Zhi-Li Zhang

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EDUCATION

Ph.D	**Computer Science, University of Massachusetts, Amherst**. Feb. 1997. Thesis Title: *End-to-End Support for Statistical Quality-of-Service Guarantees in Multimedia Networks* Thesis Advisor: Don Towsley
M.S.	**Computer Science, University of Massachusetts, Amherst**. Sept. 1992. Thesis Title: *Complexity of Symmetric Functions in Perceptron-Like Models* Thesis Advisor: David A. Mix Barrington
B.S.	**Computer Science, Nanjing University, Nanjing, China**. July 1986. *Graduated with highest distinction.*

RESEARCH INTERESTS

General: Computer and telecommunication networks, Internet quality of service and novel architectures, wireless networks, sensor networks, multimedia networking, peer-to-peer and distributed systems, network security.

Current Focus: Internet inter- and intra-domain routing, wireless ad hoc routing, routing algorithms and architectures for heterogeneous networks, distributed sensor networks, resilient large-scale distributed system design, self-organizing and peer-to-peer systems, security attack detection and prevention, secure networked system design, social-technical network analysis, and robustness of inter-dependent networks

WORK EXPERIENCE

May '15 - Present	**Digital Technology Center, University of Minnesota, Twin Cities** *Associate Director for Research*
Jan '07 - Present	**Department of Computer Science, University of Minnesota, Twin Cities** *Qwest Chair Professor in Telecommunications*
Jul '06 - Present	**Department of Computer Science, University of Minnesota, Twin Cities** *Full Professor*
Jul '02 - Jul '06	**Department of Computer Science, University of Minnesota, Twin Cities** *Associate Professor*
Aug '04 - May '05	**Dept. of EECS, University of California at Berkeley** *Visiting Professor*
Jul '00 - Jul '03	**Department of Computer Science, University of Minnesota, Twin Cities** *McKnight Land-Grant Professor*

Jan '97 - Jun '02	**Department of Computer Science, University of Minnesota, Twin Cities** *Assistant Professor*
Aug '04 - Dec '04	**University of California, Berkeley** *Miller Visiting Professor, Miller Institute for Basic Sciences*
Jun '02 - Aug '02	**IBM T.J. Watson Research Center** *Visiting Professor*
Oct '01 - May '02	**Sprint Advanced Technology Labs** *Visiting Professor*
Jun '01 - Jul '01	**Fujitsu Labs of America, Sunnyvale, CA** *Summer Visiting Professor*
Jun '00 - Jul '00	**Fujitsu Labs of America, Sunnyvale, CA** *Summer Visiting Professor*
Jun '99 - Jul '99	**Fujitsu Labs of America, Sunnyvale, CA** *Summer Visiting Professor*
Oct '99 - Jan '00	**Honeywell Technology Center, Minneapolis, MN** *Technical Consultant on DARPA Project "CONQUER"*
Sep '92 - Dec '96	**Computer Networking Research Group, University of Massachusetts, Amherst** *Research Assistant*
June '94 - Aug '94	**Department of Mathematics of System and Networks, AT&T Bell Laboratories, Murray Hill** *Summer Intern*
Spring '91 - Fall '96	**Computer Science Department, University of Massachusetts, Amherst** *Teaching Assistant and Associate*
May '91 -Aug '92	**Theoretical Computer Science Group, University of Massachusetts, Amherst** *Research Assistant*
March '90 - July '90	**School of Computer Science, Carnegie-Mellon University** *Visiting Scholar*
Sep '87 - Dec '90	**Computer Science Department, Århus University, Denmark** *Research Associate*

AWARDS AND HONORS

August 2017	**Best Paper Award** *The 1th ACM SIGCOMM Asia-Pacific Workshop on Networking (APNET'17)*
May 2015	**Best Paper Award** *The 7th Annual Workshop on Simplifying Complex Networks for Practitioners (SIMPLEX'15)*
Oct 2014	**Best Paper Award** *1st Inter. Workshop on Computer & Networking Experimental Research using Testbeds (CNERT'14)*
Oct 2013	**Best Paper Award** *16th Inter. Symp. on Research in Attacks, Intrusions and Defenses (RAID'13)*
2013 – Present	**Distinguished McKnight University Professor**
2011	**IEEE Fellow**

Oct 2010	**Best Poster Paper Award,** *IEEE ICNP'10*
Apr 2010	**Best Paper Award,** *IEEE INFOCOM'10* (selected out of about 250 accepted papers, and among more than 1550 submitted papers)
2007 - Present	**Qwest Chair Professorship in Telecommunications**
2006 & 2007	**IBM Faculty Partnership Award**
2005	**Institute of Technology George Taylor Distinguished Research Award** Miller Institute for Basic Sciences, University of California, Berkeley
Fall 2004	**Miller Visiting Professorship**, Miller Institute for Basic Sciences, University of California, Berkeley
Nov 2002	**Best Paper Award** *IEEE International Conference on Network Protocols (ICNP'02).*
2000 - 2002	**McKnight Land-Grant Professorship** Award, University of Minnesota
1998 - 2002	**NSF CAREER AWARD**
Sep 1998-Jun 2000	President's Distinguished Faculty Mentor for Minority Students
Sep 1997-Jun 1998	Bush Foundation Fellowship for Teaching Excellence
May 1996	**Best Paper Award** for "Best Integration of Systems and Theory," *SIGMETRICS'96.*
Fall '93 - Spring '94	Graduate School Fellowship, University of Massachusetts at Amherst.
Fall '92 - Spring '93	Graduate School Fellowship, University of Massachusetts at Amherst.
Fall '87 - Fall '90	Four-Year Fellowship from *Chinese State Education Commission*, for studying and conducting research abroad.
January 1989	Second Prize in the provincial annual *Science and Technology Advancement Awards* of Jiangsu Province.
March 1987	Third prize, Nanjing Municipal Science Knowledge Contest.
June 1986	Outstanding Student Award, Nanjing University, China. Selected to participate in Computer Science Department Special Research Program (only three students were chosen) since junior year. Led a senior design and graduation project while a junior student. Also selected as one of five students to be admitted directly (exempted from taking national graduate entrance exams) into the Computer Science Graduate Program in Nanjing University, one of the best programs in the country. Selected as the only student to study abroad under a four-year fellowship from Chinese State Education Commission in 1996.

RESEARCH MANUSCRIPTS/BOOKS/CHAPETERS in BOOKS

1. Baek-Young Choi*, Zhi-Li Zhang and David Du, "*Scalable Network Monitoring in High Speed Networks.*" Springer Publisher, 2011, ISBN 978-1-4614-0118-6.

2. Yu Jin* and Zhi-Li Zhang, "Application Traffic Activity Graph Analysis," Invited Chapter in *Handbook of Optimization in Complex Networks: Communications and Social Networks* (ed. by My Thai and Panos Pardalos), Springer Publisher, 2011, ISBN:978-1461408567.

