

Theses

Curriculum Vitae



Dr. Raj Jain
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Computer Science and Engineering
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Raj Jain is Barbara H. and Jerome R. Cox Jr Professor of Computer Science and Engineering at Washington University in St. Louis. Previously, he was the CTO and one of Nayna Networks, Inc.'s co-founders, a next-generation telecommunications systems company in San Jose, CA. He was a Senior Consulting Engineer at Digital Equipment Corporation in Littleton, Mass, and then a Computer and Information Sciences professor at Ohio State University in Columbus, Ohio.

Dr. Jain is a Life Fellow of IEEE, a Fellow of ACM, a Fellow of AAAS, and a Fellow of the Academy of Science, St. Louis. He is a winner of the [2018 James B. Eads Award](#) from the Academy of Science, Saint Louis, the [2017 ACM SIGCOMM Lifetime Achievement Award](#), the [2015 A. A. Michelson Award](#) from Computer Measurement Group, the 2014 Distinguished Alumnus Award from the Indian Institute of Science, Bangalore Alumni Association, 2006 ACM SIGCOMM Test of Time award, and [Center for Development of Advanced Computing – Advanced Computing and Communications Society](#) (CDAC-ACCS) Foundation Award 2009, and WiMAX Forum Individual Contribution Award 2008.

He is the author of “[The Art of Computer Systems Performance Analysis](#),” which won the 1991 “Best-Advanced How-to Book, Systems” award from the Computer Press Association. His fourth book, “[High-Performance TCP/IP: Concepts, Issues, and Solutions](#),” was published by Prentice Hall in November 2003. He is a co-editor of “[Quality of Service Architectures for Wireless Networks: Performance Metrics and Management](#),” published in April 2010.

He has 15 patents and has written or edited 13 books, 20 book chapters, 100+ journal and magazine papers, and 130+ conference papers. He is known for his research on applying quantum computing, AI, and blockchain to Cybersecurity, Wireless technologies for IoT, 4G and unmanned aircraft systems, congestion control and avoidance, traffic modeling, performance analysis, and error analysis. His papers have been widely referenced. Google Scholar lists over **42,700+ citations** to his publications. He is a co-inventor of the DECbit scheme, which is implemented in various forms in DECnet, OSI, Frame Relay, and ATM Networks. His team has developed several switch algorithms for explicit rate-based congestion avoidance in ATM networks (Explicit Forward Congestion Indication). The DECbit paper has received the ACM SIGCOMM Test of Time Award. His team has developed several switch algorithms for explicit rate-based congestion avoidance in ATM networks.

A distinguishing factor of his research is its relevance to the industry. As a faculty member, Dr. Jain actively participates in industry forums like RTCA, WiMAX Forum, IEEE Standards group, ATM Forum, and Internet Engineering Task Force. He has made over 200 contributions that

ensured that his research was implemented and not just published as papers. He is acknowledged in published versions of 260+ IEEE standards. Based on his active participation in the computer industry, Dr. Jain was awarded the 1999 siliconindia Leadership Awards for Excellence and Promise in Business and Technology and the 2008 WiMAX Forum Individual Contribution Award. He is also the recipient of "The Lumley Engineering Research Award 1999" and the "Research Accomplishment Award 1996" by Ohio State University, College of Engineering, and the "Ameritech Prize 1995" by Ohio State University.

He has been a keynote speaker at 60+ conferences including the 3rd International Conference on Emerging Trends in Networks and Computer Communications ([ETNCC23](#)), the International Conference on Robotics and Cyber-physical Machines ([ICRCPM2023](#)), IEEE World AI IoT Congress 2022 (AIIoT 2022), Cybersecurity and Evolutionary Data Engineering ([ICCEDE2022](#)), International Symposium on Blockchain Advancements ([ISBA](#)), International Conference on Data Science and Information System (ICDSIS 2022), International Scientific Forum FIT-M 2021, 40th IEEE International Performance Computing, and Communications Conference ([IPCC21](#)), Cyber Week 2021 ([CyberWeek21](#)), DX21: Digital Transformation Summit ([DX21](#)), IEEE Blockchain Conference 2020, 2nd International Conference on Blockchain Technology (ICBCT), International Workshop on Internet of Things and Security (IoTSecurity20)" the International Conference on Computing and Network Communications ([CoCoNet'19](#)), International Conference on Computing, Networking and Communications ([ICNC 2019](#)), 2nd International Conference on Smart IoT Systems: Innovations in Computing (SSIC 2019), 4th IEEE International Smart Cities Conference ([ISC2](#)) 2018, IEEE Conference on Network Softwarization ([NetSoft 2018](#)), IEEE International Conference on High-Performance Switching and Routing ([HPSR 2018](#)), IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies ([AEECT 2017](#)), and [ACM SIGCOMM 2017](#).

He is on the Editorial Boards of the [Journal of High-Speed Networks](#) (USA), [Mobile Networks and Applications](#), [International Journal of Virtual Technology and Multimedia](#) (IJVTM) (UK), [International Journal of Wireless and Optical Communications](#) (IJWOC), [Vehicular Communications](#) (Elsevier), [International Journal of Communication Networks and Distributed Systems](#) (IJCNDs), [Mobile Communications and Applications](#), [International Journal on Advances in Internet Technology](#), and the advisory boards of Global Science and Technology Forum (GSTF), Singapore, [Asia-pacific Journal of Neural Networks and its Applications](#) (AJNNIA), [Open Computer Science](#). He was also a co-guest editor of ACM/Springer Mobile Networks and Applications (MONET) special issue on device-to-device communication in 5G Networks published in 2017. In the past, he has served on the Editorial Boards of EIA Transactions on TSim Tools, Recent Advances in Communications and Networking, Journal of Innovation in Digital Ecosystems, Computer Communications (UK), IEEE/ACM Transactions on Networking, Computer Networks: The International Journal of Computer and Telecommunications Networking, Journal of Telecommunication System and Management (JTSM), Central European Journal of Computer Science (Poland), Infocommunications Journal (Hungary) and ICTACT Journal on Communications Technology, and has served as a Guest Co-Editor of IEEE Communications Magazine September 2012 special issue on Cloud Computing: Networking and Communications Challenges, July 2011 special issue on Future Internet Architectures: Design and Deployment Perspective, April 2001 special issue on TCP Performance over Emerging High-Speed Networks, IEEE Communications Magazine March and July 1999 special issues on Satellite Networks, Computer Networks and ISDN System October 1998 special issue on ATM Traffic Management, and Computer Communications (UK), April-May 1993 issue.

