun Li. "Loss Inference in Wireless Sensor Networks based on Data Aggregation," in the Proceedings of *the Third IEEE/ACM International Symposium on Information Processing in Sensor Networks (IPSN 2004)*, pp. 396-404, Berkeley, California, April 26 – 27, 2004.

[C34] Borzoo Shadpour, Shahrokh Valaee, Baochun Li. "A Self-Organized Approach for Stimulating Cooperation in Mobile Ad hoc Networks," in the Proceedings of *the 22nd Biennial Symposium on Communications, Queen's University, Kingston, Ontario, Canada*, May 31 – June 3, 2004.

[C33] Mea Wang, Baochun Li, Zongpeng Li. "sFlow: Towards Resource-Efficient and Agile Service Federation in Service Overlay Networks," in the Proceedings of *the 24th IEEE International Conference on Distributed Computing Systems (ICDCS 2004)*, pp. 628-635, Tokyo, Japan, March 23 – 26, 2004 (acceptance ratio: 17%).

[C32] Jiang Guo, Ying Zhu, Baochun Li. "CodedStream: Live Media Streaming with Network Coding in Application-Layer Overlay Networks," in the Proceedings of *the SPIE Conference on Multimedia Computing and Networking (MMCN 2004)*, pp. 28-39, Santa Clara, California, January 21 – 22, 2004 (acceptance ratio: 25%).

[C31] Shahid Bashir, Baochun Li. "KELOP: Distributed Key-Value Lookup in Wireless Ad Hoc Networks," in the Proceedings of *the 12th IEEE International Conference on Computer Communications and Networks (ICCCN 2003)*, pp. 471-476, Dallas, Texas, October 20 – 22, 2003.

[C30] Jilei Liu, Baochun Li. "Distributed Topology Control in Wireless Sensor Networks with Asymmetric Links," in the Proceedings of *IEEE Globecom 2003, Wireless Communications Symposium*, vol. 3, pp. 1257-1262, San Francisco, California, December 1 – 5, 2003 (acceptance ratio: 36%).

[C29] Weihong Wang, Ying Zhu, Baochun Li. "Self-Managed Heterogeneous Certification in Mobile Ad Hoc Networks," in the Proceedings of *IEEE Vehicular Technology Conference (VTC 2003)*, vol. 3, pp. 2137-2141, Orlando, Florida, October 6 – 9, 2003.

[C28] Weihong Wang, Baochun Li. "To Play or to Control: A Game-based Control-theoretic Approach to Peer-to-Peer Incentive Engineering," in the Proceedings of *the Eleventh IEEE International Workshop on Quality of Service (IWQoS 2003)*, also in *Lecture Notes in Computer Science*, ACM Springer-Verlag, vol. 2707, pp. 174-192, Monterey, CA, June 2 – 4, 2003.

[C27] Yuan Xue, Baochun Li, Klara Nahrstedt. "Price-based Resource Allocation in Wireless Ad Hoc Networks," in the Proceedings of *the Eleventh IEEE International Workshop on Quality of Service (IWQoS 2003)*, also in *Lecture Notes in Computer Science*, ACM

Springer-Verlag, vol. 2707, pp. 79-96, Monterey, CA, June 2 – 4, 2003.

[C26] Zongpeng Li, Baochun Li, Dongyan Xu, Xin Zhou. “iFlow: Middleware-assisted Rendezvous-based Information Access for Mobile Ad Hoc Applications,” in the Proceedings of *the First ACM/USENIX International Conference on Mobile Systems, Applications, and Services (MobiSys 2003)*, pp. 71 – 84, San Francisco, CA, May 5 – 8, 2003 (acceptance ratio: 15%).

[C25] Edmond Poon, Baochun Li. “SmartNode: Achieving 802.11 MAC Interoperability in Power-efficient Sensor Networks with Dynamic Range Adjustments,” in the Proceedings of *IEEE International Conference on Distributed Computing Systems (ICDCS 2003)*, pp. 650-657, Providence, Rhode Island, May 19 – 22, 2003 (acceptance ratio: 18%).

[C24] Jilei Liu, Baochun Li. “MobileGrid: Capacity-aware Topology Control in Mobile Ad Hoc Networks,” in the Proceedings of *the 11th IEEE International Conference on Computer Communications and Networks (ICCCN 2002)*, pp. 570-574, Miami, Florida, October 14 – 16, 2002.

[C23] Siddhartha Goel, Manish Singh, Dongyan Xu, Baochun Li. “Efficient Peer-to-Peer Data Dissemination in Mobile Ad Hoc Networks,” in the Proceedings of *the International Workshop on Ad Hoc Networks (IWAHN 2002)*, in conjunction with *the 2002 International Conference on Parallel Processing (ICPP 2002)*, Vancouver, British Columbia, August 18 – 21, 2002.

[C22] Shahrokh Valaee, Baochun Li. “Distributed Call Admission Control in Wireless Ad Hoc Networks,” in the Proceedings of *IEEE Vehicular Technology Conference (VTC 2002)*, vol. 2, pp. 1244-1248, Vancouver, British Columbia, September 24 – 28, 2002 (acceptance ratio: 39%).

[C21] Karen Wang, Baochun Li. “Efficient and Guaranteed Service Coverage in Partitionable Mobile Ad-hoc Networks,” in the Proceedings of *IEEE INFOCOM 2002*, vol. 2, pp. 1089-1098, New York City, New York, June 23 – 27, 2002 (acceptance ratio: 20%).

[C20] Karen Wang, Baochun Li. “Group Mobility and Partition Prediction in Wireless Ad-hoc Networks,” in the Proceedings of *IEEE International Conference on Communications (ICC 2002)*, vol. 2, pp. 1017-1021, New York City, New York, April 28 – May 2, 2002 (acceptance ratio: 42%).

[C19] Yuan Xue, Baochun Li. “A Location-aided Power-aware Routing Protocol in Mobile Ad Hoc Networks,” in the Proceedings of *IEEE Globecom 2001*, vol. 5, pp. 2837-2841, San Antonio, Texas, November 25 – 29, 2001 (acceptance ratio: 25%).

[C18] Roy Leung, Jilei Liu, Edmond Poon, Charles Chan, Baochun Li. “MP-DSR: A QoS-aware Multi-path Dynamic Source Routing Protocol for Wireless Ad-hoc Networks,” in the Proceedings of *the 26th IEEE Annual Conference on Local Computer Networks (LCN 2001)*, pp. 132-141, Tampa, Florida, November 15 – 16, 2001.

[C17] Yuan Xue, Baochun Li, Klara Nahrstedt. “A Scalable Location Management Scheme

in Mobile Ad-hoc Networks,” in the Proceedings of *the 26th IEEE Annual Conference on Local Computer Networks (LCN 2001)*, pp. 102-111, Tampa, Florida, November 15 – 16, 2001.