3. Zhi-Li Zhang, Hun Jeong Kang*, Supranamaya Ranjan and Antonio Nucci, "SIP-based VoIP Traffic Behavior Profiling and its Applications," Invited Chapter in *VoIP Handbook: Applications, Technologies, Reliability, and Security* (ed. by Syed Ahson and Mohammad Ilyas), CRC Press, December 2008.

4.   Qian Zhang, Wenwu Zhu and Zhi-Li Zhang, "Multimedia Delivery over Wireless Mesh Networks," Invited Chapter in *Adaptation Techniques in Wireless Multimedia Networks* (ed. by Wei Li and Yang Xiao), Nova Science Publishers, 2005.

5.   Srihari Nelakuditi* and Zhi-Li Zhang, *Quality-of-Service Routing: A Localized Approach*, Kluwer Publisher, 2002.

In the above and following * *indicates current or former student author of Dr. Zhang;* + *indicates current or former* visiting *student author of Dr. Zhang.*

REFEREED JOURNAL PUBLICATIONS: Published or Accepted

1.   Zhongliu Zhuo+, Yang Zhang*, Zhi-Li Zhang, Xiaosong Zhang, and Jingzhong Zhang, "Website Fingerprinting Attack on Anonymity Networks Based on Profile Hidden Markov Model." *IEEE Transactions on Information Forensics and Security* , pp. 1081 – 1095, Vol. 13, Issue 5, May 2018. DOI: 10.1109/TIFS.2017.2762825.

2.   Weibo Chu, Mostafa Dehghan, John C.S. Liu, Don Towsley, and Zhi-Li Zhang, "Joint Cache Resource Allocation and Request Routing for In-network Caching Services." *Computer Networks*, pp.1-14, Vol. 131, February 2018. DOI:10.1016/j.comnet.2017.11.009

3.   Braulio Dumba*, Hesham Mekky*, Sourabh Jain*, Guobao Sun*, and Zhi-Li Zhang, "A Virtual Id Routing Protocol for Future Dynamics Networks and Its Implementation Using the SDN Paradigm." Accepted for publication in *Journal of Network and Systems Management*, 2016. DOI: 10.1007/s10922-016-9373-0.

4.   Weibo Chu, Lifang Wang, Haiyong Xie, Zhi-Li Zhang, Zejun Jiang, "Network Delay Guarantee for Differentiated Services in Content-centric Networking." *Elsevier Computer Communications*, pp. 554–66, vol. 76, February 2016. DOI:10.1016/j.comcom.2015.09.009.

5.   Vijay Kumar Adhikari*, Yang Guo, Fang Hao, Volker Hilt, Zhi-Li Zhang, Matteo Varvello, Moritz Steiner, "Measurement Study of Netflix, Hulu, and a Tale of Three CDNs." *IEEE/ACM Transactions on Networking*, pp.1984 –1997, Vol.23, Issue 6, Dec 2015. DOI: 10.1109/TNET.2014.2354262.

6.   Yang Zhang*, Hesham Mekky*, Zhi-Li Zhang, Ruben Torres, Sung-Ju Lee, Alok Tongaonkar andMarco Mellia, "Detecting Malicious Activities with User-Agent Based Proles." *International Journal of Network Management*, pp.309–319, Volume 25, Issue 5, September/October 2015. DOI: 10.1002/nem.1900.

7.   Yanhua Li, Haiyong Xie, Yonggan Wen, Chi-Yin Chow, and Zhi-Li Zhang, "How Much to Coordinate? Optimizing In-Network Caching in Content-Centric Networks." *IEEE Transactions on Network and Service Management*, pp.420 - 434, Vol.12, Issue 3, Sep. 2015. DOI: 10.1109/TNSM.2015.2458271.

8.   Yanhua Li*, Wei Chen, Yajun Wang and Zhi-Li Zhang, "Voter Model on Signed Social Networks." *Internet Mathematics*, pp.93-133, Vol. 11, Issue 2, 2015. DOI: 10.1080/15427951.2013.862884.

9.   Yanhua Li*, Dan Boley and Zhi-Li, "From Shortest-Path to All-Path: The Routing Continuum Theory and Its Applications," *IEEE Transactions on Parallel*

and Distributed Systems, pp.1745 - 1755, Vol. 25, Issue 7, July 2014. DOI: 10.1109/TPDS.2013.203.

10. Gyan Ranjan* and Zhi-Li Zhang, "Geometry of Complex Networks and Structural Centrality." *Physics Letter A: Statistical Mechanics and its Applications*, Volume 392, Issue 17, pp.3833 – 3845, September 2013. DOI: 10.1016/j.physa.2013.04.013.

11. Zhenhua Li[+], Zhi-Li Zhang, and Yafei Dai, "Coarse-grained Cloud Synchronization Mechanism Design May Lead to Severe Traffic Overuse" *Tsinghua Science and Technology*, Volume 18, Number 2, April 2013.

12. Yanhua Li*, Abeldelaziz, and and Zhi-Li Zhang, "Trading Optimality for Scalability in Large-scale Opportunistic Routing.'" *IEEE Transactions on Vehicular Technology,* Vol. 62, Issue 5, pp.2253 – 2263, 2013. DOI: 10.1109/TVT.2012.2237045.

13. Yanhua Li* and Zhi-Li Zhang, "Random Walks and Green's Function on Digraphs: A Framework for Estimating Wireless Transmission Costs." *IEEE/ACM Transactions on Networks.* Vol. 21, Issue 1, pp.135 – 148, Feb. 2013. DOI: 10.1109/TNET.2012.2191158.

14. Yanhua Li* and Zhi-Li Zhang, "Digraph Laplacian and the Degree of Asymmetry." *Internet Mathematics.* Volume 8, Issue 4, 2012, pp.381-401. DOI: 10.1080/15427951.2012.70889

15. Ting Zhu*, Ziguo Zhong, Tian He, and Zhi-Li Zhang, "Achieving Efficient Flooding by Utilizing Link Correlation in Wireless Sensor Networks." *IEEE/ACM Transactions on Networks.* Vol. 21, Issue 1, pp.121 – 134, Feb. 2013. DOI: 10.1109/TNET.2012.2197689.

16. Zhenhua Li[+], Yan Huang, Gang Liu, Fucheng Wang, Yunhao Liu, Zhi-Li Zhang and Yafei Dai, "Challenges, Designs and Performances of Large-scale Open-P2SP Content Distribution." *IEEE Transactions on Parallel and Distributed Systems*, vol.24, no.11, pp.2181,2191, Nov. 2013 doi: 10.1109/TPDS.2012.252.

17. Dan Li, Jiong Xhen, Chuanxiong Guo, Yunxin Liu, Jinyu Zhang, Zhi-Li Zhang and Yongguang Zhang, "IP-Geolocation Mapping for Moderately-Connected Internet Region." *IEEE Transactions on Parallel and Distributed Systems*, 24(2): 381-391, 2013.