Raj Jain is one of the fellows advising [Parallel Chain](#) – a blockchain company in Hong Kong. In the past, he has served serves on the advisory board of the [School of Computing and Information Sciences](#) at Caritas Institute of Higher Education, Hong Kong, Astra (2018-2019), Bluesage Communications, Inc. (2013-2018), InBay Technology Solutions, Inc, San Jose, CA (2012-2015), AKS University, Satna, MP, India (2012-2015), Indo-US Collaboration in Engineering Education (IUCEE) (2013-2015), DOCOMO Innovations, Inc., San Jose, CA (2011), Mercury, Mountain View, CA (2004), Teradient Networks, San Jose, CA, Corona Networks, Inc., Milpitas, CA (2000-2004), Avatar Networks, Fremont, CA (2001-2002), Rhonet Systems, Columbus, OH (2002-2003), Chip Engines, Inc., Sunnyvale, CA (2000-2002), EdgeNet Communications Corporation, Burlingame, CA (2000-2002), Tivre Networks, San Jose, CA (2001-2002), Irvine Networks, Irvine, CA acquired by Simple Technologies. (2000-2001), Beacon Telco, Boston, MA (2001-2002), iBEAM Broadcasting Corporation, Sunnyvale, CA (2000-2001), Nexabit Networks, Westborough, MA, acquired by Lucent Corporation. (March 1997-1999), Amber Networks, Fremont, CA, acquired by Nokia (1999-2001) and on the Board of Directors of MED-I-PRO Systems, LLC, Pomona, CA (1998-2000). He was also a consultant to several networking companies.

He has served as a Distinguished Lecturer for the IEEE Communications Society (1997, 1999-2006), ACM Lecturer (1991-97), IEEE Computer Society Distinguished Visitor (1993-96), Vice-Chair of ACM SIGCOMM (1991-95), Chair of TIA/SCD/CIS Working Group on ATM Traffic Management (1996-1998), Editor of the [WiMAX System Evaluation Methodology](#) (2005-2008), Editor of ATM Forum Performance Testing Specification (1996-1998), Member of IEEE Computer Society Education Board, Member of IEEE Computer Society Publication Board (1995-1997), Member of the 1997 National Science Foundation Research Infrastructure Program Final Evaluation Panel, Member of U.S. delegation (Computer Communications) to People's Republic of China in July 1987, Member of National Science Foundation's site visit team to evaluate NSF Engineering Research Center program at Center for Telecommunications Research, Columbia University 1991.

Dr. Jain was the Conference Chair of the International Conference on Communications, Image, and Signal Processing (CCISP 2016), General Chair of the International Conference on Convergence and Broadband Networking (ICCBN 2008), General Co-Chair of SPIE's Broadband Access Communication Technologies Conferences in 2007-2011, and the founding General Chair of the First International Conference on Broadband Networking ([Broadnets 2004](#)). He has served as a program committee member on 275+ other conferences.

He is listed in Who's Who in the World (since 1998), Who's Who in America (since 2000), Who's Who in American Education (since 2002), Who's Who in Finance and Business (since 2001), Who's Who in Science and Engineering (since 1998), Writers Directory (Since 1997), Who's Who in Midwest (1996-2000), Who's Who in Writers, Editors, & Poets 1991-92, Contemporary Authors 1991, and Who's Who in the Computer Industry, 1989.

His Ph.D. thesis entitled "[Control theoretic Formulation of Operating Systems Resource Management Policies](#)" was published in the Outstanding Dissertations in the Computer Sciences Series by Garland Publishing Company, New York, NY.

In 1984, 1985, and 1987, he taught a graduate course on performance analysis at the Massachusetts Institute of Technology. This led him to write his performance analysis book, a popular textbook on the subject.

Until 1994, he was a Senior Consulting Engineer at Digital Equipment Corporation, Littleton, Massachusetts. For 16 years, he led the design and analysis of many computer systems and

networking technologies, including VAX Clusters, Ethernet, DECnet, OSI, FDDI, and ATM networks. He was also an active member of the All-Optical Networking (AON) consortium consisting of Digital, M.I.T./Lincoln Lab, and AT&T, which successfully bid for DARPA funding and started researching Dense Wavelength Division Multiplexing (DWDM) networks.

He is active in quantum computing, blockchains, machine learning applications to cybersecurity, software-defined networking, mobile edge computing, multi-cloud computing, Internet of things, next-generation Internet architecture, unmanned aircraft systems, wireless networking, network security, and traffic management and quality of service in data networks. His research has influenced the direction of traffic management and testing of networks. He is an active participant in several industry forums, including the Institute of Electrical and Electronic Engineering (IEEE), Internet Engineering Task Force (IETF), ATM Forum, WiMAX Forum, Optical Interoperability Forum (OIF), American National Institute (ANSI), and Telecommunications Institute of America (TIA).

Dr. Jain maintains a highly informative website on the latest advances in networking. The website is used extensively in industry and academia and has won the "**Top Excellence Award**" for its usefulness. All his class lectures and most external lectures have been videotaped and available for streaming. These lectures are regularly viewed by students from all over the world, particularly in third-world countries.