[C16] Xinran Wu, Clement Yuen, Yan Gao, Hong Wu, Baochun Li. “Fair Scheduling with Bottleneck Consideration in Wireless Ad-hoc Networks,” in the Proceedings of *10th IEEE International Conference on Computer Communications and Networks (ICCCN 2001)*, pp. 568-572, Phoenix, Arizona, October 15 – 17, 2001.

[C15] Baochun Li, Dongyan Xu, Klara Nahrstedt. “Towards Integrated Runtime Solutions in QoS-aware Middleware,” in the Proceedings of *ACM Multimedia Middleware Workshop (M3W 2001)*, pp. 11-14, Ottawa, Canada, October 5, 2001.

[C14] Hassan Shojania, Baochun Li. “Experiences with MPEG-4 Multimedia Streaming,” in the Proceedings of *the Ninth ACM Multimedia Conference (ACM Multimedia 2001)*, pp. 492-494, Ottawa, Canada, September 30 – October 5, 2001.

[C13] Baochun Li. “A Hierarchical Graph Model for Probing Multimedia Applications,” in the Proceedings of *the IEEE International Conference on Multimedia and Expo (ICME 2001)*, Tokyo, Japan, August 22 – 25, 2001.

[C12] Baochun Li. “QoS-aware Adaptive Services in Mobile Ad-hoc Networks,” in the Proceedings of *the Ninth IEEE International Workshop on Quality of Service (IWQoS 2001)*, also Lecture Notes in Computer Science, ACM Springer-Verlag, vol. 2092, pp. 251-268, Karlsruhe, Germany, June 6 – 8, 2001 (acceptance ratio: 21%).

[C11] William Kalter, Baochun Li, Won Jeon, Klara Nahrstedt, and Jun-hyuk Seo. “A Gateway-Assisted Approach Toward QoS Adaptations,” in the Proceedings of *the IEEE International Conference on Multimedia and Expo (ICME 2000)*, New York City, New York, July 30 – August 2, 2000.

[C10] Baochun Li, Klara Nahrstedt. “QualProbes: Middleware QoS Profiling Services for Configuring Adaptive Applications,” in the Proceedings of *IFIP International Conference on Distributed Systems Platforms and Open Distributed Processing (Middleware 2000)*, also Lecture Notes in Computer Science, ACM Springer-Verlag, vol. 1795, pp. 256-272, New York, April 3 – 7, 2000 (acceptance ratio: 30%).

[C9] Baochun Li, Won Jeon, William Kalter, Klara Nahrstedt, and Jun-Hyuk Seo. “Adaptive Middleware Architecture for a Distributed Omni-Directional Visual Tracking System,” in the Proceedings of *the SPIE Multimedia Computing and Networking 2000 (MMCN 2000)*, pages 101-112, San Jose, California, January 25 – 27, 2000.

[C8] Dongyan Xu, Baochun Li, and Klara Nahrstedt. “QoS-Directed Error Control of Video Multicast in Wireless Networks,” in the Proceedings of *the 8th IEEE International Conference on Computer Communications and Networks (IEEE ICCCN 1999)*, pp. 257-262, Boston-Natick, Massachusetts, October 11 – 13, 1999.

[C7] Baochun Li, Klara Nahrstedt. “Dynamic Reconfiguration for Complex Multime-

dia Applications,” in the Proceedings of *the IEEE International Conference on Multimedia Computing and Systems (IEEE Multimedia 1999)*, vol. 1, pp. 165-170, Florence, Italy, June 7 – 11, 1999.

[C6] Baochun Li, Dongyan Xu, and Klara Nahrstedt. “Optimal State Prediction for Feedback-Based QoS Adaptations,” in the Proceedings of *the Seventh IEEE International Workshop on Quality of Service (IWQoS 1999)*, pp. 37-46, London, UK, May 31 – June 4, 1999 (acceptance ratio: 17%).

[C5] Baochun Li, Dongyan Xu, Klara Nahrstedt, and Jane W.S. Liu. “End-to-End QoS Support for Adaptive Applications Over the Internet,” in *SPIE Proceedings on Internet Routing and Quality of Service*, vol. 3529, pp. 166-176, Boston, Massachusetts, November 1 – 6, 1998.

[C4] Dongyan Xu, Baochun Li, Jane W.S. Liu and Klara Nahrstedt. “Providing Seamless QoS for Multimedia Multicast in Real-Time Packet Cellular Networks,” in *SPIE Proceedings on Multimedia Systems and Applications*, vol. 3528, pp. 352-361, Boston, Massachusetts, November 1 – 6, 1998.

[C3] Dongyan Xu, Baochun Li. “Synchronized End-to-End Multicast in Real-Time Packet Cellular Networks,” in the Proceedings of *the IEEE Military Communications Conference (MILCOM 1998)*, pp. 431-435, Bedford, Massachusetts, October 18 – 21, 1998.

[C2] Baochun Li, Klara Nahrstedt. “A Control Theoretical Model for Quality of Service Adaptations,” in the Proceedings of *the Sixth IEEE International Workshop on Quality of Service (IWQoS 1998)*, pp. 145-153, Napa, California, May 18 – 20, 1998 (acceptance ratio: 16%).

[C1] Baochun Li, Klara Nahrstedt. “An Open Task Control Model for Quality of Service Adaptation,” in the Proceedings of *the 14th International Conference of Advanced Science and Technology (ICAST 1998)*, pp. 29-41, Naperville, Illinois, April 3 – 5, 1998.

◇ **Invited Papers in Conference Proceedings** (in reverse chronological order)

[IC8] Di Niu, Baochun Li. “Asymptotic Rate Limits for Randomized Broadcasting with Network Coding,” in the Proceedings of *the 47th Annual Allerton Conference on Communication, Control, and Computing (Allerton 2009)*, invited session on Network Algorithms and Analysis I, Allerton, Illinois, September 30 – October 2, 2009.

[IC7] Ajay Gopinathan, Zongpeng Li, Baochun Li. “On Achieving Group Strategyproof Information Dissemination in Wireless Networks,” in the Proceedings of *the International Conference on Game Theory for Networks (GameNets 2009)*, invited session on *Game Theory for P2P Networks*, Istanbul, Turkey, May 13 – 15, 2009.

[IC6] Mea Wang, Baochun Li. “RapidFlow: An Experimental Testbed for Information Flows with Network Coding,” in the Proceedings of *IEEE International Zurich Seminar on Communications (IZS 2006)*, invited session on *Applications of Network Coding*, pp. 78-81, Zurich, Switzerland, February 22 – 24, 2006.

[IC5] Zongpeng Li, Baochun Li. "Network Coding: The Case of Multiple Unicast Sessions," in the Proceedings of *the 42nd Annual Allerton Conference on Communication, Control, and Computing*, invited session on *Network Coding*, pp. 11-19, Monticello, Illinois, September 29 – October 1, 2004.

