

Baochun Li

PRESENT APPOINTMENT	Professor Edward S. Rogers Sr. Department of Electrical and Computer Engineering University of Toronto 10 King's College Road Toronto, Ontario M5S 3G4, Canada	<i>Office:</i> (416) 946-7338 <i>Fax:</i> (416) 978-4425 <i>Email:</i> bli@eecg.toronto.edu <i>Web:</i> iqua.ece.toronto.edu/bli
PERSONAL INFORMATION	<i>Citizenship</i> Canadian	
RESEARCH INTERESTS	Large-scale multimedia systems, cloud computing, peer-to-peer networks, applications of network coding, and wireless networks.	
EDUCATION	University of Illinois at Urbana-Champaign , Urbana, Illinois, USA <i>Department of Computer Science</i> <ul style="list-style-type: none">◇ Ph.D., Computer Science, May 2000<ul style="list-style-type: none">▷ <i>Dissertation:</i> “Agilos: A Middleware Control Architecture for Application-Aware Quality of Service Adaptations”▷ <i>Advisor:</i> Klara Nahrstedt, Department of Computer Science▷ <i>Thesis Committee:</i> Vaduvur Bharghavan (ECE), Geneva Belford (Computer Science), Roy H. Campbell (Computer Science)◇ M.Sc., Computer Science, May 1997<ul style="list-style-type: none">▷ <i>Dissertation:</i> “Adaptive Behavior of Quality of Service in Distributed Multimedia Systems”▷ <i>Advisor:</i> Klara Nahrstedt, Department of Computer Science Tsinghua University , Beijing, People's Republic of China <i>Department of Computer Science and Technology</i> <ul style="list-style-type: none">◇ B.Engr., Computer Science and Technology, July 1995	
HONOURS AND AWARDS	<ul style="list-style-type: none">◇ Inaugural recipient, <i>Distinguished Educator Award</i> (in the “under 40” category), Department of Computer Science, University of Illinois at Urbana-Champaign, November 4, 2011.◇ <i>Departmental Teaching Award</i>, for excellence in undergraduate teaching in Fall 2010, Department of Electrical and Computer Engineering, University of Toronto. The award was determined with the student vote conducted by the ECE Student Clubs at the end of the term.◇ <i>McLean Award</i>, University of Toronto, December 2009.◇ <i>Bell Canada Endowed Chair in Computer Engineering</i>, University of Toronto, July 2005 – June 2015 (renewed in June 2010 for a second five-year term).	

- ◇ *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.
- ◇ *Outstanding Teaching Assistant Award*, Department of Computer Science, University of Illinois at Urbana-Champaign, November 1999.

- BEST PAPER AWARDS**
- ◇ *Best Paper Award*, IEEE Globecom 2011, Wireless Networking Symposium, IEEE Communications Society
 - ▷ For the paper co-authored with Jie Dai, Bo Li, Fangming Liu, and Jiangchuan Liu, titled “Collaborative Caching for Video Streaming among Selfish Wireless Service Providers,” published in the Proceedings of IEEE Globecom 2011, December 2011.
 - ◇ *2009 Multimedia Communications Best Paper Award*, the Multimedia Communications Technical Committee, IEEE Communications Society, 2009
 - ▷ For the paper co-authored with Mea Wang, titled “R²: 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.

**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, June 2009, June 2010, June 2011

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

Teaching Assistant, CS 314: Multimedia Systems Design

May 1999 – August 1999

Teaching Assistant

September 1996 – May 1997

◇ *CS 397kn: Multimedia Systems Design*

◇ *CS 323: Operating Systems Design*

Research Assistant

August 1995 – May 1996

◇ supervised by Professor Daniel Reed

SCHOLARLY	Best Paper Awards	4
RESEARCH	Refereed Publications in Journals	48
ACHIEVEMENTS AT A	Refereed Publications in Magazines	1
GLANCE	Refereed Publications in Book Chapters	5
	Refereed Publications in Conference Proceedings	165
	Invited Publications	12
	Dissertations	2
	H-Index computed by Google Scholar Citations	44 (as of May 2012)
	i10-Index computed by Google Scholar Citations	123 (as of May 2012)
	Total of publications in academic career (January 1998 – present)	230

PUBLICATIONS ◇ **Refereed Journal Articles** (in reverse chronological order)

[J48] Yuan Feng, Zimu Liu, Baochun Li. “GestureFlow: QoE-Aware Streaming of Multi-Touch Gestures in Interactive Multimedia Applications,” in *IEEE Journal on Selected Areas in Communications*, Special Issue on QoE-Aware Wireless Multimedia Systems, 2012.