APPOINTMENTS

- May 2016-Present, Barbara J. and Jerome R. Cox, Jr. Professor, Washington University, St. Louis, MO
- August 2005-May 2016, Professor, Washington University, St. Louis, MO
- April 2000-July 2007, Co-Founder and Chief Technology Officer, Nayna Networks, Inc., Milpitas, CA
- September 2002-June 2003 and November 2003-August 2004, Adjunct Professor, Ohio State Univ., Columbus, OH
- April 1994 –August 2002, Professor, Ohio State Univ., Columbus, OH
- May 1978- March 1994, Senior Consulting Engineer, Digital Equipment Corp., Littleton, MA
- January 1987-June 1987, Honorary Lecturer, Massachusetts Inst. of Technology, Cambridge, MA
- January 1985-June 1985, Honorary Lecturer, Massachusetts. Inst. of Technology, Cambridge, MA
- September 1983-June 1984, Visiting Scholar, Massachusetts. Inst. of Technology, Cambridge, MA

EDUCATION

- Ph. D. (Applied Math/Comp. Sc.), Harvard University, Cambridge, MA. Thesis published as a distinguished dissertation in Computer Science, 1978
- M. E. (Comp. Sc. & Controls), Indian Institute of Science, Bangalore, India, 1974
- B. E. (Electrical Engineering), A. P. S. University, Rewa, India, 1972

RESEARCH INTERESTS

- Quantum Networking and Security
- Machine learning applications for Cybersecurity
- Blockchain Applications for Security
- Edge Cloud/Multi-Cloud Application Management
- Wireless for Unmanned Aircraft Systems
- Architecture for the Next-Generation Internet
- Software-Defined Networking
- Internet of Things
- Congestion Control and Traffic Management
- Performance Analysis, Simulation, and Modeling

AWARDS and COMMENDATIONS

1. **2020 Best Research Paper Award** by Elsevier Journal of Computer Communications (COMCOM), for “Optimal Virtual Network Function Placement and Resource Allocation in Multi-Cloud Service Function Chaining Architecture,” published in Computer Communications, Vol. 102, April 2017, pp. 1-16
2. **2018 James B. Eads Award** from Academy of Science, Saint Louis, April 2018, <https://www.academyofsciencestl.org/awards/>
3. **ACM SIGCOMM Lifetime Achievement Award**, August 2017, <https://www.sigcomm.org/awards/sigcomm-awards>
4. **Best Paper Award**, Cloud Computing, and Data Center Systems category at the 7th IEEE Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, January 9-11, 2017.
5. **Barbara J. and Jerome R. Cox Jr. Chair**, Since May 24, 2016.
6. **A. A. Michelson Award**, Computer Measurement Group, November 2015, <https://www.cmg.org/2015-a-a-michelson-award-announcement/>
7. **Distinguished Alumnus Award**, Indian Institute of Science Alumni Association, September 2014
8. Finalist, “**Vodafone Wireless Innovation Project 2014**,” April 2014, <http://vodafone-us.com/wireless-innovation-project/past-competitions/2014/2014-finalists/>
9. **Fellow of AAAS** for distinguished contributions to computer networking, impacting traffic management, performance modeling, and wireless networking as a professor and scientist, November 1, 2012.
10. **CDAC-ACCS** (Center for Development of Advanced Computing-Applications of Computing and Communications Sciences) **2009 Foundation Award** 2009.
11. “**WiMAX Forum Individual Contribution Award**,” in appreciation of leadership in driving the capacity planning tool for the Application Working Group, October 2008

12. **"ACM SIGCOMM Test of Time Paper Award,"** 2006.
13. Best paper award for **"Traffic Management in Multilevel Explicit Congestion Notification,"** in Proceedings of the 5th World Multi-conference on Systemics, Cybernetics and Informatics SCI'2001, ABR over the Internet, Orlando, FL, July 22-25, 2001, pp. 12-17.
14. **Web of Science List of Highly Cited Researchers,** 2001
15. **"1999 siliconindia Leadership Award for Excellence and Promise in Business and Technology,"** October 1999, San Jose, CA.
16. **"Lumley Engineering Research Award 1999"** from Ohio State University College of Engineering.
17. Distinguished paper award for **"Modeling Traffic Management in ATM Networks with OPNET,"** Proceedings of OPNETWORK'98, Washington DC, May 1998, <http://www.cse.wustl.edu/~jain/papers/opnetwork98.htm>
18. **"1996 Ohio State University College of Engineering Annual Research Accomplishment Award,"** May 6, 1996.
19. **Ameritech Fellowship,** 1995.
20. **Fellow of ACM** for developing a new control-theoretic approach to computer systems modeling, October 1995
21. **Fellow of IEEE** for contributions to performance analysis and modeling of computer systems and networks and for providing a new direction for solutions to the problem of network congestion, 1993.
22. **"Best Advanced How-to Book, Systems"** award from Computer Press Association, 1991.
23. Ph.D. thesis entitled **"Control-theoretic Formulation of Operating Systems Resource Management Policies"** was published in the Outstanding Dissertations in the Computer Sciences Series by Garland Publishing Company, New York, NY.
24. Nominated for Ohio State University 2000 Distinguished Scholar Award, June 2000
25. Renominated for Ohio State University 2001 Distinguished Scholar Award, June 2001
26. Nominated for the **"Technologist of the Year"** award from The Ohio Academy of Science, Columbus, OH, February 20, 1997.
27. Listed in:
 1. American Men and Women of Science, Since 2015
 2. Who's Who in the World, Marquis, Since 1998.
 3. Who's Who in America, Marquis, Since 2000.
 4. Who's Who in Engineering Education (WWEE), Since 2002.
 5. Who's Who in Sciences (Higher Education) Since 2008
 6. Who's Who in American Education, Marquis, Since 2005.
 7. Who's Who in Finance and Industry, Marquis, 2001-2003.
 8. Who's Who in Finance and Business, Marquis, Since 2004

9. Who's Who in Science and Engineering, 4-5th Ed, Marquis, Since 1998.
10. Writer's Directory, Since 1997
11. Who's Who in Midwest, Marquis, 1996-2000.
12. Who's Who in Writers, Editors, & Poets 1991-92.
13. Contemporary Authors 1991, and
14. Who's Who in the Computer Industry, Marquis, 1989.