[IC4] Zongpeng Li, Baochun Li. "Network Coding in Undirected Networks," in the Proceedings of *the 38th Annual Conference on Information Science and Systems (CISS 2004)*, invited session on *Network Coding*, pp. 257-262, Princeton, New Jersey, March 17 – 19, 2004.

[IC3] Baochun Li, Klara Nahrstedt. "Impact of Control Theory on QoS Adaptation in Distributed Middleware Systems," in the Proceedings of *the 2001 American Control Conference*, Arlington, Virginia, June 25 – 27, 2001.

[IC2] Baochun Li, Klara Nahrstedt. "A Dynamic Middleware Control Architecture for Distributed Multimedia Applications," in the Proceedings of *the Workshop on Automated Control of Distributed Instrumentation (ACDI 1999)*, Urbana, Illinois, April 22 – 23, 1999.

[IC1] Baochun Li, Klara Nahrstedt. "Adaptive QoS Middleware Framework for Complex Flexible Applications," in the Proceedings of *the NASA NREN QoS Workshop*, NASA Ames Research Center, California, August 18 – 19, 1998.

DISSERTATIONS

[D2] Baochun Li. "Agilos: A Middleware Control Architecture for Application-Aware Quality of Service Adaptations," *Ph.D. Dissertation*, Department of Computer Science, University of Illinois at Urbana-Champaign, May 2000.

[D1] Baochun Li. "Adaptive Behavior of Quality of Service in Distributed Multimedia Systems," *M.Sc. Dissertation*, Department of Computer Science, University of Illinois at Urbana-Champaign, May 1997.

SELECTED SCHOLARLY ADDRESSES

[SA42] "Decentralized Network Coding in Unreliable Networks," one-hour invited presentation, China Computing Forum, Beijing, China, August 29, 2009.

[SA41] "Decentralized Network Coding in Unreliable Networks," one-hour invited presentation, Xidian University, Xi'an, China, August 26, 2009.

[SA40] "Live Peer-to-Peer Streaming Systems with Network Coding," one-hour invited presentation, McGill SOCS Colloquium, McGill University, Montreal, Quebec, September 19, 2008.

[SA39] "Large-scale Peer-to-Peer Streaming Systems with Network Coding," one-hour invited presentation, Microsoft Research, Redmond, Washington, July 31, 2008.

[SA38] "Live Peer-to-Peer Streaming Systems with Network Coding," one-hour invited presentation, Fudan University, Shanghai, China, July 7, 2008.

[SA37] "Network Coding in Multi-Hop Wireless Networks," one-hour invited presen-

tation, Xidian University, Xi'an, China, May 16, 2008.

[SA36] "Peer-to-Peer Streaming: Have We Reached A Plateau?" one-hour invited seminar presentation, Hong Kong Polytechnic University, January 2, 2008.

[SA35] "Practical Peer-to-Peer Live Streaming with Network Coding," one-hour invited presentation, Microsoft Research, Redmond, Washington, August 21, 2007.

[SA34] "Network Coding: From Theory to Reality," one-hour invited presentation, Department of Computer Science, Fudan University, Shanghai, China, January 31, 2007.

[SA33] "Scaling Laws and Tradeoffs in Peer-to-Peer Live Multimedia Streaming," one-hour invited presentation, Department of Computing, Hong Kong Polytechnic University, January 25, 2007.

[SA32] "Network Coding: From Theory to Reality," one-hour invited presentation, Department of Computer Science, Northwestern University, Evanston, Illinois, November 3, 2006.

[SA31] "Scaling Laws and Tradeoffs in Peer-to-Peer Live Multimedia Streaming," one-hour invited presentation, Microsoft Research, Redmond, Washington, October 11, 2006.

[SA30] "How Helpful is Network Coding?" one-hour invited presentation, Microsoft Research, Redmond, Washington, September 22, 2006.

[SA29] "How Can P2P Help?" invited presentation in the Plenary Panel titled "*Role of P2P in Network Architecture and Security*," the 26th International Conference on Distributed Computing Systems (ICDCS 2006), Lisbon, Portugal, July 5, 2006.

[SA28] "How Helpful is Network Coding?" one-hour invited presentation, Department of Computing, Hong Kong Polytechnic University, May 10, 2006.

[SA27] "Implementing an Experimental Testbed for Network Coding," half-hour invited presentation in the session "Applications of Network Coding," the 2006 International Zurich Seminar (IZS) on Communications, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, February 22 – 24, 2006.

[SA26] "Maximizing Throughput with Network Coding," one-hour *invited* presentation, the Toronto Networking Seminar Series, University of Toronto, October 14, 2005.

[SA25] "Optimizing Throughput with Network Coding," one-hour *invited* presentation, DIMACS Working Group on Network Coding, Rutgers University, New Brunswick, New Jersey, January 28, 2005.

[SA24] "Maximizing Throughput with Network Coding," one-hour *invited* presentation, *Department of Computer Science, Yale University*, New Haven, Connecticut, November 10, 2004.

[SA23] “iOverlay: A Lightweight Middleware Infrastructure for Overlay Application Implementations,” half-hour presentation, *the Fifth ACM/IFIP/USENIX International Middleware Conference (Middleware 2004)*, Toronto, Canada, October 18, 2004.

[SA22] “Mitigating Information Asymmetries to achieve Efficient Peer-to-Peer Queries,” half-hour presentation, *the 2004 International Conference on Parallel Processing (ICPP 2004)*, Montreal, Quebec, Canada, August 16, 2004.

[SA21] “Strategyproof Mechanisms towards Evolutionary Topology Formation in Autonomous Networks,” half-hour presentation, *the International Workshop on Theoretical Aspects of Wireless Ad hoc, Sensor and Peer-to-Peer Networks*, Chicago, Illinois, June 12, 2004.

[SA20] “sFlow: Towards Resource-Efficient and Agile Service Federation in Service Overlay Networks,” half-hour presentation, *the 24th IEEE International Conference on Distributed Computing Systems (ICDCS 2004)*, Tokyo, Japan, March 26, 2004.

[SA19] “Network Coding in Undirected Networks,” half-hour invited presentation, *the 38th Annual Conference on Information Science and Systems (CISS 2004)*, invited session on *Network Coding*, Princeton University, New Jersey, March 17, 2004.

[SA18] “FAIR: Fee Arbitrated Incentive Architecture in Wireless Ad Hoc Networks,” half-hour presentation, *the 10th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2004)*, Toronto, Canada, May 25, 2004.

[SA17] “On the Fundamental Capacity and Lifetime Limits of Energy-Constrained Wireless Sensor Networks,” half-hour presentation, *the 10th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2004)*, Toronto, Canada, May 25, 2004.

[SA16] “CodedStream: Live Media Streaming with Network Coding in Application-Layer Overlay Networks,” half-hour presentation, *the SPIE Conference on Multimedia Computing and Networking (MMCN 2004)*, Santa Clara, California, January 22, 2004.