[J47] Hong Xu, Baochun Li. “Resource Allocation with Flexible Channel Cooperation in Cognitive Radio Networks,” in *IEEE Transactions on Mobile Computing*, 2012.

[J46] Fangming Liu, Bo Li, Lili Zhong, Baochun Li, Hai Jin, Xiaofei Liao. “Flash Crowd in P2P Live Streaming Systems: Fundamental Characteristics and Design Implications,” in *IEEE Transactions*

on *Parallel and Distributed Systems*, 2012.

[J45] Fangming Liu, Bo Li, Baochun Li, Hai Jin. “Peer-Assisted On-Demand Streaming: Characterizing Demands and Optimizing Supplies,” in *IEEE Transactions on Computers*, 2012.

[J44] Jie Dai, Fangming Liu, Bo Li, Baochun Li, Jiangchuan Liu. “Collaborative Caching in Wireless Video Streaming Through Resource Auctions,” in *IEEE Journal on Selected Areas in Communications*, Special Issue on Cooperative Networking Challenges and Applications, 2012.

[J43] Shreya Maheshwar, Zongpeng Li, Baochun Li. “Bounding the Coding Advantage of Combination Network Coding in Undirected Networks,” in *IEEE Transactions on Information Theory*, vol. 58, no. 2, pp. 570-584, February 2012.

[J42] Chuan Wu, Baochun Li, Shuqiao Zhao. “Diagnosing Network-wide P2P Live Streaming Inefficiencies,” in *ACM Transactions on Multimedia Computing, Communications and Applications*, vol. 8s, no. 1, pp. 13:1-13:19, February 2012.

[J41] Xinyu Zhang, Baochun Li. “On the Market Power of Network Coding in P2P Content Distribution Systems,” in *IEEE Transactions on Parallel and Distributed Systems*, vol. 22, no. 12, pp. 2063-2070, December 2011.

[J40] Xinyu Zhang, Baochun Li. “Network Coding Aware Dynamic Subcarrier Assignment in OFDMA Based Wireless Networks,” in *IEEE Transactions on Vehicular Technology*, vol. 60, no. 9, pp. 4609-4619, November 2011.

[J39] Di Niu, Baochun Li. “Analyzing the Resilience-Complexity Tradeoff of Network Coding in Dynamic P2P Networks,” in *IEEE Transactions on Parallel and Distributed Systems*, vol. 22, no. 11, pp. 1842-1850, November 2011.

[J38] Chuan Wu, Baochun Li, Shuqiao Zhao. “On Dynamic Server Provisioning in Multi-channel P2P Live Streaming,” in *IEEE/ACM Transactions on Networking*, vol. 19, no. 5, pp. 1317-1330, October 2011.

[J37] Ronny Yongho Kim, Jin Jin, Baochun Li. “Scattered Random Network Coding for Efficient Transmission in Multihop Wireless Networks,” in *IEEE Transactions on Vehicular Technology*, vol. 60, no. 5, pp. 2383-2388, June 2011.

[J36] Ajay Gopinathan, Zongpeng Li, Baochun Li. “Group Strategyproof Multicast in Wireless Networks,” in *IEEE Transactions on Parallel and Distributed Systems*, vol. 22, no. 5, pp. 708-715, May 2011.

[J35] Baochun Li, Di Niu. “Random Network Coding in Peer-to-Peer Networks: From Theory to Practice,” in *Proceedings of the IEEE*, vol. 99, no. 3, pp. 513-523, March 2011.

[J34] Fangming Liu, Ye Sun, Bo Li, Baochun Li, Xinyan Zhang. “FS2You: Peer-Assisted Semi-Persistent Online Hosting at a Large Scale,” in *IEEE Transactions on Parallel and Distributed Systems*, vol. 21, no. 10, pp. 1442-1457, October 2010.

- [J33] Ronny Yongho Kim, Jin Jin, Baochun Li. “Drizzle: Cooperative Symbol-Level Network Coding in Multi-Channel Wireless Networks,” in *IEEE Transactions on Vehicular Technology*, vol. 59, no. 3, pp. 1415-1432, March 2010.
- [J32] Yunfeng Lin, Ben Liang, Baochun Li. “Priority Random Linear Codes in Distributed Storage Systems,” in *IEEE Transactions on Parallel and Distributed Systems*, vol. 20, no. 11, pp. 1653-1667, November 2009.
- [J31] 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.
- [J30] Xinyu Zhang, Baochun Li. “Optimized Multipath Network Coding in Lossy Wireless Networks,” in *IEEE Journal on Selected Areas in Communications*, Special Issue on Network Coding for Wireless Communication Networks, vol. 27, no. 5, pp. 622-634, June 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, 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.
- [J27] 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.
- [J26] 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.
- [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] 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.
- [J13] 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.
- [J12] 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.
- [J11] 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.