RESEARCH FUNDING

1. Aiman Erbad, Ala Al-fuqaha, and Raj Jain, "**Building the Foundation for a Scalable and Secure Quantum Internet**," Qatar National Research Fund, ARG01-0501-230053, April 2024, \$739,680=\$591,744 (HBKU), \$197,248 (WUSTL), April 1, 2024=March 30, 2027.
2. Raj Jain, "**Quantum Native Routing**," Cisco University Research Program Gift, \$100,000, April 1, 2023-March 31, 2024.
3. Roberto DiPietro, Raj Jain, Khalid Al-Ali, Spiridon Bakiras, Abdulaziz Aldosari, Hassan El Sallabi, "**Extending Blockchain Technology - a Novel Paradigm and its Applications to Cybersecurity and Fintech**," Qatar National Research Fund, NPRP11S-0109-180242, \$600,000=\$390,00 (HBKU)+\$210,000 (WUSTL), May 12, 2019-12 May 2022.
4. Khaled M. Khan, Raj Jain, Nader Meskin, "**Intrusion Detection System (IDS) for Industrial Control Systems**," Qatar National Research Fund, NPRP-10-0206-170360, \$540,000=\$351,000 (QU)+\$189,000 (WUSTL), January 22, 2018-January 21, 2021
5. A. Al-Ali, A. Shikfa, R. Jain, "**Cyber Security For Next-Generation Healthcare In Qatar**," Qatar National Research Fund, NPRP-10-0125-170250, \$600,000=\$390,000 (QU)+\$210,000 (WUSTL), July 1, 2018-June 30, 2021
6. Raj Jain, "**NETS: SMALL: Fault and performance management in carrier-grade virtual networks over multiple clouds**," NSF, CNS-1718929, \$299,999, August 1, 2017-July 31, 2021.
7. Raj Jain, "**Mobile Multi-Cloud Application Delivery**," Futurewei Corporation, Gift, \$95,000, December 2015.
8. Aiman Erbad, Raj Jain, Mohammed Samaka, "**Intercloud WAN Delivery Platform for Business Applications**," Qatar National Research Fund, NPRP-8-634-1-131, \$737,931 = \$479,657 (QU)+\$258,274 (WUSTL), December 1, 2015-November 30, 2018
9. Raj Jain, Elisa Bertino, Arjan Duresi, "**CICI: Secure Data Architecture: Collaborative Research: AMDN Framework for Secure Scientific Collaboration**," NSF, CNS-1547380, \$499,820 = \$220,000 (WUSTL)+\$139,999 (IUPUI)+ \$139,831 (Purdue), Jan 1, 2016-Dec 31, 2018
10. Raj Jain, "**AppFabric: Application Deployment and Service Chaining in Future NFV Cloud, WAN Environments**," Cisco University Research Program Gift, \$152,925, January 2015.
11. Raj Jain, "**OpenADN: Application Delivery in a Global Multi-Cloud Environment using SDN**," Broadcom Foundation Gift, \$25,000, Nov 1, 2014-Oct 31, 2015.

12. M. Samaka and Raj Jain, "**Middleware Architecture for Cloud-Based Services Using Software Defined Networking (SDN)**," Qatar National Research Fund, NPRP-6-901-2-370, \$1,049,583 = \$734,049 (QU)+\$315,534 (WUSTL), December 1, 2013-November 30, 2016.
13. Raj Jain, "**OpenADN: Application Delivery in a Global Multi-Cloud Environment using SDN**," Broadcom Foundation, \$25,000, Nov 1, 2013-Oct 31,2014.
14. Raj Jain, "**An Application Delivery Platform for Mobile Apps on Global Clouds**," Cisco University Research Program Gift, \$99,216, December 15, 2012-December 14, 2013.
15. Raj Jain and A. Durresi, "**Collaborative Research: Eager: An Application Delivery Platform for Mobile Apps on Global Clouds**," NSF, CNS-1249681 and #1249678, \$199,997 = \$139,999 (WUSTL) + \$59,998 (IUPUI), September 1, 2012-August 31, 2014.
16. Raj Jain, "**openSDN-A Service Delivery Network Architecture**," Cisco University Research Program Gift, \$50,000, January 2, 2012-December 31, 2012.
17. A. Durresi and Raj Jain, "**RAPID: Collaborative Research: Using Lessons from Disasters in Japan to Develop Communications for Emergency Situations**," NSF CNS-1138665, \$49,996 = \$24,996 (WUSTL) + \$25000 (IUPUI), July 15, 2011-July 14, 2013.
18. Raj Jain and P. Biswas, "**Communication and Modeling for Green Buildings**," International Center for Advanced Renewable Energy and Sustainability (i-CARES), Washington University, \$35,000, May 1, 2011-March 31, 2012.
19. Raj Jain and A. Durresi "**Collaborative Research: EAGER: Large-Scale Distributed Scientific Experiments on Shared Substrate**," National Science Foundation, CNS-1019119, \$299,494 = \$199,968 (WUSTL) + \$99,526 (IUPUI), February 15, 2010-October 15, 2012.
20. Raj Jain, "**Internet 3.0: Architecture for Next Generation Internet**," Intel Corporation Gift, \$60k, December 2009
21. Raj Jain, "**Internet 3.0: Architecture for Next Generation Internet**," Huawei Technologies Gift, \$30k, November 2008-March 2009.
22. Raj Jain, "**Internet 3.0: Architecture for Next Generation Internet**," Intel Corporation Gift, \$60k, May 2008-April 2009.
23. Raj Jain, "**WiMAX Modeling**," WiMAX Forum, \$50k, Jan 2008-December 2008.
24. Raj Jain, "**Internet 3.0: Architecture for Next Generation Internet**," Intel Corporation Gift, \$65k, April 2007-March 2008.
25. Raj Jain, "**WiMAX Modeling**," WiMAX Forum, \$70k, June 2007-December 2007.
26. Raj Jain, "**WiMAX Modeling**," WiMAX Forum, \$70k, December 2006-May 2007.
27. Raj Jain, "**Traffic Management in IP Networks**," National Science Foundation, \$360,000, October 1, 2000-September 31, 2003.
28. Raj Jain, Unrestricted donation of \$10,000 from PMC-Sierra, San Jose, CA, December 1999.
29. M. Atiquzzaman, Raj Jain, "**QoS over Satellite Networks**," NASA, \$130,000, October 1999-September 2000.
30. W. Feng, R. Crawfis, and Raj Jain, "**CISE Research Instrumentation: A Video-Based Testbed for Scientific Visualization and Networking Research**," National Science Foundation, \$182,000, December 15, 1998, to November 30, 2001.