[SA15] “Distributed Topology Control in Wireless Sensor Networks with Asymmetric Links,” half-hour presentation, *IEEE Globecom 2003*, Wireless Communications Symposium, San Francisco, California, December 4, 2003.

[SA14] “On Improving Data Dissemination Throughput in Application-Layer Overlay Networks,” half-hour invited presentation, *OpenSig 2003*, Columbia University, New York, New York, October 9, 2003.

[SA13] “To Play or to Control: A Game-based Control-theoretic Approach to Peer-to-Peer Incentive Engineering,” half-hour presentation, *The Eleventh IEEE International Workshop on Quality of Service (IWQoS 2003)*, Monterey, California, June 4, 2003.

[SA12] “SmartNode: Achieving 802.11 MAC Interoperability in Power-efficient Sensor Networks with Dynamic Range Adjustments,” half-hour presentation, *IEEE International Conference on Distributed Computing Systems (ICDCS 2003)*, Providence, Rhode

Island, May 22, 2003.

[SA11] “iFlow: Middleware-assisted Rendezvous-based Information Access for Mobile Ad Hoc Applications,” half-hour presentation, *ACM/USENIX Conference on Mobile Systems, Applications and Services (MobiSys 2003)*, San Francisco, California, May 8, 2003.

[SA10] “iFlow: Improving the Way We Access Information in Wireless Networks,” half-hour invited presentation, *Bell University Laboratories Wireless Research Conference*, Bell Mobility, Toronto, Ontario, October 30, 2002.

[SA9] “Applications in Hybrid/Heterogeneous Networks: Reality or Fiction?” one-hour invited presentation, *Bell University Laboratories Discoveries Session*, University of Toronto, Ontario, November 5, 2002.

[SA8] “QoS-aware Adaptive Services in Mobile Ad-hoc Networks,” *the Ninth IEEE International Workshop on Quality of Service (IWQoS 2001)*, Karlsruhe, Germany, June 7, 2001.

[SA7] “End-to-End Throughput in Wireless Ad Hoc Networks: Simulation-based Studies,” half-hour invited presentation, *Communications Group Graduate Seminar*, Department of Electrical and Computer Engineering, February 12, 2002.

[SA6] “Towards Integrated Runtime Solutions in QoS-aware Middleware,” half-hour presentation, *ACM Multimedia Middleware Workshop (M3W 2001)*, Ottawa, Canada, October 5, 2001.

[SA5] “A Hierarchical Graph Model for Probing Multimedia Applications,” half-hour presentation, *the IEEE International Conference on Multimedia and Expo (ICME 2001)*, Tokyo, Japan, August 23, 2001.

[SA4] “Impact of Control Theory on QoS Adaptation in Distributed Middleware Systems,” half-hour invited presentation, *the 2001 American Control Conference*, invited session on *Control Theory in Computer Systems*, Arlington, Virginia, June 26, 2001.

[SA3] “Existing Solutions and Future Challenges in Wireless Ad Hoc Networks,” one-hour invited presentation, *Bell University Laboratories Discoveries Session*, University of Toronto, Ontario, March 20, 2001.

[SA2] “A Dynamic Middleware Control Architecture for Distributed Multimedia Applications,” half-hour invited presentation, *the Workshop on Automated Control of Distributed Instrumentation (ACDI 1999)*, Urbana, Illinois, April 22, 1999.

[SA1] “Adaptive QoS Middleware Framework for Complex Flexible Applications,” half-hour invited presentation, *the NASA NREN QoS Workshop*, NASA Ames Research Center, California, August 18, 1998.

IEEE Communications Society.

◇ Member, the Association for Computing Machinery (ACM)

PROFESSIONAL
SERVICE
ACTIVITIES

◇ **Journal Editorships**

- ▷ *Guest Editor*, Special Issue on Network Coding, Proceedings of the IEEE, 2009 – 2010.
- ▷ *Associate Editor*, Elsevier Computer Networks Journal, 2009 – present.
- ▷ *Editorial Board Member*, ACM/Springer Multimedia Systems Journal, 2008 – present.
- ▷ *Associate Editor*, IEEE Transactions on Multimedia, 2006 – 2008.
- ▷ *Associate Editor*, IEEE Transactions on Vehicular Technology, 2005 – 2008.
- ▷ *Guest Editor*, Special Issue on Quality of Service in Heterogeneous Wired/Wireless Networks, ACM/Kluwer Wireless Networks, 2007.

◇ **Membership in Panels**

- ▷ *Panelist*, Networking Technology and Systems (NeTS) Review Panels (both regular and CAREER awards), National Science Foundation, U.S., Spring 2007, Spring 2008, Fall 2008, Spring 2009

◇ **Membership in Steering Committees**

- ▷ *Member of the Steering Committee*, International Workshop on Quality of Service (IWQoS), May 2004 – September 2007.

◇ **Conference Chairs**

- ▷ *Program Co-Chair*, the Sixth International Symposium on Network Coding (NetCod 2010), Toronto, Ontario, Canada, June 9 – 11, 2010.
- ▷ *Publication Chair*, the 29th International Conference on Distributed Computing Systems (ICDCS 2009), Montreal, Quebec, Canada, June 22 – 26, 2009.
- ▷ *Short Paper Program Chair*, Systems Track, ACM Multimedia 2009, Beijing, China, October 19 – 24, 2009.
- ▷ *Program Co-Chair*, First International Workshop on Wireless Network Coding (WiNC 2008), in conjunction with the Fifth IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2008), San Francisco, California, June 16 – 20, 2008.
- ▷ *Workshop Co-Chair*, ACM/IFIP/USENIX 8th International Middleware Conference (Middleware 2007), Newport Beach, Orange County, California, November 26 – 30, 2007.
- ▷ *ACM Student Research Competition (SRC) Co-chair*, ACM MobiCom 2006, Los Angeles, California, September 2006.
- ▷ *Program Co-chair*, the Third International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks (QShine 2006), University of Waterloo, Waterloo, Ontario, Canada, August 7 – 9, 2006.
- ▷ *Demonstration Co-chair*, ACM Multimedia 2006, Santa Barbara, California, October

22 – 28, 2006.

- ▷ *Program Co-chair*, the Twelfth IEEE International Workshop on Quality of Service (IWQoS 2004), successfully held in Montreal, Quebec, Canada, June 7 – 9, 2004. IWQoS 2004 has attracted 154 paper submissions, a record number in the history of IWQoS. With 30 papers accepted and an acceptance ratio of 19%, IWQoS 2004 has continued its tradition with a high-quality technical program, including two keynote addresses and a panel discussion.
- ▷ *Local Arrangements Chair*, ACM/IEEE/IFIP Middleware 2004, successfully held in Toronto, Ontario, Canada, October 18 – 22, 2004.