- [J10] Yongyi Mao, Frank R. Kschischang, Baochun Li, Subbarayan Pasupathy. “A Factor Graph Approach to Link Loss Monitoring in Wireless Sensor Networks,” in *IEEE Journal on Selected Areas in Communications*, Special Issue on Self-Organizing Distributed Collaborative Sensor Networks, vol. 23, pp. 820-829, April 2005.
- [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, 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 Quality 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**

- [BC5] Chen Feng, Baochun Li. “Network Coding for Content Distribution and Multimedia Stream-

ing in Peer-to-Peer Networks,” in *Network Coding: Fundamentals and Applications*, Muriel Medard and Alex Sprintson, Editors, pp. 61-86, Academic Press, ISBN 978-0-12-380918-6, Hardback, 2012.

[BC4] Hong Xu, Baochun Li. “Network Coding in Relay-based Networks,” in *Cooperative Cellular Wireless Networks*, Ekram Hossain, Dong In Kim, Vijay Bhargava, Editors, pp. 324-344, Cambridge University Press, ISBN 978-0-521-76712-5, Hardback, 2011.

[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, Editors, pp. 359-377, Cambridge University Press, ISBN 978-0-521-11368-7, Hardback, 2011.

[BC2] Yuan Feng, Baochun Li. “Peer-assisted Media Streaming: A Holistic Review,” in *Intelligent Multimedia Communication: Techniques and Applications*, Changwen Chen, Zhu Li, Shiguo Lian, Editors, pp. 317-340, Springer-Verlag, ISBN 978-3-642-11685-8, 2010.

[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, 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)

[C165] Hong Xu, Baochun Li. “A General and Practical Datacenter Selection Framework for Cloud Services,” in the Proceedings of the *5th IEEE International Conference on Cloud Computing (IEEE Cloud 2012)*, Honolulu, Hawaii, June 24-29, 2012 (acceptance ratio: 17%).

[C164] Boyang Wang, Baochun Li, Hui Li. “Oruta: Privacy-Preserving Public Auditing for Shared Data in the Cloud,” in the Proceedings of the *5th IEEE International Conference on Cloud Computing (IEEE Cloud 2012)*, Honolulu, Hawaii, June 24-29, 2012 (acceptance ratio: 17%).

[C163] Boyang Wang, Baochun Li, Hui Li. “Knox: Privacy-Preserving Auditing for Shared Data with Large Groups in the Cloud,” in the Proceedings of the *10th International Conference on Applied Cryptography and Network Security (ACNS 2012)*, Singapore, June 26-29, 2012 (acceptance ratio: 17%).

[C162] Yuan Feng, Baochun Li, Bo Li. “Postcard: Minimizing Costs on Inter-Datacenter Traffic with Store-and-Forward,” in the Proceedings of the *2nd International Workshop on Data Center Performance (DCPerf2012)*, in conjunction with the 32nd International Conference on Distributed Computing Systems (ICDCS 2012), Macau, China, June 21, 2012.

[C161] Wei Wang, Baochun Li, Ben Liang. “Towards Optimal Capacity Segmentation with Hybrid Cloud Pricing,” in the Proceedings of the *32nd International Conference on Distributed Computing*

Systems (ICDCS 2012), Macau, China, June 18 – 21, 2012 (acceptance ratio: 13%).

[C160] Di Niu, Chen Feng, Baochun Li. “On Pricing Cloud Bandwidth Reservations under Demand Uncertainty,” in the Proceedings of *ACM SIGMETRICS/Performance 2012*, London, UK, June 11 – 15, 2012 (acceptance ratio: 15%).

[C159] Nan Hua, Ashwin Lall, Baochun Li, Jun Xu. “Towards Optimal Error-Estimating Codes through the Lens of Fisher Information Analysis,” in the Proceedings of *ACM SIGMETRICS/Performance 2012*, London, UK, June 11 – 15, 2012 (acceptance ratio: 15%).

[C158] Hong Xu, Baochun Li. “Maximizing Revenue with Dynamic Cloud Pricing: The Infinite Horizon Case,” in the Proceedings of *IEEE ICC 2012, Next-Generation Networking Symposium*, Ottawa, Ontario, Canada, June 10 – 15, 2012 (acceptance ratio: 37%).

[C157] Di Niu, Chen Feng, Baochun Li. “A Theory of Cloud Bandwidth Pricing for Video-on-Demand Providers,” in the Proceedings of *IEEE INFOCOM 2012*, Orlando, Florida, March 25 – 30, 2012 (acceptance ratio: 18%).