31. M. Fitz, U. Mitra, S. Ellingson, Raj Jain, and C. Hou, "**An Experimental Testbed for Research in Advanced Wireless Communications**," \$1,450,203, Funded by National Science Foundation, September 1, 1998, to August 31, 2001
32. M. Fitz, Raj Jain, "**An Experimental Testbed for Research in Advanced Wireless Communications**," \$10,000, Research Experiences for Undergraduates (REU) supplement to the above grant. Funded by National Science Foundation, Summer 1999.
33. Raj Jain, "**Design Issues in Traffic Management for the ATM UBR+ Service for TCP over Satellite Networks**," \$159,987, Funded by National Aeronautics and Space Administration, NASA Lewis Research Center, Cleveland, OH, December 2, 1997- December 1, 1998.
34. Raj Jain, "**Multimedia over ATM Networks**," Ameritech Foundation, \$21,174, October 1, 1996, to September 30, 1997
35. Raj Jain, D.K. Panda, A.E. Stutz, G. Wallis, M. Farrell, B.A. Blake, C.H. Lin, J. Sang, M. Atiquzzaman, Y. Pan, H. Carter, P.A. Vendt, O. Garcia, T. Saliga, "**OCARNet: Ohio Computing and Communications ATM Research Network**," Ohio Board of Regents Investment Fund, \$1,721,730+, March 1, 1996, to February 28, 1999
36. Raj Jain and Wu-Chi Feng, "**Network Management Techniques for VBR Digital Audio and Video for ATM**," AT&T/Lucent Foundation, \$40,000, October 1, 1996, to September 30, 1997
37. Raj Jain, D. K. Panda, Anish Arora, and Thomas W. Page, "**ATM Testbed for Multimedia and Distributed Computing**," Funded jointly by the National Science Foundation (NSF), Ohio State University, Ohio Board of Regents Action Fund, \$176,500 (NSF), \$123,500 (OSU), and \$100,000 (OBR Action Fund), January 1, 1996 to December 31, 1997.
38. Raj Jain and Steve Lai, "**Laboratories for Data Communications and Computer Networks**," National Science Foundation, \$356,067 NSF + \$270,078 OSU match, July 1, 1995, to June 30, 1998
39. Raj Jain, "**Congestion Avoidance in High-Speed Networks**," National Science Foundation (NSF), \$375,000, September 1, 1996, to August 30, 2000
40. Jennifer Hou, Jason Han, and Raj Jain, "**Communications Middleware and Software for Providing End-to-End QoS for Real-Time Distributed Environments**," \$100,000, Funded by DARPA/ITO, Arlington, VA, June 1, 1997
41. Charlie Bender, Alvin Stutz, Gene Wallis, Raj Jain, and D. K. Panda, "**vBNS Gateway for Ohio via OCARNet and OARnet**," National Science Foundation, \$350,000, January 1, 1997, to December 31, 1998
42. Stan Ahalt and Raj Jain, "**Compressed Video via ATM: Enabling Technology for Imaging Applications**," The Ohio State University, Targeted Interdisciplinary Seed Grant Program, Image Technology Research Focus Area, \$55,000, June 1, 1997, to December 21, 1998
43. Raj Jain, "**Multimedia over ATM Networks**," Ameritech Fellowship, Ohio State University, \$29,674, May 15, 1995-May 14, 1996.
44. Raj Jain, Unrestricted donation of \$75,000 from FORE Systems for research on ATM networks.
45. Raj Jain, Unrestricted donation of \$42,425 from AdTech Electronics Engineering for research on ATM performance testing.

46. Raj Jain and F. Zhao, "**Wireless Communication between Autonomous Robotics Agents and Resource Management in Wireless Networks**," \$45,000, AT&T Foundation, October 1, 1995-Sept 20, 1996.
47. Raj Jain, Unrestricted donation of \$25,000, Cascade Communications Corp., December 1, 1995.
48. Raj Jain, Unrestricted donation of \$25,000 from Intel Corp., February 1995.
49. Raj Jain, Unrestricted donation of \$25,000 from StrataCom, Inc, January 1995.
50. Raj Jain, Donation of \$10,000 from AT&T Columbus for Networking and Telecommunications Seminars, December 1994.