◇ **Membership in Technical Program Committees** (in reverse chronological order)

- ▷ ACM Mobicom 2010, Chicago, Illinois, September 2010.
- ▷ The 30th International Conference on Distributed Computing Systems (ICDCS 2010), Genoa, Italy, June 21 – 25, 2010.
- ▷ The 20th ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2010), Amsterdam, The Netherlands, June 2 – 4, 2010.
- ▷ The 9th International Workshop on Peer-to-Peer Systems (IPTPS 2010), co-located with the 7th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2010), April 28, 2010.
- ▷ IEEE INFOCOM 2010, San Diego, California, March 2010.
- ▷ ACM Multimedia Systems 2010 (MMSys 2010), Scottsdale, Arizona, February 22–23, 2010.
- ▷ The 17th IEEE International Conference on Network Protocols (ICNP 2009), Princeton, New Jersey, October 14 – 17, 2009.
- ▷ The Sixth IEEE International Conference on Mobile Ad-hoc and Sensor Systems (IEEE MASS 2009), Macau SAR, P. R. China, October 5 – 9, 2009.
- ▷ The 17th International Workshop on Quality of Service (IWQoS 2009), Charleston, South Carolina, July 13 – 15, 2009.
- ▷ The 6th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2009), Rome, Italy, June 22 – 26, 2009.
- ▷ The Second IEEE International Workshop on Wireless Network Coding (WiNC 2009), Rome, Italy, June 22, 2009.
- ▷ The 29th International Conference on Distributed Computing Systems (ICDCS 2009), Montreal, Quebec, Canada, June 22 – 26, 2009.
- ▷ IEEE International Conference on Communications (ICC 2009), Symposium on Wireless Networking, Dresden, Germany, June 14 – 18, 2009.
- ▷ The 19th ACM International workshop on Network and Operating Systems Support for Digital Audio and Video (ACM NOSSDAV 2009), Williamsburg, Virginia, June 3 – 5, 2009.

- ▷ The 1st ACM International Workshop on Medical-grade Wireless Networks (WiMD 2009), New Orleans, LA, May 18, 2009.
- ▷ The Tenth ACM International Symposium on Mobile Ad Hoc Networking and Computing (ACM MobiHoc 2009), New Orleans, LA, May 18 – 21, 2009.
- ▷ IEEE INFOCOM 2009, Rio de Janeiro, Brazil, April 19 – 25, 2009.
- ▷ IEEE Globecom 2008, Ad Hoc, Sensor and Mesh Networking Symposium, New Orleans, LA, November 30 – December 4, 2008.
- ▷ The Third International Workshop on Self-Organizing Systems (IWSOS 2008), Vienna, Austria, December 2008.
- ▷ ACM Multimedia 2008, Vancouver, Canada, October 27 – November 1, 2008.
- ▷ The Sixteenth International Conference on Network Protocols (ICNP 2008), Orlando, Florida, October 19 – 22, 2008.
- ▷ The 37th International Conference on Parallel Processing (ICPP 2007), Portland, Oregon, September 8 – 12, 2008.
- ▷ The Fifth International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine 2008), Hong Kong, July 28 – 31, 2008.
- ▷ The 28th International Conference on Distributed Computing Systems (ICDCS 2008), Beijing, China, June 17 – 20, 2008.
- ▷ The Sixteenth IEEE International Workshop on Quality of Service (IEEE IWQoS 2008), Enschede, the Netherlands, June 2 – 4, 2008.
- ▷ The Ninth ACM International Symposium on Mobile Ad Hoc Networking and Computing (ACM MobiHoc 2008), Hong Kong, May 26 – 30, 2008.
- ▷ IEEE International Conference on Communications (ICC 2008), Symposium on Wireless Networking, Beijing, China, May 19 – 23, 2008.
- ▷ IFIP Networking 2008, Singapore, May 5 – 9, 2008.
- ▷ IEEE INFOCOM 2008, Phoenix, Arizona, April 13 – 19, 2008.
- ▷ The Fourth International Workshop on Network Coding, Theory and Applications (NetCod 2008), Hong Kong, January 3 – 4, 2008.
- ▷ The Fifteenth Annual ACM/SPIE Conference on Multimedia Computing and Networking (MMCN 2008), San Jose, California, January 30 – 31, 2008.
- ▷ IEEE Global Telecommunications Conference (Globecom 2007), Symposium on Ad-hoc and Sensor Networks, Washington DC, November 26 – 30, 2007.
- ▷ The Fifteenth IEEE International Conference on Network Protocols (ICNP 2007), Beijing, China, October 16 – 19, 2007.
- ▷ ACM Multimedia 2007, Augsburg, Germany, September 23 – 29, 2007.
- ▷ International Workshop on Hot Topics in Mobile Peer-to-Peer Networks (HOT-MP2P), in conjunction with the 36th Annual Conference of the International Conference on Parallel Processing (ICPP 2007), Xi'An, China, September 10 – 14, 2007.
- ▷ New Trends in Network Architectures and Services: Second International Work-

- shop on Self-Organizing Systems (IWSOS 2007), English Lake District, UK, September 11 – 13, 2007.
- ▷ The Fourth International Conference on Quality of Service on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine 2007), Vancouver, British Columbia, Canada, August 14 – 17, 2007.
 - ▷ International Workshop on Theoretical and Algorithmic Aspects of Sensor and Ad-hoc Networks (WTASA 2007), Miami, Florida, June 28 – 29, 2007.
 - ▷ The 27th International Conference on Distributed Computing Systems (ICDCS 2007), Toronto, Canada, June 25 – 29, 2007.
 - ▷ IEEE International Conference on Communications 2007 (ICC 2007), Symposium of Wireless Ad Hoc and Sensor Networks, Glasgow, Scotland, UK, June 24 – 28, 2007.
 - ▷ The Fifteenth IEEE International Workshop on Quality of Service (IWQoS 2007), Chicago, Illinois, June 20 – 22, 2007.
 - ▷ The Seventeenth ACM International Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV 2007), Champaign-Urbana, Illinois, June 4 – 5, 2007.
 - ▷ The Second IFIP/IEEE International Workshop on Feedback Control Implementation and Design in Computing Systems and Networks (FeBID 2007), in conjunction with the 10th IFIP/IEEE Symposium on Integrated Management (IM 2007), Munich, Germany, May 25, 2007.
 - ▷ IFIP Networking 2007, Atlanta, Georgia, May 14 – 18, 2007.
 - ▷ IEEE INFOCOM 2007, Anchorage, Alaska, May 6 – 12, 2007.
 - ▷ The Third International Workshop on Network Coding, Theory and Applications (NetCod 2007), San Diego, California, January 29, 2007.
 - ▷ The Fourteenth Annual ACM/SPIE Conference on Multimedia Computing and Networking (MMCN 2007), San Jose, California, January 28 – February 1, 2007.
 - ▷ Workshop on Peer-to-Peer Multicasting 2007 (P2PM 2007), in conjunction with IEEE Consumer Communications and Networking Conference 2007 (CCNC 2007), Las Vegas, Nevada, January 11, 2007.
 - ▷ Technical Review Committee, Real-Time Systems Journal, Special Issue on Real-Time Wireless Sensor Networks (Guest Editors: Insup Lee, Chenyang Lu), 2007.
 - ▷ IEEE Global Telecommunications Conference (Globecom 2006), Symposium on Wireless Ad Hoc and Sensor Networks, San Francisco, California, November 27 – December 1, 2006.
 - ▷ The Fourteenth IEEE International Conference on Network Protocols (ICNP 2006) (*both the main conference and its poster session*), Santa Barbara, California, USA, November 12 – 15, 2006.
 - ▷ ACM Multimedia 2006, Santa Barbara, California, October 22 – 28, 2006.
 - ▷ First International Conference on Communications and Networking in China (Chi-

nacom 2006), Beijing, China, October 16 – 19, 2006.