[C156] Di Niu, Hong Xu, Baochun Li, Shuqiao Zhao. “Quality-Assured Cloud Bandwidth Auto-Scaling for Video-on-Demand Applications,” in the Proceedings of *IEEE INFOCOM 2012*, Orlando, Florida, March 25 – 30, 2012 (acceptance ratio: 18%).

[C155] Yuan Feng, Baochun Li, Bo Li. “Bargaining Towards Maximized Resource Utilization in Video Streaming Datacenters,” in the Proceedings of *IEEE INFOCOM 2012*, Orlando, Florida, March 25 – 30, 2012 (acceptance ratio: 18%).

[C154] Zimu Liu, Yuan Feng, Baochun Li. “Socialize Spontaneously with Mobile Applications,” in the Proceedings of *IEEE INFOCOM 2012*, Orlando, Florida, March 25 – 30, 2012 (acceptance ratio: 18%).

[C153] Yuefei Zhu, Baochun Li, Zongpeng Li. “Truthful Spectrum Auction Design for Secondary Networks,” in the Proceedings of *IEEE INFOCOM 2012*, Orlando, Florida, March 25 – 30, 2012 (acceptance ratio: 18%).

[C152] Jie Dai, Zhan Hu, Bo Li, Jiangchuan Liu, Baochun Li. “Collaborative Hierarchical Caching with Dynamic Request Routing for Massive Content Distribution,” in the Proceedings of *IEEE INFOCOM 2012*, Orlando, Florida, March 25 – 30, 2012 (acceptance ratio: 18%).

[C151] Nan Hua, Ashwin Lall, Baochun Li, Jun Xu. “A Simpler and Better Design of Error Estimating Coding,” in the Proceedings of *IEEE INFOCOM 2012*, Orlando, Florida, March 25 – 30, 2012 (acceptance ratio: 18%).

[C150] Zimu Liu, Yuan Feng, Baochun Li. “When Multi-Touch Meets Streaming,” in the Proceedings of *10th International Conference on Mobile and Ubiquitous Multimedia (MUM 2011)*, pp. 23-32, Beijing, China, December 7-9, 2011.

[C149] Hong Xu, Jin Jin, Baochun Li. “YMMV: Multiple Session Multicast with MIMO,” in the Proceedings of *IEEE Globecom 2011, Wireless Networking Symposium*, Houston, Texas, Decem-

ber 5 – 9, 2011 (acceptance ratio: 36%).

[C148] Jie Dai, Bo Li, Fangming Liu, Baochun Li, Jiangchuan Liu. “Collaborative Caching for Video Streaming among Selfish Wireless Service Providers,” in the Proceedings of *IEEE Globecom 2011*, Wireless Networking Symposium, Houston, Texas, December 5 – 9, 2011 (acceptance ratio: 36%).

[C147] Xiangwen Chen, Minghua Chen, Baochun Li, Yao Zhao, Yunnan Wu, Jin Li. “Celerity: A Low-Delay Multi-Party Conferencing Solution,” in the Proceedings of *ACM Multimedia 2011* (long paper), Scottsdale, Arizona, November 28 – December 1, 2011 (acceptance ratio: 17%).

[C146] Di Niu, Hong Xu, Baochun Li, Shuqiao Zhao. “Risk Management for Video-on-Demand Servers leveraging Demand Forecast,” in the Proceedings of *ACM Multimedia 2011* (short paper), Scottsdale, Arizona, November 28 – December 1, 2011.

[C145] Jun Li, Xin Wang, Baochun Li. “Pipelined Regeneration with Regenerating Codes for Distributed Storage Systems,” in the Proceedings of *the 2011 International Symposium on Network Coding (NetCod 2011)*, Beijing, China, July 25 – 27, 2011.

[C144] Lei Hua, Shuang Yang, Qin Jia, Xin Wang, Baochun Li. “PCube: Improving Power Efficiency in Data Center Networks,” in the Proceedings of *the 4th International Conference on Cloud Computing (IEEE Cloud 2011)*, Washington DC, July 4 – 9, 2011 (acceptance ratio: 18%).

[C143] Wei Wang, Baochun Li, Ben Liang. “District: Embracing Local Markets in Truthful Spectrum Double Auctions,” in the Proceedings of *the 8th IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2011)*, Salt Lake City, Utah, June 27 – 30, 2011 (acceptance ratio: 22%).