PROFESSIONAL ACTIVITIES

Keynote Speaker

1. Raj Jain, "**AI for IoT and Security: Issues and Challenges**," Keynote at the 3rd International Conference on Emerging Trends in Networks and Computer Communications (ETNCC), August 16, 2023, <https://etncc.nust.na/keynotes>.
2. Raj Jain, "**AI for IoT and Security: Issues and Challenges**," Keynote at the International Conference on Robotics and Cyber-physical Machines (ICRCPM2023), Chaitanya Bharathi Institute of Technology, Hyderabad, India, April 28-29, 2023, <https://www.cbit.ac.in/news/20910/>
3. Raj Jain, "**AI for IoT and Security: Issues and Challenges**," Keynote at Cybersecurity and Evolutionary Data Engineering (ICCEDE2022) Conference, Delhi, India, December 9, 2022, <https://www.glbitm.org/iccede2022/Inauguration%20Schedule.pdf>
4. Raj Jain, "**Quantum-Blockchains**," Keynote at International Symposium on Blockchain Advancements, Singapore, Dec 2, 2022, <https://isba.global/speakers>
5. Raj Jain, "**Common Issues and Challenges in AI for Cybersecurity**," Keynote at International Conference on Data Science and Information System (ICDSIS 2022), Dubai, October 20, 2022
6. Raj Jain, "**AI for IoT and Security: Issues and Challenges**," Keynote at IEEE World AI IoT Congress 2022 (AIoT 2022), Seattle, WA, June 6, 2022
7. Keynote Speaker, "**Extending Blockchains with AI for Risk Management**," The International Scientific Forum FIT-M 2021, Moscow, December 16-18, 2021
8. Keynote Speaker, "**Extending Blockchains with AI for Risk Management**," the 40th IEEE International Performance Computing and Communications Conference (IPCCC) 2021, Austin, Texas, USA, October 29th, 2021, <https://www.ipccc.org/ipccc2021/main.php?page=10>
9. Keynote Speaker, "**Extending Blockchains with AI for Risk Management**," Cyber Week 2021, Kindi Research Center, Qatar University, Doha, Qatar, October 25, 2021, <https://www.qu.edu.qa/conference/cw2021>
10. Keynote Speaker, "**Extending Blockchains with AI for Risk Management**," DX21:Digital Transformation Summit, Kerala University of Digital Sciences, Innovation and Technology, Thiruvananthapuram, Kerala, India, February 16, 2021, <https://duk.ac.in/event/dx21digital-transformation-summit/>
11. Keynote Speaker, "**Extending Blockchains with AI for Risk Management**," IEEE Blockchain Conference 2020, November 4, 2020.
12. Keynote Speaker, "**Extending Blockchains for Risk Management**," the 2nd International Conference on Blockchain Technology (ICBCT), Hawaii, March 13, 2020.

13. Keynote Speaker, "**Recent Networking Developments for IoT: What's In What's Out,**" Keynote at International Workshop on Internet of Things and Security, Stratford, UK, February 18, 2020
14. Keynote Speaker, "**Trends and Issues in Networking: What's In, What's Out,**" The Third International Conference on Computing and Network Communications (CoCoNet'19), Trivandrum, India, December 18, 2019, <http://coconet-conference.org/2019/?q=speakers>
15. Keynote Speaker, "**12 Trends in Networking: What's In, What's Out,**" International Conference on Computing, Networking and Communications (ICNC) 2019, Honolulu, Hawaii, February 20, 2019, <http://www.conf-icnc.org/2019/>
16. Keynote Speaker, "**Networking Developments for IoT: Current Research Issues,**" 2nd International Conference on Smart IoT Systems: Innovations in Computing (SSIC 2019), Jaipur, India, January 20, 2019
17. Keynote Speaker, "**Recent Advances in Networking and their Impact on Smart Cities,**" 4th IEEE International Smart Cities Conference (ISC2), Kansas City, MO, September 16-19, 2018, <http://sites.ieee.org/isc2-2018/speakers/>
18. Keynote Speaker, "**Trends and Issues in Softwarization of Networks: What's In, What's Out,**" IEEE Conference on Network Softwarization, Montreal, Canada, June 26, 2018, <http://netsoft2018.ieee-netsoft.org/program/keynotes/>
19. Keynote Speaker, "**Trends and Issues in Networking: What's In, What's Out,**" IEEE International Conference on High-Performance Switching and Routing, Bucharest, Romania, June 19, 2018, <http://hpsr2018.ieee-hpsr.org/program/#rajkeynote2>
20. Keynote Speaker, "**Current Trends in Networking With Applications to the Internet of Things and Smart Cities,**" 2017 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Amman, Jordan, October 12, 2017, <http://ewh.ieee.org/conf/aeect/Program.html>
21. Keynote Speaker, "**The Catch-up Game: Quest for the Impact,**" ACM SIGCOMM 2017, Los Angeles, CA, August 22, 2017, <https://conferences.sigcomm.org/sigcomm/2017/program.html>
22. Keynote Speaker, "**Blockchains: The Distributed Trust Technology,**" The 2017 International Conference on Computer, Information and Telecommunication Systems (CITS 2017), Dalian, China, July 21, 2017, <http://www.cse.wustl.edu/~jain/talks/cits17.htm>
23. Keynote Speaker, "**Seven Trends Leading to Opportunities in Multi-Cloud Global Application Delivery,**" 2016 International Conference on Communications, Image, and Signal Processing (CCISP), Dubai, November 19, 2016,
24. Keynote Speaker, "**Multi-Cloud Global Application Delivery for the Internet of Things and Smart Cities,**" Keynote at the 2nd IEEE International Conference on Collaboration and Internet Computing (CIC), Pittsburgh, PA, Nov 1, 2016, <http://www.sis.pitt.edu/cic2016/keynotes.html>
25. Keynote Speaker, "**Unmanned Aerial Systems: Networking Applications, Challenges, and Issues,**" Midwest Drone Introduction, St. Louis, MO, October 15, 2016
26. Keynote Speaker, "**Multi-Cloud Global Application Delivery for the Internet of Things and Smart Cities,**" the 7th IEEE Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON), Vancouver, Canada, October 14, 2016