- ▷ New Trends in Network Architectures and Services: International Workshop on Self-Organizing Systems (IWSOS 2006), University of Passau, Germany, September 18 – 20, 2006.
- ▷ 2006 International Conference on Parallel Processing (ICPP 2006), Columbus, Ohio, USA, August 14 – 18, 2006.
- ▷ The Second International Workshop on Incentive Based Computing (IBC 2006), in conjunction with the IEEE International Conference on Distributed Computing Systems (ICDCS 2006), Lisbon, Portugal, July 4 – 7, 2006.
- ▷ The 26th International Conference on Distributed Computing Systems (ICDCS 2006), Lisboa, Portugal, July 4 – 7, 2006.
- ▷ Symposium on Next Generation Mobile Networks (NGMN 2006), in conjunction with International Wireless Communications and Mobile Computing Conference (IWCMC 2006), Vancouver, British Columbia, Canada, July 3 – 6, 2006.
- ▷ The Fourteenth IEEE International Workshop on Quality of Service (IWQoS 2006), Yale University, New Haven, Connecticut, June 19 – 21, 2006.
- ▷ IFIP Networking 2006, Coimbra, Portugal, May 15 – 19, 2006.
- ▷ Second Workshop on Network Coding, Theory, and Applications (NetCod 2006), in conjunction with WiOpt 2006, Boston, Massachusetts, April 3 – 7, 2006.
- ▷ IEEE International Conference on Communications 2006 (ICC 2006), Istanbul, Turkey, June 11 – 15, 2006.
- ▷ The Fourth Annual IEEE International Conference on Pervasive Computing and Communications (Percom 2006), Pisa, Italy, March 13 – 17, 2006.
- ▷ The Thirteenth Annual ACM/SPIE Conference on Multimedia Computing and Networking (MMCN 2006), San Jose, California, January 17 – 20, 2006.
- ▷ The 2005 International Conference on Embedded And Ubiquitous Computing (EUC 2005), Nagasaki, Japan, December 6 – 9, 2005.
- ▷ IEEE Globecom 2005, Wireless Communications Symposium, St. Louis, Missouri, November 28 – December 2, 2005.
- ▷ ACM Multimedia 2005, Singapore, November 6 – 12, 2005.
- ▷ Second IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS 2005), Washington DC, November 7 – 10, 2005.
- ▷ The Second International Conference on Quality of Service in Heterogeneous Wired /Wireless Networks (QShine 2005), Orlando, Florida, August 20 – 24, 2005.
- ▷ The 2005 IEEE International Conference on Multimedia and Expo (ICME 2005), Amsterdam, The Netherlands, July 6 – 8, 2005.
- ▷ The Thirteenth IEEE International Workshop on Quality of Service (IWQoS 2005), Passau, Germany, June 21 – 23, 2005.
- ▷ The 34th International Conference on Parallel Processing (ICPP 2005), Oslo, Norway, June 14 – 17, 2005.

- ▷ The First Workshop on Network Coding, Theory and Applications (NetCod 2005), in conjunction with WiOpt 2005, Riva del Garda, Italy, April 7, 2005.
- ▷ IEEE Wireless Communications and Networking Conference (WCNC) 2005, New Orleans, Louisiana, March 13 – 17, 2005.
- ▷ IEEE INFOCOM 2005, Miami, Florida, March 13 – 17, 2005.
- ▷ IEEE Percom 2005, Kauai Island, Hawaii, March 8 – 12, 2005.
- ▷ The Twelfth Annual ACM/SPIE Conference on Multimedia Computing and Networking (MMCN) 2005, San Jose, California, January 17 – 20, 2005.
- ▷ The 8th International Conference On Principles Of Distributed Systems (OPODIS 2004), Grenoble, France, December 15 – 17, 2004.
- ▷ IEEE Globecom 2004, Dallas, Texas, November 29 – December 3, 2004.
- ▷ Workshop on Coordinated Quality of Service in Distributed Systems (COQODS), in conjunction with the 2004 IEEE International Conference On Networks (ICON 2004), Singapore, November 16 – 19, 2004.
- ▷ First International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks (QShine 2004), Dallas, Texas, October 18 – 20, 2004.
- ▷ IEEE International Conference on Distributed Computing Systems (ICDCS) 2004, Tokyo, Japan, March 23 – 26, 2004.
- ▷ EUROMICRO 2003, Track on “Multimedia Telecommunications: Multimedia Content Management and Distribution”, Turkey, September 1 – 6, 2003.
- ▷ IEEE International Conference on Distributed Computing Systems (ICDCS) 2003, Providence, Rhode Island, May 19 – 22, 2003.
- ▷ IEEE International Conference on Communications (ICC) 2003, Anchorage, Alaska, May 11 – 15, 2003.

UNIVERSITY
SERVICE
ACTIVITIES

- ◇ Director of Curriculum, Department of Electrical and Computer Engineering, University of Toronto, July 2009 – present
- ◇ Voting Member, Faculty Curriculum Committee, Faculty of Applied Science and Engineering, University of Toronto, July 2009 – present
- ◇ Co-chair, Working Group on Software Curriculum in Engineering Science, Faculty of Applied Science and Engineering, University of Toronto, July 2009 – present
- ◇ Chair, Computer Engineering Group, Department of Electrical and Computer Engineering, University of Toronto, July 2008 – July 2009
- ◇ Member, ECE Curriculum Matters Committee, Department of Electrical and Computer Engineering, October 2007 – July 2009
- ◇ Member, ECE PTR Committee, Department of Electrical and Computer Engineering, University of Toronto, May 2008 – June 2008
- ◇ Member, Task Force on On-Line System Integrating Curriculum Change Management, Course Option Selection, AU Tracking, Calendaring and Degree Verification, Faculty of Applied Science and Engineering, University of Toronto, April 2008 – July