[C142] Xiangwen Chen, Minghua Chen, Baochun Li, Yao Zhao, Yunnan Wu, Jin Li. “Celerity: Towards Low-Delay Multi-Party Conferencing Over Arbitrary Network Topologies,” in the Proceedings of *the 21st International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2011)*, Vancouver, British Columbia, June 2 – 3, 2011 (acceptance ratio: 34%).

[C141] Di Niu, Baochun Li, Shuqiao Zhao. “Understanding Demand Volatility in Large VoD Systems,” in the Proceedings of *the 21st International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2011)*, Vancouver, British Columbia, June 2 – 3, 2011 (acceptance ratio: 34%).

[C140] Anh Tuan Nguyen, Baochun Li, Michael Welzl, Frank Eliassen. “Stir: Spontaneous Social Peer-to-Peer Streaming,” in the Proceedings of *the 14th IEEE Global Internet Symposium 2011 (GI 2011)*, Shanghai, China, April 15, 2011.

[C139] Hong Xu, Baochun Li. “Egalitarian Stable Matching for VM Migration in Cloud Computing,” in the Proceedings of *the IEEE INFOCOM 2011 Workshop on Cloud Computing*, Shanghai, China, pp. 637-642, April 15, 2011.

[C138] Yuan Feng, Zimu Liu, Baochun Li. “GestureFlow: Streaming Gestures to an Audience,” in

the Proceedings of *IEEE INFOCOM 2011*, Shanghai, China, April 11 – 15, 2011 (acceptance ratio: 16%).

[C137] Di Niu, Baochun Li. “Asymptotic Optimality of Randomized Peer-to-Peer Broadcast with Network Coding,” in the Proceedings of *IEEE INFOCOM 2011*, Shanghai, China, April 11 – 15, 2011 (acceptance ratio: 16%).

[C136] Jie Dai, Bo Li, Fangming Liu, Baochun Li, Hai Jin. “On the Efficiency of Collaborative Caching in ISP-aware P2P Networks,” in the Proceedings of *IEEE INFOCOM 2011*, Shanghai, China, April 11 – 15, 2011 (acceptance ratio: 16%).

[C135] Fangming Liu, Shijun Shen, Bo Li, Baochun Li, Hao Yin, Sanli Li. “Novasky: Cinematic-Quality VoD in a P2P Storage Cloud,” in the Proceedings of *IEEE INFOCOM 2011*, Shanghai, China, April 11 – 15, 2011 (acceptance ratio: 16%).

[C134] Hong Xu, Baochun Li. “Seen As Stable Marriages,” in the Proceedings of *IEEE INFOCOM 2011 Mini-Conference*, Shanghai, China, April 11 – 15, 2011 (acceptance ratio: 8% in remaining papers).

[C133] Di Niu, Zimu Liu, Baochun Li, Shuqiao Zhao. “Demand Forecast and Performance Prediction in Peer-Assisted On-Demand Streaming Systems,” in the Proceedings of *IEEE INFOCOM 2011 Mini-Conference*, Shanghai, China, April 11 – 15, 2011 (acceptance ratio: 8% in remaining papers).

[C132] Yuan Feng, Baochun Li, Bo Li. “Peer-Assisted VoD Prefetching in Double Auction Markets,” in the Proceedings of the *18th IEEE International Conference on Network Protocols (ICNP 2010)*, Kyoto, Japan, October 5 – 8, 2010 (acceptance ratio: 18%).

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[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 11st 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, 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 Multimedia 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, 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, 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 reverse chronological order)

[IP12] Baochun Li, Yuan Feng, Bo Li. “Rise and Fall of the Peer-to-Peer Empire,” in *Tsinghua Science and Technology*, vol. 17, no. 1, pp. 1-16, February 2012.

[IP11] Baochun Li, Yunnan Wu. “Scanning the Issue: Network Coding,” in *Proceedings of the IEEE*, vol. 99, no. 3, pp. 363-365, March 2011.

[IP10] Yunnan Wu, Baochun Li. “Point of View: Network Coding,” in *Proceedings of the IEEE*, Vol. 8, No. 5, pp. 643-644, May 2010.

[IP9] Chen Feng, Baochun Li. “Network Coding for Peer-Assisted Multimedia Streaming,” in *IEEE Multimedia Communications Technical Committee E-Letter*, IEEE Communications Society, Vol. 5, No. 2, pp. 9-12, March 2010.

[IP8] 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.

[IP7] 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.

[IP6] 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.

[IP5] 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.

[IP4] 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.

[IP3] 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.

[IP2] 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.

[IP1] 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

[SA50] “Top Tips for Writing Top-Notch Research Papers,” Invited Seminar, Department of Computer Science and Technology, Tsinghua University, Beijing, China, October 27, 2011.