18. Gyan Ranjan*, Hui Zang, Zhi-Li Zhang and Jean Bolot, "Are Call Detail Records Biased for Sampling Human Mobility?" *ACM SIGMOBILE Mobile Computing and Communications Review*, Volume 16, Issue 3, July 2012, pp.33-44. DOI:10.1145/2412096.241210.

19. Yu Jin*, Nick Duffield, Jeffrey Erman, Patrick Haffner, Subhabrata Sen, and Zhi-Li Zhang, "A Modular Machine Learning System for Flow-Level Traffic Classification in Large Networks," *ACM Transactions on Knowledge Discovery from Data*, 2012.

20. Ting Zhu*, Yu Gu, Tian He, and Zhi-Li Zhang, "Achieving Long-Term Operation with a Capacitor-Driven Energy Storage and Sharing Network." *ACM Transactions on Sensor Networks*, Vol 8, Issue 4, September 2012.

21. Eric K.-W. Kwong, L. Gao, R. Guerin, and Zhi-Li Zhang, "On the Feasibility and Efficacy of Protection Routing in IP Networks." *IEEE/ACM Transactions on Networking*, March 2011, DOI: 10.1109/TNET.2011.2123916

22. Daniel Boley, Gyan Ranjan*, and Zhi-Li Zhang, "Commute Times for a Directed Graph using an Asymmetric Laplacian." *Linear Algebra and Appl.*, 435:224242, 2011

23. Yong Liao, Lixin Gao, Roch Guerin, and Zhi-Li Zhang, "Safe Inter-domain Routing under Diverse Commercial Agreements." *IEEE/ACM Transactions on Networking*, 2010. DOI: 10.1109/TNET.2010.2049858.

24. Ting Zhu*, Ziguo Zhong, Tian He, and Zhi-Li Zhang, "Energy-Synchronized Computing for Sustainable Sensor Networks." *Elsevier Ad Hoc Networks Journal*, 2010.

25. Ting Zhu, Ziguo Zhong, Yu Gu, Tian He, and Zhi-Li Zhang, "Feedback Control-based Energy Management for Ubiquitous Sensor Networks." *IEICE Transactions on Communications*, Special section on Fundamental Issues on Deployment of Ubiquitous Sensor Networks, 2010.

26. Sanghwan Lee*, Sambit Sahu, Zhi-Li Zhang, and Debanjan Saha, "On Suitability of Euclidean Embedding of Host-based Network Coordinate Systems." *IEEE/ACM Transactions on Networking*, Vol, 18, Issue 1, Feb 2010, pp.27-40.

27. Kuai Xu*, Feng Wang, Supratik Bhattacharyya, and Zhi-Li Zhang, "Real-time Behavior Profiling for Network Monitoring." *International Journal of Internet Protocol Technology (IJIPT)*, 2010.

28. Kuai Xu*, Jaideep Chandrashekar*, and Zhi-Li Zhang, "Principal Component Analysis of BGP Update Streams." *Journal of Communications and Networks*, 2009.

29. Abhishek Chandra, Rohini Prinja, Sourabh Jain*, and Zhi-Li Zhang, "Co-designing the Failure Analysis and Monitoring of Large-Scale Systems." *ACM SIGMETRICS Performance Evaluation Review*, Volume 36 , Issue 2, September 2008.

30. Haldane Peterson*, Soumya Sen, Jaideep Chandrashekar*, Lixin Gao, Roch Guerin, Zhi-Li Zhang, "Message-Efficient Dissemination for Loop-Free Centralized Routing." *ACM Computer Communication Review*, Volume 38, Issue 3, July 2008, pp. 65-74.

31. Kuai Xu*, Zhi-Li Zhang, and Supratik Bhattacharyya, "Internet Traffic Behavior Profiling for Network Security Monitoring." *IEEE/ACM Transactions on Networking*, Volume 16, Issue 6, Dec. 2008, pp. 1241 - 1252.

32. Zhenhai Duan*, Jaideep Chandrashekar*, Jeffrey Krask*, Kuai Xu*, and Zhi-Li Zhang, "Damping BGP Route Flaps." *Journal of Communications and Networks*. Volume 9, Number 4. December 2007, pp. 490 - 498.

33. Srihari Nelakuditi*, Sanghwan Lee*, Yinzhe Yu*, Zhi-Li Zhang, and Chen-Nee Chuah, "Fast Local Rerouting for Handling Transient Link Failures." *IEEE/ACM Transactions on Networking*, Vol. 15, issue 2, April 2007.

34. Baek-Young Choi*, Sue Moon, Zhi-Li Zhang, and Christophe Diot, "Analysis of Point-To-Point Packet Delay in an Operational Network." *Computer Networks*, Vol 51/13 pp 3812-3827, 2007.

35. Haitao Wu, Yunxin Liu, Qian Zhang, and Zhi-Li Zhang, "SoftMAC: Layer 2.5 Collaborative MAC for Multimedia Support in Multi-Hop, Wireless Networks," *IEEE Transactions on Mobile Computing*, Vol. 6, no. 1, 2007, pp. 12-25.

36. Yingfei Dong*, Zhi-Li Zhang and David Du, "Full-Sharing: Efficient Bandwidth Scheduling for Video Streaming over Broadband Cable Networks (BCNs)," Multimedia Tools and Applications, Nov 2006.

37. Yingfei Dong*, Changho Choi*, and Zhi-Li Zhang, "LIPS: A Lightweight Permit System for Packet Source Origin Accountability." Elesevier Journal of *Computer Networks*, Vol. 50, Issue 18, 21 December 2006.

38. Zhenhai Duan*, Zhi-Li Zhang and Yiwei Thomas Hou, "Fundamental Trade-offs in Aggregate Packet Scheduling." In *IEEE Transactions on Parallel and Distributed Computers*, 2005.

39. Konstantina Papagianaki, Nina Taft, Zhi-Li Zhang, and Christophe Diot, "Long-Term Forecasting of Internet Backbone Traffic" (invited paper). *IEEE Transactions on Neural Networks*, Special Issue on Adaptive Learning Systems in Communications Networks, 2005.

40. Vinay Rebeiro, Zhi-Li Zhang, Sue B. Moon, and Christophe Diot, "Small-Time Scaling Behaviors of Internet Backbone Traffic: An Empirical Study" *Computer Networks*, Special Issue on Long-Range Dependent Traffic, Vol. 48(3), June 2005, pp.15-334.

41. Yinfei Dong* and Zhi-Li Zhang, "A Practical Technique to Support Controlled Quality Assurance in Video Streaming across the Internet", *Multimedia Tools and Application*, Vol.25, 2005, pp.281-304.

42. Yingfei Dong*, Changho Choi*, and Zhi-Li Zhang, "A Framework for Enhancing Availability between Collaborative Domains." *Journal of Microprocessors and Microsystems*, Special Issue on Secure Computing Platforms, Vol.28, 2004, pp.547-559.