2008

- ◇ Member, ECE Awards Committee, Department of Electrical and Computer Engineering, July 2007 – June 2008
- ◇ Member, Design and Implementation Committee on Web-based Graduate Admissions (in which I have led the design and implementation effort, and authored all on-line documentation), Department of Electrical and Computer Engineering, May 2004 – July 2006
- ◇ Supervisor, the *Magellan* Project, a web-based course administration and selection system for the flexible undergraduate curriculum, Department of Electrical and Computer Engineering, July 2003 – July 2006
- ◇ Member, Research Management Committee, Bell Canada University Laboratories, University of Toronto, June 2003 – October 2004
- ◇ Member, Undergraduate Curriculum Committee, Department of Electrical and Computer Engineering, September 2002 – May 2005
- ◇ Member, Executive Search Committee for the ECE Department Chair, Faculty of Applied Science and Engineering, September 2002 – May 2003
- ◇ Member, Departmental Faculty Search Committee, Computer and Communications, Department of Electrical and Computer Engineering, September 2002 – May 2003
- ◇ Member, Departmental Faculty Search Committee, Communications Networks, Department of Electrical and Computer Engineering, September 2000 – May 2002

TEACHING
RECOGNITIONS

Letter of Commendation for Teaching Excellence, from Department Chair, Department of Electrical and Computer Engineering, in recognition of teaching performance:

- ◇ APS 105S, *Computer Fundamentals*, Winter 2008.
- ◇ ECE 419S, *Distributed Systems*, Winter 2006.
- ◇ APS 105F, *Computer Fundamentals*, Fall 2005.
- ◇ ECE 419F, *Distributed Systems*, Fall 2004.
- ◇ ECE 419F, *Distributed Systems*, Fall 2003.
- ◇ ECE 419F, *Distributed Systems*, Fall 2002.

TEACHING
ACTIVITIES

University of Toronto, Toronto, Ontario, Canada
Edward S. Rogers Sr. Department of Electrical and Computer Engineering

Academic Term	Course	Enrollment
Fall 2000	ECE 419F: Distributed Systems	109
Winter 2001	ECE 1724S: Quality of Service Provisioning in Mobile Networks	32

Fall 2001	ECE 419F: Distributed Systems	65
Fall 2001	APS 105F: Computer Fundamentals	85
Winter 2002	ECE 1771S: Quality of Service Provisioning in Mobile Networks	12
Fall 2002	ECE 419F: Distributed Systems	100
Fall 2002	APS 105F: Computer Fundamentals	80
Winter 2003	ECE 1771S: Quality of Service Provisioning in Mobile Networks	23
Fall 2003	ECE 419F: Distributed Systems	118
Fall 2003	APS 105F: Computer Fundamentals	88
Winter 2004	ECE 1771S: Quality of Service Provisioning in Mobile Networks	16
Fall 2004	ECE 419F: Distributed Systems	93
Fall 2004	APS 105F: Computer Fundamentals	93
Winter 2005	ECE 1771S: Quality of Service Provisioning in Mobile Networks	29
Fall 2005	APS 105F: Computer Fundamentals	97
Winter 2006	ECE 419S: Distributed Systems	100
Winter 2006	ECE 1771S: Quality of Service Provisioning in Mobile Networks	15
Winter 2008	ECE 344S: Operating Systems	78
Winter 2008	APS 105S: Computer Fundamentals	52
Winter 2008	ECE 1771S: Quality of Service	16
Fall 2008	APS 105F: Computer Fundamentals	94
Winter 2009	ECE 344S: Operating Systems	95
Winter 2009	ECE 1771S: Quality of Service	25

GRADUATE
SUPERVISION

◇ **Students Graduated with the Doctor of Philosophy Degree** (Total: 6)

<i>Name</i>	<i>Starting Date, Graduation Date and Current Employment</i>	<i>Dissertation Title and Grade</i>
Chuan Wu	September 2004 – July 2008, now Assistant Professor, Department of Computer Science, University of Hong Kong, Hong Kong, China	Large-Scale Peer-to-Peer Streaming: Modeling, Measurements, and Op- timizing Solutions
Mea Wang	September 2004 – April 2008, now Assistant Professor, De- partment of Computer Sci- ence, University of Calgary, Calgary, Alberta, Canada	A Quest for High-Performance Peer-to-Peer Live Streaming

Jiang Guo	September 2001 – August 2007, now Software Developer, Telephoto Technologies Inc., Mississauga, Ontario, Canada	Efficient Algorithms in Selfish Peer-to-Peer Networks: Design and Implementation
Ying Zhu	June 2001 – August 2006, now Assistant Professor, Faculty of Business and Information Technology, University of Ontario Institute of Technology	High-bandwidth Data Dissemination in Overlay Networks
Weihong Wang	September 2001 – December 2005, now Senior Researcher, HP Laboratories China	Market-based Distributed Optimization in Autonomous Networks
Zongpeng Li	June 2001 – September 2005, now Assistant Professor, Department of Computer Science, University of Calgary	On Achieving Optimal Throughput in Data Networks

◇ **Students Graduated with the Masters of Applied Science Degree (Total: 10¹)**

<i>Name</i>	<i>Starting Date, Graduation Date and Current Employment</i>	<i>Dissertation Title and Grade</i>
Di Niu	September 2006 – January 2009, now PhD Candidate, iQua Research Group, University of Toronto	On the Resilience of Network Coding in Peer-to-Peer Networks and its Applications (A)
Chen Feng	September 2006 – January 2009, now PhD Candidate, iQua Research Group, University of Toronto	On Large-Scale Peer-to-Peer Streaming Systems (A+)
Xinyu Zhang	September 2005 – May 2007, now PhD student, University of Michigan	Drift: A Highly Condensed Emulation Framework for Mobile Nodes in Server Clusters (A)
Kevin Yuen	September 2004 – April 2006, now at IBM Toronto Laboratories, Toronto, Ontario	A Distributed Framework for Correlated Data Gathering in Sensor Networks (A) (<i>co-supervised with Professor Ben Liang</i>)
Xin Zhou	September 2001 – September 2004, now at Protractor Software Inc., Toronto, Ontario	<i>iFlow</i> and Beyond: Bandwidth-Efficient and Delay-Aware Information Access in Mobile Ad Hoc Networks (A)

¹In the case that a student is co-supervised, each co-supervisor contributed equally to the supervision of the student.