[SA49] “Multimedia Networking: What’s Over and What’s Coming?” Invited Panel Presentation, IEEE International Conference on Computer Communication Networks (ICCCN 2011), Maui, Hawaii, August 1, 2011.

[SA48] “Seen as Stable Marriages,” one-hour invited presentation, Huazhong University of Science and Technology, Wuhan, China, June 29, 2011.

[SA47] “How Practical is Network Coding?” one-hour invited presentation, School of Telecommunications, Xidian University, Xi’an, China, April 15, 2011.

[SA46] “How Practical is Network Coding?” one-hour invited presentation, Department of Computer Science, Rochester Institute of Technology, January 21, 2011.

[SA45] “Practical Network Coding: 2002 – ?” one-hour invited presentation, Department of Computer Science and Engineering, University at Buffalo, State University of New York, October 21, 2010.

- [SA44] “Practical Network Coding: 2002 – ?” one-hour invited presentation, Department of Computing, Hong Kong Polytechnic University, Hong Kong, September 1, 2010.
- [SA43] “Decentralized Network Coding in Unreliable Networks,” one-hour invited presentation, China Computing Forum, Beijing, China, August 29, 2009.
- [SA42] “Decentralized Network Coding in Unreliable Networks,” one-hour invited presentation, Xidian University, Xi’an, China, August 26, 2009.
- [SA41] “Serving P2P Streaming Systems with GPU-accelerated Network Coding,” one-hour invited presentation, Huazhong University of Science and Technology, Wuhan, China, May 11, 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 presentation, 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 Network-*

ing (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.

PROFESSIONAL
SOCIETY
MEMBERSHIPS

- ◇ Senior Member, the Institute of Electrical and Electronic Engineers (IEEE) and the IEEE Communications Society.
- ◇ Member, the Association for Computing Machinery (ACM)
- ◇ Licensed Professional Engineer in the Province of Ontario

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 – 2011.
 - ▷ *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**
 - ▷ *General Chair*, 21st IEEE International Workshop on Quality of Service (IWQoS 2013), Montreal, Quebec, Canada, June 2013.
 - ▷ *Program Co-Chair*, 22nd SIGMM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2012), Toronto, Ontario, Canada, June 7-8, 2012.
 - ▷ *Program Co-Chair*, IEEE International Conference on Network Protocols (ICNP 2011), Vancouver, British Columbia, Canada, October, 2011.
 - ▷ *TPC Group Leader*, Eighth IEEE Conference on Sensor, Mesh and Ad Hoc Communications

and Networks (SECON 2011), Salt Lake City, Utah, June 27-30, 2011.

- ▷ *Area TPC Chair*, IEEE INFOCOM 2011, Shanghai, China, April 10-15, 2011.
- ▷ *Program Vice Chair*, Network/Internet Protocols and Applications area, 31st IEEE International Conference on Distributed Computing Systems (IEEE ICDCS 2011), June 20-24, 2011.
- ▷ *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)

- ▷ IEEE INFOCOM 2013, Torino, Italy, April 14-19, 2013.
- ▷ IEEE International Conference on Cloud Engineering (IC2E 2013), San Francisco, California, March 25-27, 2013.
- ▷ Workshop on Hot Topics in Mobile Multimedia (HotMM 2012), in conjunction with IEEE ICME 2012, Melbourne, Australia, July 9-13, 2012.
- ▷ The 20th IEEE International Conference on Network Protocols (ICNP 2012), Austin, Texas, October 30 - November 2, 2012.
- ▷ The 18th Annual International Conference on Mobile Computing and Networking (Mobicom 2012), Istanbul, Turkey, August 22-26, 2012.