43. Srihari Nelakuditi*, Zhi-Li Zhang, and David Du, "On Selection of Paths for Multipath Routing." *Computer Networks*, Jan 2004.

44. Zhenhai Duan*, Zhi-Li Zhang, Yiwei T. Hou, and Lixin Gao, "A Core Stateless Bandwidth Broker Architecture for Scalable Support of Guaranteed Services." *IEEE Transactions on Parallel and Distributed Computer Systems*, pp.167-182, Feb 2004.

45. Zhenhai Duan*, Zhi-Li Zhang and Yiwei Thomas Hou, "Service Overlay Networks: SLAs, QoS and Bandwidth Provisioning." *IEEE/ACM Transactions on Networking*, pp.870 - 883, Dec 2003.

46. Lixin Gao, Zhi-Li Zhang and Don Towsley, "Proxy-Assisted Techniques for Delivering Continuous Multimedia Streams." *IEEE/ACM Transactions on Networking*, 11(6): 884-894, 2003.

47. Victor Firoiu, Jean-Yves Le Boudec, Don Towsley and Zhi-Li Zhang, "Theories and Models in Internet Quality of Services" (**invited paper**). In *Proceedings*

of IEEE, Special Issue on Internet Technologies and the Convergence of Telecommunications Services, Vol. 90, No. 9, pp.1565-1591, 2002.

48. Srihari Nelakuditi*, Zhi-Li Zhang and Rose P. Tsang, "Adaptive Proportional Routing: A Localized QoS Routing Approach." *IEEE/ACM Transactions on Networking*, Vol. 10, December, 2002.

49. Srihari Nelakuditi*, Srivatsan Varadarajan*, and Zhi-Li Zhang, "On Localized Control in Quality-of-Service Routing." In *IEEE Transactions on Automatic Control, Special Issue on Control Issues in the Internet*, Vol. 47, pp. 1026-1032, June 2002.

50. Srihari Nelakuditi* and Zhi-Li Zhang, "Localized Approach to Quality-of-Service Routing." In *IEEE Communication Magazine*, Special Issue on Quality-of-Service Routing, Vol. 40, pp.66-71, June 2002.

51. Subhabrata Sen, Don Towsley, Zhi-Li Zhang and Jayanta Dey, "Optimal Multicast Smoothing of Streaming Video over an Internetwork." In *IEEE Journal on Selected Areas in Networking*, Special Issue on Internet Proxy Services, 2002.

52. Y. Thomas Hou, Zhenhai Duan*, Zhi-Li Zhang, Takafumi Chujo, "Providing Scalable Support for Multiple QoS Guarantees: Architecture and Mechanisms." In *IEICE Transactions on Communications*, E84-B (10), Oct 2001.

53. Zhi-Li Zhang, Zhenhai Duan*, and Y. Thomas Hou, "On Scalable Design of Bandwidth Broker," In *IEICE Transaction on Communications*, Special Issue on Internet Technology, Vol. E84-B, No. 8, Aug 2001.

54. Zhi-Li Zhang, Srihari Nelakuditi*, Rahul Aggarwal*, and Rose P. Tsang, "Efficient Selective Frame Discard Algorithms for Stored Video Delivery across Resource Constrained Networks." In *Journal of Real-Time Imaging*, Special Issue on Adaptive Real Time Multimedia Transmission over Packet Switching Networks, 2001

55. Zhi-Li Zhang, Zhenhai Duan*, Y. Thomas Hou, "Virtual Time Reference System: A Unifying Scheduling Framework for Scalable Support of Guaranteed Services." *IEEE Journal on Selected Areas in Communications*, Vol. 18, No. 12, pp.2684-2695, Dec 2000.

56. Zhi-Li Zhang, Yuewei Wang, David H.C. Du, and Dongli Su, "Video Staging: A Proxy-Server-Based Approach to End-to-End Video Delivery over Wide-Area Networks," *IEEE/ACM Transaction on Networking*, Vol. 8, No. 4, pp.429-442, Aug 2000.

57. Dapeng Wu, Y. Thomas Hou, Zhi-Li Zhang, and H. Jonathan Chao, "A Framework of Node Architecture and Traffic Management Algorithms for Achieving QoS Provisioning in Integrated Services Networks." *International Journal of Parallel and Distributed Systems and Networks,* Vol. 3, No. 2, 2000.

58. Yiwei Thomas Hou, Shivendra S. Panwar, Zhi-Li Zhang, Henry Tzeng, and Ya-Qing Zhang, "On Network Bandwidth Sharing for Transporting Rate-Adaptive Packet Video Using Feedback." *International Journal of Communication Systems,* Vol. 13, No. 1, Feb. 2000.

59. Franceso Lo Presti, Zhi-Li Zhang, Jim Kurose and Don Towsley, "Source Time Scale and Optimal Buffer/Bandwidth Trade-off for Regulated Traffic in

a Network Node." *IEEE/ACM Transaction on Networking*, Vol. 7, No. 4, August 1999.

60. Yingfei Dong*, Yiwei Thomas Hou, Zhi-Li Zhang and T. Taniguchi, "A Novel Server-Based Measurement Infrastructure for Enterprise Networks." *Performance Evaluation: An International Journal*, 36-37(1999), pp.233-247.

61. Zhen Liu, Philippe Nain, Don Towsley and Zhi-Li Zhang, "Asymtotic Behavior of a Multiplexer Fed by a Long-Range Dependent Process." *Journal of Applied Probability*, Vol. 36 (1999), pp.105-118.

62. Jim D. Salehi, Zhi-Li Zhang, Jim Kurose, and Don Towsley, "Optimal Smoothing of Stored Video and its Impact on Network Resource Requirements". *IEEE/ACM Transaction on Networking*, Vol. 6, No. 4, August 1998, pp.397-410.

63. Francesco Lo Presti, Zhi-Li Zhang, Jim Kurose and Don Towsley, "Source Time Scale and Optimal Buffer/Bandwidth Trade-off for Regulated Traffic in a Network Node." *IEEE/ACM Transaction on Networking*.

64. Zhi-Li Zhang, "Large Deviations and the Generalized Processor Sharing Scheduling for a Multiple-Queue System." *Queueing Systems: Theory and Applications*, Vol 28 (1998) 4, pp.349-376.

65. Zhi-Li Zhang, "Large Deviations and the Generalized Processor Sharing Scheduling for a Two-Queue System." *Queueing Systems: Theory and Applications*, Vol. 26 (1997) 3-4, pp.229-264.

66. Zhi-Li Zhang, Zhen Liu and Don Towsley, "Closed-Form Deterministic Performance Bounds for the Generalized Processor Sharing Scheduling Discipline." *Journal of Combinatorial Optimization*, Special Issue on Scheduling, Vol. 1, No. 4, pp. 457-481, 1998.