27. Keynote Speaker, "**Blockchains: The Revolutionary Trust Protocol**," BEL 22nd Annual International Conference on Advanced Computing and Communications (ADCOM 2016), Bengaluru, India, Sep 10, 2016, <http://accsindia.org/category/speakers-at-adcom-2016/page/2/>
28. Keynote Speaker, "**Internet of Things and Smart Cities Security: Challenges and Issues**," 1st Annual Research Workshop on Advances & Innovations in Cyber Security, Memphis, TN, June 10, 2016
29. Keynote Speaker, "**Internet of Things and Smart Cities: Challenges and Issues**," 2nd IEEE International Workshop on Sensors and Smart Cities (SSC2016), St. Louis, MO, May 18, 2016, <http://ssc2016.unime.it/>
30. Keynote Speaker, "**Internet of Things Security: Challenges and Issues**," 9th Central Area Networking and Security Workshop (CANSec), University of Central Missouri, Warrensburg, MO, April 16, 2016
31. Keynote Speaker, "**Internet of Things: Research Challenges and Issues**," Internet of Things World Forum, Research and Innovation Symposium, Dubai, December 5-6, 2015
32. IEEE CS Keynote Speaker, "**Smart Cities: Technological Challenges and Issues**," 21st Annual International Conference on Advanced Computing and Communications (ADCOM) 2015, Chennai, India, September 19, 2015, <http://accsindia.org/adcom-2015-speakers/>
33. IEEE CS Keynote Speaker, "**Internet of Things: Challenges and Issues**," 20th Annual International Conference on Advanced Computing and Communications (ADCOM) 2014, Bengaluru, India, September 19, 2014, <http://accsindia.org/accs-adcom-2014-keyspeakers.html>
34. Keynote Speaker, "**Virtualization and Software Defined Networking (SDN) for Mobile Carriers**," WoWMom 2014, Sydney, Australia, June 18, 2014
35. IEEE CS Keynote Speaker, "**Networking for Big Data**," 19th Annual International Conference on Advanced Computing and Communications (ADCOM) 2013, Chennai, India, October 22, 2013, <http://accsindia.org/accs-adcom-2013-prg.html>
36. Keynote Speaker, "**Network Virtualization and Application Delivery Using Software Defined Networking**," Huawei Strategy and Technology Workshop, Shenzhen, China, May 15, 2013, and Huawei Strategy and Technology Workshop, Santa Clara, CA, March 19, 2013
37. Keynote Speaker, "**OpenADN: Mobile Apps on Global Clouds Using Software Defined Networking**," Mobile Cloud Computing & Services 2012, Low Wood Bay, Lake District, UK, June 25, 2012.
38. Keynote Speaker, "**IEEE International Conference on Communications (ICC 2012)**," Ottawa, Canada, June 10-15, 2012
39. Qualcomm Distinguished Lecture, "**International Conference on Computing Networking and Communications (ICNC 2012)**," Maui, Hawaii, 30 Jan-2 Feb 2012.
40. Inaugural and Keynote Speaker, "**International Conference on Advanced Computing, Networking, and Security (ADCONS) 2011**," National Institute of Technology Karnataka, Mangalore, India, December 17, 2011
41. Keynote Speaker, "**XXIX Brazilian Symposium on Computer Networks and Distributed Systems**," May 30-June 3, 2011, Campo Grande, Mato Grosso do Sul, Brazil.

42. Inaugural Speaker, “**3rd International Conference on Communication Systems and Networks (COMSNETS 2011)**,” Bangalore, India, January 4-11, 2011.
43. Keynote Speaker, “**4th IEEE International Symposium on Advanced Networks and Telecommunication Systems (ANTS 2010)**,” Mumbai, India, December 16-18, 2010.
44. Keynote Speaker, “**International Conference on Models of Information and Communication Systems (MICS 2010)**,” Rabat, Morocco, November 2-4, 2010.
45. CDAC-ACCS Foundation Lecture, “**17th International Conference on Advanced Computing and Communications (ADCOM 2009)**,” Bangalore, India, December 14-17, 2009., <http://www.cse.wustl.edu/~jain/talks/adcom09.htm>
46. Keynote Speaker, “**12th International Conference on Network-Based Information Systems (NBIS 2009)**,” Indianapolis, IN, Aug 19-21, 2009.
47. Keynote Speaker, “**Networking Architecture Symposium 1969-2009: Forty years of Internetworking Research**,” at Centro Stefano Franscini at Monte Verita in Ascona, Switzerland, March 15-20, 2009.
48. Keynote Speaker, “**16th IEEE International Conference on Networks (ICON) 2008**,” New Delhi, India, December 12-14, 2008.
49. Keynote Speaker, “**ACM International Conference on Multimedia 2008**,” Vancouver, BC, Canada, October 27 – 31, 2008.
50. Keynote Speaker, “**International Conference on Communication, Convergence, and Broadband Networking (ICCBN) 2008**,” Bangalore, India, July 17-20, 2008.
51. Keynote Speaker, “**International Conference on Computer and Communications Engineering (ICCCE 2008)**,” Kuala Lumpur, Malaysia, May 13-15, 2008.
52. Keynote Speaker, “**Second International Conference on Access Networks (AccessNets 2007)**,” Ottawa, Ontario, Canada, August 23-24, 2007
53. Keynote Speaker, “**11th IEEE International Conference on Parallel and Distributed Systems (ICPADS-2005)**,” Fukuoka, Japan, July 20-22, 2005
54. Keynote Speaker, “**IEEE Local Computer Networking Conference 2004 (LCN04)**,” Tampa, FL, November 18, 2004.
55. Keynote Speaker, “**2004 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS'04)**,” San Jose, CA, July 25-29, 2004.
56. Keynote Speaker, “**Concord Users Group Conference**,” Scottsdale, AZ, April 8-10, 2002.
57. Keynote Speaker, “**Opnetwork 2001**,” Washington, DC, August 27-31, 2001.
58. Keynote Speaker, “**NREN Gigabit Networking Workshop**,” Moffett Field, CA, August 14-16, 2000.
59. Keynote Speaker, “**2000 Summer Computer Simulation Conference SCSC 2000 and SPECTS 2000**,” Vancouver, BC, Canada, July 16-20, 2000.
60. Keynote Speaker, “**International Conference on High-Performance Computing (HiPC'98)**,” Chennai (Madras), India, December 19, 1998.