Gregory Hartl	September 2002 – August 2004, now at Workbrain, Inc., Toronto, Ontario	On the Use of Data Inference for Energy Conservation in Wireless Sensor Networks (A)
Mea Wang	September 2002 – April 2004, now Assistant Professor, Department of Computer Science, University of Calgary, Calgary, Alberta, Canada	<i>sFlow</i> : Towards Resource-Efficient and Agile Service Federation in Service Overlay Networks (A)
Selwyn Yuen	September 2002 – January 2004, now at Canada Pension Plan Investment Board, Toronto, Ontario	<i>iEvolve</i> : Incentive Mechanisms for Evolutionary Topology Formation in Autonomous Networks with Strategic Agents (A+)
Shahid Bashir	September 2000 – September 2002, now at Ontario Power Generation, Pickering, Ontario	QoS-aware Service Discovery Protocols in Mobile Ad Hoc Networks (A)
Edmond Poon	September 2000 – September 2002, now at Dr Robot, Inc, Markham, Ontario	Fair Scheduling and Power-aware Protocols in Wireless Ad Hoc Networks (A)
Jilei Liu	September 2000 – September 2002, now at the Bank of Montreal, Toronto, Ontario	Power-aware Protocols in Wireless Ad Hoc Networks (A)
Karen H. Wang	September 1999 – September 2001, now at Intel Corporation, San Diego, California	Mobility-based Clustering and Partition Prediction in Wireless Ad Hoc Networks (A) (<i>co-supervised with Professor Alberto Leon-Garcia</i>)

◇ **Current Students in the Masters of Applied Science Program** (Total: 6)

<i>Name</i>	<i>Duration of Study</i>
Junqi Yu (<i>co-supervised with Professor Ben Liang</i>)	September 2008 – present
Yuan Feng	September 2008 – present
Jiahua Wu	September 2007 – present
Henry Hong Xu	September 2007 – present
Zimu Liu	September 2007 – present
Elias Kehdi	September 2007 – present

◇ **Current Students in the Doctor of Philosophy Program** (Total: 5)

<i>Name</i>	<i>Duration of Study</i>
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Chen Feng (<i>co-supervised with Professor Frank Kschischang</i>)	September 2008 – present
Di Niu	September 2008 – present
Jin Jin	September 2006 – present
Hassan Shojania	January 2006 – present
Yunfeng Lin (<i>co-supervised with Professor Ben Liang</i>)	September 2005 – present

UNDERGRADUATE ◇ **Supervision of Engineering Science Theses** (Total: 6)

SUPERVISION

<i>Name</i>	<i>Duration of Study</i>	<i>Thesis Topic</i>
William Krick	September 2007 – April 2008	Peer-to-Peer On-Demand Streaming
Sahar Boroujerdi	September 2003 – April 2004	Performance Evaluation of Fee Arbitrated Incentive Routing
Alvin Mok	January 2003 – April 2003	FAIR: Fee Arbitrated Incentive Routing
Yan Chen	January 2003 – April 2003	PMFS: A Reliable File Storage System in Partitionable Mobile Wireless Ad Hoc Networks
Stephanie Wang	September 2000 – May 2001	Peer-to-Peer Applications in Mobile Ad Hoc Networks
Peter Yeung	September 2000 – December 2000	Server-assisted Reconfigurations of Palm-based Applications

◇ **Supervision of Design Project Teams** (Total: 24)

<i>Team Members</i>	<i>Academic Year</i>	<i>Title</i>
Arthur Ramir Tupaz (CE), Chin Hwee Chuah (EE), Paul Salinas (CE), Ahmed Farag (EE)	2008-2009	A Productivity Application on the iPhone
Jiang John Zhou (EE), Kun Liu (CE), Hou Jie Yan (EE)	2008-2009	A Productivity Application on the iPhone
Sheng Ye (EE), Hao Wang (CE)	2008-2009	GPS on iPhone/iPod Touch
Nathan Chan (CE), Andrew Toth (CE), Anthony Ricci (CE)	2008-2009	An Interactive Game on the iPhone
Danny Hui (CE), Boon-Hau Teh (CE), Monasin Khan (CE)	2007-2008	Scalable Tracking Servers
Tikhon Botchkarev (CE), Ka Ming Lau (CE)	2007-2008	Peer Discovery and Selection Algorithms
Danning Jiang (CE), Xiao Jin (CE)	2007-2008	Secure and Fast Upload to Multiple Servers (Team 1)
Michael Szuty (CE), Patrick Tsang (CE), Terry To (EE)	2007-2008	Secure and Fast Upload to Multiple Servers (Team 2)
Alan Ng (CE), Lan Nguyen (CE)	2007-2008	Secure and Fast Upload to Multiple Servers (Team 3)
Allen Pan (CE), Nitin Mathur (CE), Mathew Tsang (CE)	2005-2006	Online Registration for Credit Card
Jordan Gurrieri (CE), Patryk Dzwonek (CE)	2005-2006	Microsoft Marketing Execution Automated Dashboard
Hosseini Nima (CE), Hosseini Iman (CE), Amin Kazemi Saman (CE)	2004-2005	Publish-Subscribe based BlackBerry Client
Wilson Waining Tso (CE), Patrick Suen (CE)	2003-2004	Implementation of Distributed Applications and Protocols on Real-World Wide-Area Network Testbeds (Team 1)
Victor Chow (CE), Pearl Pei-Yu Hsu (CE), James Chuen Pong Lo (CE), Glen Yi (CE)	2003-2004	Implementation of Distributed Applications and Protocols on Real-World Wide-Area Network Testbeds (Team 2)
Sasitheran Shanmugarajah (CE), Rehan Siddiqui (CE), Steven Wolfman (CE)	2002-2003	Scalable Behavioral Simulation of Application-layer Peer-to-Peer Networking (Team 1)

Richard Kwok (CE), Alan Kwok Chi Wong (CE), Falcon Chan (CE), Michael SY Leung (CE)	2002-2003	Scalable Behavioral Simulation of Application-layer Peer-to-Peer Networking (Team 2)
Brian J. Dennis (CE), Eric Reppo (CE), S. Jalal Shah (CE)	2002-2003	Scalable Behavioral Simulation of Application-layer Peer-to-Peer Networking (Team 3)
Jan Bouse (CE), Aonan Yang (CE), Johnson Cheng (CE), Matthew Lucid (CE)	2002-2003	Scalable Behavioral Simulation of Application-layer Peer-to-Peer Networking (Team 4)
Waqqas Shafique (CE), Leo Tumwattana (CE), Raymond Tong (CE), Muhammad Da-wood Ahmad (EE)	2002-2003	Scalable Behavioral Simulation of Application-layer Peer-to-Peer Networking (Team 5)
John Lui (CE), Edith Lo (CE), Winnie Lau (CE), Herbert Ho (CE)	2001-2002	Pure Java Performance Visualization for Java-based Network Traffic Simulations
Mark Andruchow (CE), Samer Carcar (CE), Michael Jessop (CE), Mark Lin (CE)	2001-2002	A Java-based Graphical Editing Tool for Initializing Network Simulations
Yiu-Kit Lai (CE), Tsz Chung Tong (CE), Ulysses Lau (CE)	2001-2002	Java-based Network Simulation Components for Power-aware Topology Control Protocols in Wireless Ad-hoc Networks
Michael Nitsopoulos (CE), Michael Assad (CE), Geoff Evason (CE)	2000-2001	Online Buyer/Classifieds Featuring P2P Computing
Chris Davis (CE), Kanchana Sastri (CE)	2000-2001	A Simulation-based Comparison Study of Routing Protocols in Mobile Ad hoc Networks