67. Zhi-Li Zhang, Jim Kurose, Jim D. Salehi, and Don Towsley, "Smoothing, Statistical Multiplexing and Call Admission Control for Stored Video." *IEEE Journal on Selected Areas in Communication*, Special Issue on "Real-Time Video Services in Multimedia Networks", Vol. 15, No. 6, pp. 1148-1166, August 1997.

68. Zhi-Li Zhang, Zhen Liu, Jim Kurose and Don Towsley, "Call Admission Control Schemes under the Generalized Processor Sharing Scheduling." *Telecommunication Systems*, Vol. 7, No. 1-3, pp. 125-152, July 1997.

69. Zhi-Li Zhang, Don Towsley and Jim Kurose, "Statistical Analysis of the Generalized Processor Sharing Scheduling Discipline." *IEEE Journal on Selected Areas in Communications*, Vol. 13, No. 6, pp. 1071-1080, August 1995.

70. L. Fan, C. Wang and Zhi-Li Zhang. "The Design and the System Structure of IBM Code Disassembling Program ICDA". *Computer Technology*, Vol. 3, 1990 (*in Chinese*).

71. L. Fan, C. Wang and Zhi-Li Zhang, "Discussion of Some Issues in the Implementation of IBM Code Disassembler ICDA". *Computer Technology*, Vol. 1, 1990 (*in Chinese*).

72. L. Fan, C. Wang and Zhi-Li Zhang, "The Algorithm and Implementation of IBM Code Disassembler ICDA". *Journal of Nanjing University, Natural Science Edition*, Vol. 25, April, 1989 (*in Chinese*).

REFEREED CONFERENCE/WORKSHOP PUBLICATIONS: Highly Selective (acceptance rate 25% or lower)

1. Saurabh Verma* and Zhi-Li Zhang, "Hunt For The Unique, Stable, Sparse And Fast Feature Learning On Graphs." In *31st Conference on Neural Information Processing Systems (NIPS 2017)*, December 2017, Long Beach, CA.

2. Huandong Wang, Chen Gao, Yong Li, Zhi-Li Zhang and Depeng Jin, "From Fingerprint to Footprint: Revealing Physical World Privacy Leakage by Cyberspace Cookie Logs." In *Proc. 2017 ACM on Conference on Information and Knowledge Management (ACM CKIM'17)*, November 2017, Singapore.

3. Guanxiong Liu, Yanhua Li, Zhi-Li Zhang, Jun Luo and Fan Zhang, "CityLines: Hybrid Hub-and-Spoke Urban Transit System." *Proc. 25th ACM International Conference on Advances in Geographic Information Systems (SIGSPATIAL'17)*, Redondo Beach, California.

4. Eman Ramadan*, Arvind Naranayan*, Zhi-Li Zhang, Runhui Li and Gong Zhang, "BIG Cache Abstraction for Cache Networks ." In *Proc. IEEE International Conference on Distributed Systems (ICDCS'17)*, June 2017, Atlanta, CA.

5. Yunpeng Song, Zhongmin Cai and Zhi-Li Zhang, "Multi-touch Authentication Using Hand Geometry and Behavioral Information." In *Proc. IEEE Symposium on Security and Privacy (IEEE S&P'17)*, May, San Jose, CA.

6. Jin Cheng*, Cristian Lumezanu, Qiang Xu, Hesham Mekky*, Zhi-Li Zhang and Guofei Jiang "Magneto: Unified Fine-grained Path Control in Legacy and OpenFlow Hybrid Networks." In *ACM Symposium on Software Defined Networking (SOSR'17)*, April 2017, Santa Clara, CA.

7. Yang Zhang*, Bilal Anwer, Vijay Gopalakrishnan, Bo Han, Joshua Reich, Aman Shaikh and Zhi-Li Zhang, "ParaBox: Exploiting Parallelism for Virtual Network Functions in Service Chaining." In *ACM Symposium on Software Defined Networking (SOSR'17)*, April 2017, Santa Clara, CA.

8. Hesham Mekky*, Zhi-Li Zhang, Fang Hao, Sarit Mukherjee and T.V. Lakshman, "Network Function Virtualization Enablement within SDN Data Plane." In *Proc. IEEE INFOCOM'17*, May 2017, Atlanta, GA.

9. Weibo Chu, Mostafa Dehghan, Don Towsley and Zhi-Li Zhang, "On Allocating Cache Resources to Content Providers." In *Proc. ACM Conference on Information-Centric Networking (ICN'16)*, September 2017, Kyoto, Japan.

10. Eman Ramadan*, Hesham Mekky* and Braulio Dumba*, and Zhi-Li Zhang, "Adaptive Resilient Routing via Preorders in SDN." In *ACM Distributed Cloud Computing Workshop (DCC'16)*, July 2016, Chicago, IL.

11. Arvind Narayanan* and Saurabh Verma*, and Zhi-Li Zhang, "Mining Spatial-Temporal geoMobile Data via Feature Distributional Similarity Graph." In *ACM Mobidata Workshop* (co-located with *ACM Mobisys'16*, June 2016, Singapore.

12. Cheng Jin*, Abhinav Srivastava, Zhi-Li Zhang, "Understanding Security Group Usage in a Public IaaS Cloud." In *Proc. IEEE INFOCOM'16*, April 2016, San Francisco, CA.

13. Yang Zhang[*], Hesham Mekky[*], Zhi-Li Zhang, Fang Hao, Sarit Mukherjee and T.V. Lakshman, "SAMPO: Online Subflow Association for Multipath TCP with Partial Flow Record." In *Proc. IEEE INFOCOM'16*, April 2016, San Francisco, CA.

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KEYNOTES, INVITED LECTURES OR PRESENTATIONS

1. Zhi-Li Zhang, "Leveraging Big Data Analytics for Network Performance Monitoring & Trouble-Shooting," January 12 , 2017, National Institute of Standards and Technology, MD.

2. Zhi-Li Zhang, "Leveraging Big Data Analytics for Network Performance Monitoring & Trouble-Shooting," December 20, 2016, Harbin Institute of Technology (Shenzhen Graduate School), Shenzhen, China.

3. Zhi-Li Zhang, "Leveraging Big Data Analytics for Network Performance Monitoring & Trouble-Shooting," October 27, 2016, Tsinghua, Beijing, China.

4. Zhi-Li Zhang, "Leveraging Big Data Analytics for Network Performance Monitoring & Trouble-Shooting," October 24, 2016, Nanjing University, Nanjing, China.

5. Zhi-Li Zhang, "Leveraging Big Data Analytics for Network Performance Monitoring & Trouble-Shooting," June 28, 2016, Chinese Academy of Science, Shenzhen Advanced Institute of Technology.

6. Zhi-Li Zhang, "Leveraging Big Data Analytics for Network Performance Monitoring & Trouble-Shooting," January 10 , 2016, Huawei Research Center, Nanjing, China.

7. Zhi-Li Zhang, "Leveraging Big Data Analytics for Network Performance Monitoring & Trouble-Shooting," Invited Talk, Huawei Workshop on Big Data and Network, December 11, 2015, Princeton, NJ.