- ▷ The 2012 International Conference on Multimedia and Expo (ICME 2012), Melbourne, Australia, July 9-13, 2012.
- ▷ The 2012 International Symposium on Network Coding (NetCod 2012), Cambridge, Massachusetts, June 29-30, 2012.
- ▷ The 9th IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2012), Seoul, Korea, June 18-21, 2012.
- ▷ The 32nd International Conference on Distributed Computing Systems (ICDCS 2012), Macau, China, June 18-21, 2012.
- ▷ IEEE International Conference on Communications (ICC 2012), Ad-hoc and Sensor Networking Symposium, Ottawa, Canada, June 10-15, 2012.
- ▷ IEEE International Workshop on Quality of Service (IWQoS 2012), Coimbra, Portugal, June 4-5, 2012.
- ▷ IEEE INFOCOM 2012, Orlando, Florida, March 25-30, 2012.
- ▷ ACM Multimedia Systems 2012 (MMSys 2012), Chapel Hill, North Carolina, February 22-24, 2012.
- ▷ IEEE Globecom 2011, Ad-hoc and Sensor Networking Symposium, Houston, Texas, December 5-9, 2011.
- ▷ ACM Multimedia 2011, Scottsdale, Arizona, November 28 - December 1, 2011.
- ▷ The 2011 International Symposium on Network Coding (NetCod 2011), Beijing, China, July 25-27, 2011.
- ▷ IEEE International Conference on Multimedia and Expo (ICME 2011), Barcelona, Spain, July 11-15, 2011.
- ▷ Workshop on Hot Topics in Multimedia Delivery (HotMD 2011), in conjunction with IEEE ICME 2011, Barcelona, Spain, July 11-15, 2011.
- ▷ IEEE International Workshop on Quality of Service (IWQoS 2011), San Jose, California, June 5-7, 2011.
- ▷ The 21st International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2011), Vancouver, British Columbia, Canada, June 2-3, 2011.
- ▷ IEEE INFOCOM 2011 Workshop on Cloud Computing, Shanghai, China, April 15, 2011.
- ▷ ACM Multimedia Systems 2011 (MMSys 2011), San Francisco Bay area, California, February 23 - 25, 2011.
- ▷ The 12th International Conference on Distributed Computing and Networking (ICDCN 2011), Bangalore, India, January 2 - 5, 2011.
- ▷ IEEE Globecom 2010, Ad-hoc and Sensor Networking Symposium, Miami, Florida, December 6 - 10, 2010.
- ▷ ACM CoNEXT 2010, Philadelphia, Pennsylvania, November 30 - December 3, 2010.
- ▷ The 7th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS 2010), San Francisco, California, November 8-12, 2010.
- ▷ Meta-TPC member, Systems Track, ACM Multimedia 2010, Florence, Italy, October 25 -

- 29, 2010.
- ▷ The 18th IEEE International Conference on Network Protocols (ICNP 2010), Kyoto, Japan, October 5 – 8, 2010.
 - ▷ ACM Mobicom 2010, Chicago, Illinois, September 20 – 24, 2010.
 - ▷ The Seventh IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (IEEE SECON 2010), Boston, Massachusetts, June 21 – 25, 2010.
 - ▷ The 30th International Conference on Distributed Computing Systems (ICDCS 2010), Genoa, Italy, June 21 – 25, 2010.
 - ▷ The 18th International Workshop on Quality of Service (IWQoS 2010), Beijing, China, June 16 – 18, 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), San Jose, California, 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 Workshop 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 (Chinacom 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), Lis-

boa, 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 ♦ Chair, Software Systems Search Committee, Department of Electrical and Computer Engineering
ACTIVITIES

- ♦ Director of Curriculum and Chair of Curriculum Matters Committee, 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
- ♦ Member, Quality Assurance Working Group on CEAB Graduate Attributes and Degree Level Expectations, Faculty of Applied Science and Engineering, University of Toronto, April 2010 – 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 documen-

tation), 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 105F, *Computer Fundamentals*, Fall 2009.
- ◇ 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
Fall 2009	APS 105F: Computer Fundamentals	66
Winter 2010	ECE 344S: Operating Systems	69
Winter 2010	ECE 1771S: Quality of Service	4
Fall 2010	APS 105F: Computer Fundamentals	90
Winter 2011	ECE 344S: Operating Systems	76
Winter 2011	ECE 1771S: Quality of Service	15
Fall 2011	APS 105F: Computer Fundamentals	101
Winter 2012	ECE 344S: Operating Systems	64
Winter 2012	ECE 1771S: Quality of Service	11

GRADUATE
SUPERVISION

◇ **Students Graduated with the Doctor of Philosophy Degree (Total: 9)**

Name *Starting Date, Graduation Date* *Dissertation Title
and Current Employment*

Jin Jin	September 2006 – September 2010, now Senior Business Analyst, Bank of Montreal, Toronto, Canada	On Improving Multi-Channel Wireless Networks Through Network Coding and Dynamic Resource Allocation
Yunfeng Lin	September 2005 – February 2010, now Research Scientist, Intel Labs, Beijing, China	Decentralized Coding in Unreliable Communication Networks (<i>co-supervised with Professor Ben Liang</i>)
Hassan Shojanian	January 2006 – February 2010, now Software Engineer, Apple Inc., Cupertino, California	Making Coding Practical: From Servers to Smartphones
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 Optimizing Solutions
Mea Wang	September 2004 – April 2008, now Assistant Professor, Department of Computer Science, University of Calgary, Calgary, Alberta, Canada	A Quest for High-Performance Peer-to-Peer Live Streaming
Jiang Guo	September 2001 – August 2007, now Senior Software Developer, CNIB, Toronto, 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: 18¹)**

<i>Name</i>	<i>Starting Date, Graduation Date and Current Employment</i>	<i>Dissertation Title and Grade</i>
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¹In the case that a student is co-supervised, each co-supervisor contributed equally to the supervision of the student.

Yuan Feng	September 2008 – January 2011, now Ph.D. Candidate, iQua Research Group, University of Toronto	On the Use of Double Auctions in Resource Allocation Problems in Large-Scale Distributed Systems (A)
Junqi Yu	September 2008 – September 2010, now Software Developer, Softek Computer Services, Mississauga, Ontario	Risk Management and Profit Optimization in Cognitive Radio Networks (A-) (<i>co-supervised with Professor Ben Liang</i>)
Zimu Liu	September 2007 – December 2009, now PhD Candidate, iQua Research Group, University of Toronto	Measurements on Large-Scale Peer-Assisted Live Streaming: A Survival Analysis Approach (A)
Hong Xu	September 2007 – October 2009, now PhD Candidate, iQua Research Group, University of Toronto	On Improving Spectrum Utilization Through Cooperative Diversity and Dynamic Spectrum Trading (A+)
Jiahua Wu	September 2007 – September 2009, now PhD Candidate, Rotman School of Management, University of Toronto	On the Design of Peer-Assisted Video-On-Demand Systems (B+)
Elias Kehdi	September 2007 – August 2009, now Financial Software Developer, Bloomberg Inc., New York, New York	On the Application of Random Linear Network Coding for Network Security and Diagnosis (A)
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)

Gregory Hartl	September 2002 – August 2004, now Business Consultant, Vari-cent Software, 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 Associate Portfolio Manager, 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 Senior System Support Analyst, Bank of Montreal, Toronto, Ontario	Power-aware Protocols in Wireless Ad Hoc Networks (A)
Karen H. Wang	September 1999 – September 2001, now Embedded Software Engineer, SiBEAM Inc., San Francisco Bay Area, 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: 2)

<i>Name</i>	<i>Duration of Study</i>
Yiwei Pu	September 2010 – present
Yuefei Zhu	September 2010 – present

◇ **Current Students in the Doctor of Philosophy Program** (Total: 7)

<i>Name</i>	<i>Duration of Study</i>
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Yuan Feng	September 2010 – present
Wei Wang	September 2010 – present
Lilin Zhang	September 2010 – present
Zimu Liu	September 2009 – present
Hong Xu	September 2009 – present
Chen Feng (<i>co-supervised with Professor Frank Kschischang</i>)	September 2008 – present
Di Niu	September 2008 – present

UNDERGRADUATE
SUPERVISION

◇ **Supervision of Engineering Science Theses** (Total: 8)

<i>Name</i>	<i>Duration of Study</i>	<i>Thesis Topic</i>
Eugene Cheung	September 2009 – April 2010	Performance Evaluation of Grand Central Dispatch
Chao Qu	September 2009 – April 2010	Video Streaming, Viewing, Processing, and Exporting with iPhone
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: 28)

<i>Team Members</i>	<i>Academic Year</i>	<i>Title</i>
Yang Zhou (CE), Chen Li (EE), Aileen Liu (EE)	2010-2011	iUT: An Essential App for University of Toronto Students
Vanessa Meltem Oktem (CE), Martin Cortez (CE)	2010-2011	WikiTravel Application on the Apple iPad with Custom Text Processing

Christopher Mah (EE), Michael Lam (EE)	2010-2011	iPad Annotator
Richard Sun (EE), Yang Jiao (CE), Wei Li (EE)	2010-2011	A Multi-Touch Intensive Application on the Apple iPhone/iPad
Sahil Bhardwaj (CE), Yi Wei Lee (CE), I-Cheng Liao (CE), Paul Prashanna Satkunasingam (CE)	2009-2010	An Interactive Game on the iPhone
Anthony Koo (EE), Yat San Kan (CE)	2009-2010	A Productivity Application with the iPhone 3.0 SDK
He Xu (EE), Heng Xu (EE)	2009-2010	A Productivity Application with the iPhone 3.0 SDK
Kevin Tian Yuan (EE), Ho Hin Lau (CE)	2009-2010	A Peer-to-Peer Application with the iPhone 3.0 SDK
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 Dawood 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), 2000-2001
Michael Assad (CE), Geoff Evason
(CE)

Online Buyer/Classifieds Featuring P2P
Computing

Chris Davis (CE), Kanchana Sastri 2000-2001
(CE)

A Simulation-based Comparison Study
of Routing Protocols in Mobile Ad hoc
Networks