8. Zhi-Li Zhang, "Complex Interactions in the Content Distribution Ecosystem and Quality-of-Experience." NSF Workshop on Quality-of-Experience, Oct 21, 2015, Princeton, NJ.

9. Zhi-Li Zhang, "Dissecting Web Search Engine Response Times." Cisco FAST (Forward-looking Architectures, Services and Technologies) Seminar Series, August 28, 2015.

10. Zhi-Li Zhang, "Application-Aware Data Plane Processing in Software-Defined Networks," China Academy of Electronics and Information Technology, Beijing, China, August 11 , 2015.

11. Zhi-Li Zhang, "Measuring and Understanding Large-scale Content (Video) Delivery Systems," Beijing Jiaotong University, Beijing, China, July 8, 2015.

12. Zhi-Li Zhang, "Bringing Topology Back to Network Topology: Resilient Routing Made Easy," Keynote at the *2014/10th International Conference on Design of Reliable Communication Networks (DRCN 2014)*, Ghent, Belgium, April 1 to April 3, 2014

13. "On Large-scale Content Delivery Systems," Huawei Labs, Hong Kong, March 18, 2014.

14. Zhi-Li Zhang, "Measuring and Understanding Large-scale Content (Video) Delivery Systems," Nankai University, Tianjin, China, June 24, 2013

15. Zhi-Li Zhang, "Detecting and Analyzing Voice Frauds and SMS Spam Activities in a Large Cellular Network," Microsoft Research, Redmond, July 19, 2012

16. Zhi-Li Zhang, "Measuring and Understanding Large-scale Content (Video) Delivery Systems," Technicolor Labs, Paris, France, June 22, 2012.

17. Zhi-Li Zhang, "Understanding the Complexity of 3G UMTS Network Performance: Modeling, Prediction, and Diagnosis," Invited Talk at INTIMATE "Big Data in Digital Life" Workshop, Paris, France, June 20-21 , 2012

18. Zhi-Li Zhang, "Measuring and Understanding Large-scale Content (Video) Delivery Systems," Invited Keynote at IMDEA Network Workshop on "Big Data," Madrid, Spain, June 13, 2012.

19. Zhi-Li Zhang, "Vivisecting the YouTube Video Delivery Cloud: Overall Architecture and Key Mechanisms," Guest Lecture at University of Sevilla, Spain, May 3, 2012.

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21. Zhi-Li Zhang, "VIRO: Scalable and Robust Virtual-Id Routing for Future Dynamic Networks," University of Carlos III and IMDEA Network Joint Seminar Series, Madrid, Spain, Feb 21, 2012.

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24. Zhi-Li Zhang, "Reverse-Engineering YouTube Video Delivery Cloud," Nokia Labs, Beijing, China, June 3, 2011.

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27. Zhi-Li Zhang, "VIRO: Scalable and Robust Virtual-Id Routing for Future Dynamic Networks," Xidian University, Xi'an, China, May 27, 2011.

28. Zhi-Li Zhang, "Mining (Massive) Network Data for Network Management and Security," Xi'an Jiaotong University, Xi'an, China, May 25, 2011.

29. Zhi-Li Zhang, "VIRO: Scalable and Robust Virtual-Id Routing for Future Dynamic Networks," Michigan-Shanghai Jiaotong University Joint Institute, Shanghai, China, April 15, 2011.

30. Zhi-Li Zhang, "Identifying Suspicious Activities through DNS Graph Analysis," Narus Inc., Feb 11, 2011.

31. Zhi-Li Zhang, "Mining (Massive) Network Data for Network Management and Security," Department of Computer Science, Nanjing University, Nanjing, China, Sep 30, 2010.

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37. Zhi-Li Zhang, "Clean Slate Design for Future Internet," Microsoft Research Asia Labs, Beijing, China, Oct 2007.

38. Zhi-Li Zhang, "On Economic Viability of Future Internet Architectures," *Panel on Future Internet Design*, ICNP'07, Beijing, Oct 2007.

39. Zhi-Li Zhang, "Profiling Internet Backbone Traffic: Behavior Models, Applications and Implementation," Universidad Carlos III de Madrid, Spain April 2007.

40. Zhi-Li Zhang, "Limiting Path Exploration in BGP." International Institute of Computer Science, Berkeley, 2005.

41. Zhi-Li Zhang, "Trouble-Shooting Internet Inter-Domain Routing Systems," Miller Institute for Basic Sciences, University of California, Berkeley, December, 2004.

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PATENTS

- "Detecting Malicious HTTP Redirections using User Browsing Activity Trees," R. Torres, H. Mekky, Z.-L. Zhang, S. Saha, A. Nucci, US Patent App. 15/368,349.

- "Detecting Suspicious Network Behaviors based on Domain Name Service Failures," P. Luo, R. Torres, Z.-L. Zhang, S. Saha, S.-J. Lee, A. Nucci, US Patent 9,245,121.

- "METHOD AND APPARATUS FOR CLASSIFYING APPLICATIONS USING THE COLLECTIVE PROPERTIES OF NETWORK TRAFFIC," US Patent Declaration (Inventors: Yu Jin, Nick Duffield, Patrick Haffner, Subhabrata Sen, and Zhi-Li Zhang), AT&T, Docket No. ATT/2009-1406.

- "SIP-based Traffic Behavior Profiling," US Patent (Inventors: Hung Kang, Zhi-Li Zhang, Supranamaya Ranjan, Antonio Nucci), Narus Inc., US-2008/0016157.

- "Network Situational Awareness Security Analysis Framework for Detecting Distributed, Multi-Step Attacks," Provisional Patent Application under preparation.

- "Profile-Aware Filtering of Network Traffic", US Patent (Inventors: Kuai Xu, Zhi-Li Zhang and Supratik Bhattachyrra), Sprint Advanced Technology Labs, Sprint Docket No. 39/SPRI.128916.

- "Traffic Profiling Techniques for Internet Backbone Networks," US Patent Pending (Inventors: Kuai Xu, Supratik Bhattachyrra and Zhi-Li Zhang), Sprint Advanced Technology Labs, Sprint Docket No. 3451/SPRI.123077.

- "Multicast Video Smoothing Techniques," US Patent (Inventors: Subhabrata Sen, Don Towsley, Zhi-Li Zhang and Jayanta Dey), US Patent No. US 6,691,312, B1, Date of Patent, Feb 10, 2004.

- "A Scalable Design and Method for Bandwidth Broker System in a Packet Network," US Patent filed by Fujitsu Labs of America (Inventors: Zhi-Li Zhang, Zhenhai Duan*, and Thomas Yiwei Hou).

- "A Packet Scheduling Method Using Virtual Time Stamps for High-Capacity Combined Input and Output Queued Switching System," US Patent filed by Fujitsu Labs of America (Inventors: Thomas Yiwei Hou and Zhi-Li Zhang).

CONFERENCE/WORKSHOP CHAIRS/ORGANZING COMMITEES

- IEEE INFOCOM'2018 Technical Program Committee Area Chair, 2018
- IEEE International Conference on Network Protocols (ICNP'18), Technical Program Committee Area Chair, 2018
- Co-Chair, ACM SIGCOMM Student Research Competition, 2018
- ACM SIGMETRICS 2017 Technical Program Committee Co-Chair, 2016-2017
- ITC'29 Co-Chair of Area 5: Performance Evaluation, Control, and Optimization (incl. queueing, game theory, machine learning)
- Steering Commitee for the International Conference/Workshop on Computational Social Networks (CSoNet), 2014 – Present

- IEEE INFOCOM'2017 Technical Program Committee Area Chair, 2018

- IEEE International Conference on Network Protocols (ICNP'17), Technical Program Committee Area Chair, 2017

- IEEE INFOCOM'2017 Technical Program Committee Area Chair, 2017

- IEEE INFOCOM'2016 Technical Program Committee Area Chair, 2016

- IEEE International Conference on Network Protocols (ICNP'16), Technical Program Committee Area Chair, 2016

- Co-Chair, Workshop on Inter-Dependent Networks (WIDN'15), 2015

- IEEE INFOCOM'2015 Technical Program Committee Area Chair

- IEEE International Conference on Network Protocols (ICNP'14), Technical Program Committee Area Chair

- IFIP Networking 2013 conference, Technical Program Committee Co-Chair

- IEEE International Conference on Network Protocols (ICNP'13), Technical Program Committee Co-Chair

- IEEE International Conference on Distributed Computing System (ICDCS'13), Technical Program Committee Vice-Chair

- International Conference on World Wide Web (WWW'13), Co-Chair for Track on "Software Infrastructures and Their Performance, Availability and Reliability"

- Department of Energy (DoE) Workshop on Computational Modeling of Big Networks (COMBINE), Organizational Committee

- IEEE INFOCOM'2012 Technical Program Committee Area Chair

- IEEE INFOCOM'2011 Technical Program Committee Area Chair

- Steering Committee, ACM SIGMETRICS HotMetrics Workshop (2008 - present)

- Co-Chair, ACM/USENIX Internet Measurement Conference (IMC'08), 2008

- Co-Chair, ACM SIGMETRICS First HotMetrics (HotMetrics I) Workshop, 2008

- Co-Chair, IEEE Globecom "Next Generation Networks, Protocols, and Services Symposium" (GC'08 NGNPS)

- Technical Program Committee Co-Chair, IEEE INFOCOM 2006

- Workshop Co-Chair, International Workshop on Quality-of-Service (IWQoS'04) 2004

- Steering Committee, IEEE International Workshop on Quality-of-Service

- Executive Committee, IEEE INFOCOM'2003 (the 22th Annual Joint Conference of the IEEE Computer and Communications Societies on Computer Communications).

- Executive Committee, Information Chair, IEEE INFOCOM'2001 (the 20th Annual Joint Conference of the IEEE Computer and Communications Societies on Computer Communications).

- Publicity Chair, IEEE Internet Hotconnect'2001

- Workshop Co-Chair, SPIE ITCOM'2002 Workshop on "Scalability and Traffic Control in IP Networks"
- Workshop Co-Chair, NSF ITR Workshop on "Scalable Internet QoS Solutions."

CONFERENCE TECHNICAL PROGRAM COMMITTEES

- 2018 ACM SIGCOMM Workshop on Network Meets AI & ML (NetAIM 2018), 2018
- 2018 ACM SIGCOMM Workshop on (VR/AR Network 2018), 2018
- ACM Mobihoc'18 Technical Program Committee, 2018
- IFIP Networking 2018, Technical Program Committee, 2018
- IEEE Modeling, Analysis, and Simulation On Computer and Telecommunication Systems (MASCOTS 2018), Technical Program Committee, 2018
- 2017 Workshop on Data Analytics for Mobile Networking (DAMN'17), 2017
- 2017 ACM SIGCOMM Workshop on Virtual Reality and Augmented Reality Network (VR/AR Network 2017), 2017
- ACM Mobihoc'17 Technical Program Committee, 2017
- IFIP Networking 2017, Technical Program Committee, 2017
- DRCN'16, Technical Program Committee, 2016
- ACM/USENIX Internet Measurement Conference 2016 (IMC'16) Technical Program Committee
- IFIP Networking 2016, Technical Program Committee, 2016
- CNERT'16, Technical Program Committee, 2016
- ACM Mobihoc'16, Technical Program Committee, 2016
- ACM SIGMETRICS'16 Technical Program Committee, 2016
- ACM Mobihoc'15, Technical Program Committee, 2015
- ACM SIGMETRICS'15 Technical Program Committee, 2015
- CNERT'15, Technical Program Committee, 2015
- IEEE Communications Society Conference on Sensing and Communication in Wireless Networks (SECON'15), Technical Program Committee, 2015
- IFIP Networking 2015, Technical Program Committee, 2015
- DRCN'15, Technical Program Committee, 2015
- 2015 Smart Data Pricing Workshop, Technical Program Committee, 2015
- ACM CONEXT'14, Technical Program Committee, 2014
- ACM Internet Measurement Conference (IMC'14), Technical Program Committee, 2014
- ACM Mobihoc'14, Technical Program Committee, 2014
- IFIP Networking 2014, Technical Program Committee, 2014
- IEEE ICNP'14 Technical Program Committee, 2014
- CNERT'14, Technical Program Committee, 2014

- Smart Data Pricing Workshop 2014, Technical Program Committee, 2014
- IEEE 3rd International Conference on Cloud Networking (CloudNet'14), 2014
- GobalCom'14, SAC Cloud Networks, Technical Program Committee, 2014
- 24th International Teletraffic Congress (ITC'24), Technical Program Committee, 2013
- IEEE CloudNet 2013, Technical Program Committee
- The 2nd IEEE International Workshop on Smart Data Pricing (SDP 2013), Technical Program Committee
- 1st International Workshop on Computational Social Networks(CSoNet 2013), Technical Program Committee
- ACM/USENIX Internet Measurement Conference 2012 (IMC'12) Technical Program Committee
- IEEE ICNP'2012 Technical Program Committee
- IEEE ICPP'12 Technical Program Committee
- ACM CoNext'2011 Technical Program Committee
- IEEE ICNP'2011 Technical Program Committee
- IEEE INFOCOM'2011 Technical Program Committee
- "Hot Topics Workshop on Media Delivery" (HoTMD'11) Technical Program Committee
- IEEE ICDC'2011 Technical Program Committee
- International Conference on Networked Sensing Systems (INSS 2011) Technical Program Committee
- IEEE ICNP'2010 Technical Program Committee
- ACM MobiHoc'2010 Technical Program Committee
- ACM SIGMETRICS HOTMETRICS'10 Workshop Technical Program Committee
- ITC'22 Technical Program Committee
- IEEE ICDC'2010 Technical Program Committee
- Seventh International Conference on Networked Sensing Systems (INSS'10) Technical Program Committee
- IEEE INFOCOM'2010 Technical Program Committee
- IEEE IFIP Co-NEXT 2009 Technical Program Committee
- ACM/USENIX Internet Measurement Conference 2009 (IMC'09) Technical Program Committee
- IEEE ICNP 2009 Technical Program Committee
- ACM SIGCOMM Conference 2009 Technical Program Committee
- Sixth International Conference on Networked Sensing Systems (INSS'09) Technical Program Committee
- ACM MobiHoc 2009 Technical Program Committee

- ACM SIGMETRICS HOTMETRICS'09 Workshop Technical Program Committee
- IEEE International Conference on Signal Processing and Multimedia Applications (SIGMAP'09) Technical Program Committee
- The Second International Workshop on Real Time Service-Oriented Architecture and Applications (RTSOAA'09)
- IEEE INFOCOM'2009 Technical Program Committee
- Asian Internet Engineering Conference (AINTEC) 2008 Technical Program Committee
- Third Workshop on Internet Network Management (INM'08)
- IEEE INFOCOM'2008 Technical Program Committee, Area Chair
- IEEE MMCN 2008 Technical Program Committee
- ACM MobiHoc 2008 Technical Program Committee
- ACM SIGMETRICS 2008 Technical Program Committee
- IEEE 28th International Conference on Distributed Computing Systems (ICDCS 2008)
- The First International Workshop on Real Time Service-Oriented Architecture and Applications (RTSOAA'08)
- ACM SIGCOMM Conference 2007 Technical Program Committee
- ACM SIGCOMM MineNet Workshop'07 Technical Program Committee
- ACM SIGMETRICS 2007 Technical Program Committee
- IEEE ICNP 2007 Technical Program Committee
- IEEE Global Internet 2007 Technical Program Committee
- IEEE IFIP Co-NEXT 2007 Technical Program Committee
- IEEE WoWMoM 2007 Technical Program Committee
- First Workshop on Sensor Network Architecture, Technical Program Committee
- ACM/USENIX Internet Measurement Conference 2006 Technical Program Committee
- ACM SIGCOMM MineNet Workshop'06 Technical Program Committee
- IEEE ICNP 2006 Technical Program Committee
- ACM SIGMETRICS 2006 Technical Program Committee
- IEEE WoWMoM 2006 Technical Program Committee
- International Multi-Conference on Computing in the Global Information Technology
- IEEE ICNP 2005 Technical Program Committee
- ACM SIGMETRICS 2005 Technical Program Committee
- IEEE INFOCOM 2005 Technical Program Committee
- ACM SIGCOMM MineNet Workshop'05 Technical Program Committee
- IEEE IWQoS Workshop 2005 Technical Program Committee

- IFIP Performance 2005 Technical Program Committee
- IEEE Globecom 2005 Symposium on Autonomic Internet Technical Program Committee
- ACM SIGMETRICS 2004 Technical Program Committee
- ACM SIGMM 2004 Technical Program Committee
- IEEE Pervasive Computing 2004 Technical Program Committee
- IEEE Hot Interconnect 2004 Technical Program Committee
- IEEE INFOCOM'04 Technical Program Committee
- IEEE/IFIP International Workshop on Quality of Service (IWQoS'03)
- ACM SIGMETRICS 2003
- IEEE INFOCOM'2003
- IEEE Computer and Communication Workshop 2002 (CCW'02)
- 2002 HotInterconnect Conference (HotI'02)
- 2002 IEEE High Performance Switching and Routing Conference (HPSR 2002)
- 2002 IEEE Internet Performance Symposium (IPS 2002)
- IEEE Internet Performance Symposium at Globecom 2001
- IEEE INFOCOM'2001 (the 20th Annual Joint Conference of the IEEE Computer and Communications
- Joint ACM SIGMETRICS'2001/IFIP Performance 2001
- 2001 HotInterconnect Conference (HotI'01)
- 2001 IEEE High Performance Switching and Routing Conference 2001 (HPSR 2001)
- NOSSDAV'2001
- 2001 IEEE Internet Performance Symposium (IPS 2001)
- ACM SIGMETRICS'2000
- International Symposium on Multimedia Software Engineering (MSE-2000)
- IEEE International Conference on Distributed Computing Systems (ICDCS 2000)
- Technical Program Committee, High Speed Networks Symposium, IEEE Globecomm'2000
- Third International Workshop on Multiple Protocol Label Switching (MPLS), 2000
- Member of Technical Program Committee, IEEE INFOCOM'99 (the 18th Annual Joint Conference of the IEEE Computer and Communications Societies on Computer Communications)
- Second International Workshop on Multiple Protocol Label Switching (MPLS), 1999
- International Workshop on Group Communication (IWGC'99)
- IEEE INFOCOM'98

- Group Communication Workshop, 28th International Conference on Parallel Processing, 1998

JOURNAL EDITORIAL BOARDS

- Advisory Board, *Proceedings of ACM on Measurement and Analysis of Computing Systems (PACM MACS*; also Guest Co-Editor-in-Chief for the founding issues of PACM MACS as co-chair for ACM SIGMETRICS'17

- Associate Editor, *Computational Social Networks*, Springer Open Journal, 2013 - Present.

- Associate Editor, *Journal of Computer Science and Technology*, Chinese Academy of Sciences, 2009 - Present.

- Associate Editor, *IEEE/ACM Transactions on Networking*, 2001 - 2008.

- Associate Editor, *Computer Networks, an International Journal*, 2001 - 2004.

OTHER MAJOR INTERNAL & EXTERNAL SERVICES

University and Departmental Committees:

- Associate Director for Research, Digital Technology Center (May 2015 - Present)

- Department Strategic Planning Committee (2006-2007; 2013-2014), and the Chair of the Committee from Fall 2014 to Spring 2015

- Department Evaluation Committee for Tenured Faculty (2006-2010; 2012-2014; 2015-2016)

- Department Curriculum Committee (2012-2013)

- Chair of the Research Opportunity Committee (2005-2007)

- Chair of the DTC Chaired Professor Search Committee (2005-2007)

- Digital Technology Center (DTC) Task Force Committee, 2002-2004

- Digital Technology Center (DTC) Internal Advisory Committee, 2004-2007

Other External Services:

- IEEE Computer Society Fellow Committee, 2015

- Have served on NSF, DoE and other government grant proposal review panels and served as a reviewer for other funding agencies.

- National Science Foundation CISE *Future Internet Design (FIND)* Programm Planning Committee, 2007-2010.

- Academic Fellowship Board, Narus Inc., 2007-2014.

- Scientific Advisory Board, Spanish IMDEA Networking Research Institute, 2007-2010

- Advisory Board of Bachelor of Information and Networking (BIN), a joint program between the University and North Hennepin Community College, 1997-1999