61. Keynote Speaker, “**ATM: Technology, Standards, Trials and Applications 1994,**” Vancouver, Canada
62. Keynote Speaker, “**Gigabit Networks- Key to Information Superhighway,**” 1994.
63. Keynote Speaker, “**IEEE Local Computer Networking Conference,**” Minneapolis, MN, September 15, 1992.
64. Keynote Speaker, “**Modeling Techniques and Tools Conference,**” Edinburgh, UK, September 18, 1992.

Editorships

1. Member of the Editorial Advisory Board, “**Open Computer Science,**” De Gruyter, 2019-Present, <https://www.degruyter.com/view/j/comp>
2. Co-Guest Editor, “**ACM/Springer Mobile Networks and Applications (MONET) special issue on Device-to-Device Communication in 5G Networks,**” Volume 22, Issue 6, December 2017.
3. Member of the Editorial Board, “**Asia-Pacific Journal of Neural Networks and its Applications (AJNNIA),**” July 2016-Present, <https://gvpress.com/journals/AJNNIA/>
4. Member of the Advisory Board, “**EIA Transactions TSimTools,**” September 2014-2021
5. Member of the Editorial Board, “**Vehicular Communications,**” Elsevier, August 2013-Present, <https://www.journals.elsevier.com/vehicular-communications/editorial-board/>
6. Member of the Editorial Board, “**International Journal on Advances in Internet Technology,**” published by IARIA, January 2012-Present, http://www.ariajournals.org/internet_technology/index.html#board
7. Member of Editorial Board, “**Mobile Communications and Applications,**” 2009-Present, <http://eai.eu/transaction/mobile-communications-and-applications>
8. Member of Editorial Board, “**International Journal of Communication Networks and Distributed Systems (IJCND),**” April 2007-Present, <http://www.inderscience.com/jhome.php?jcode=ijcnds>
9. Member of Editorial Board, “**International Journal of Virtual Technology and Multimedia (IJVTM),**” Published by Inderscience Publisher Ltd, UK, March 2005-Present-, <http://www.inderscience.com/jhome.php?jcode=ijvtm#board>.
10. Member of Editorial Board, “**International Journal of Wireless and Optical Communications (IJWOC),**” World Scientific, Singapore, March 2002-Present, <http://www.worldscientific.com/page/ijwoc/editorial-board>
11. Member of the Editorial Board, “**Mobile Networks and Applications (MONET),**” 1996-Present, <http://www.springer.com/engineering/signals/journal/11036?detailsPage=editorialBoard>
12. Member of Editorial Board, “**Journal of High-Speed Networks,**” published by IOS Press Inc., 1994-Present, <http://www.iospress.nl/journal/journal-of-high-speed-networks/>
13. Member of the Advisory Board, “**Journal of Communications,**” published by ETPub, Finland, 2008-2021, <http://www.jocm.us/index.php?m=content&c=index&a=lists&catid=18>

14. Member of the advisory board, “**Global Science and Technology Forum (GSTF)**,” Singapore, June 2010-2018.
15. Member of the Editorial Board, “**Recent Advances in Communications and Networking Technology (Formerly, Recent Patents on Telecommunications)**,” Bentham Science Publishers, July 2011-2018
16. Member of the Editorial Board, “**Journal of Innovation in Digital Ecosystems (JIDES)**,” Elsevier, July 2014-2016
17. Member of the Editorial Board, “**Infocommunications Journal**,” published by Scientific Association for Infocommunications, Hungary, 2013-Jan 2015.
18. Member of the Editorial Advisory Board, “**Central European Journal of Computer Science (CEJCS)**,” published by Springer, August 2010-December 2014.
19. Co-Guest Editor, “**IEEE Communications Magazine Special Issue on Cloud Computing: Networking and Communications Challenges**,” September 2012 issue.
20. Guest Editor, “**IEEE Communications Magazine Special issue on Future Internet Architectures: Design and Deployment Perspectives**,” July 2011 issue.
21. Member of the Editorial Board, “**Journal of Telecommunications System & Management (JTSM)**,” published by OMICS Publishing Group, Los Angeles, CA, December 2011-September 2012
22. Co-Editor-in-Chief, “**ICST Transactions on Networking and Communications**,” January 2009-2011
23. Member of Editorial Board, “**ICST Transactions on Information-centric Networking**,” September 2009-2011.
24. Member of the Editorial Board, “**ICTACT Journal on Communications Technology**,” 2009-2010.
25. Member of Editorial Board, “**Computer Communications (UK)**,” published by Butterworth-Heinemann, 1994-2009.
26. Co-Guest Editor, “**IEEE Communications Magazine, special issue on TCP Performance in Future Networking Environments**,” April 2001 issue.
27. Member of Editorial Board, “**Computer Networks and ISDN Systems**,” published by Elsevier Science Publishers, 1994-2000.
28. Co-Guest Editor, “**IEEE Communications Magazine, special issue on Satellite ATM Network Architecture**,” July 1999 issue.
29. Co-Guest Editor, “**IEEE Communications Magazine, special issue on Satellite ATM Network Architectures**,” March 1999 issue.
30. Co-Guest Editor, “**Computer Networks and ISDN System’s special issue on ATM Traffic Management**,” October 1998.
31. Member of the Editorial Board, “**IEEE/ACM Transactions on Networks**,” June 94-December 1994.
32. Guest Editor, “**Computer Communications (UK) Special SIGCOMM Section**,” April-May 1993.

Industry Consulting and Board Membership

1. Member of External Advisory Board, School of Computing and Information Sciences, Caritas Institute of Higher Education, Hong Kong, Feb 1, 2019 - Aug 31, 2021, <https://www.cihe.edu.hk/en/schools-and-offices/schools-and-departments/school-of-computing-and-information-sciences/external-advisers-external-examiners/index.html>
2. Fellow, Parallel Chain, a blockchain company, Hong Kong, Since 2020, <https://www.parallelchain.io/company/team>
3. Member of the Advisory Board, Astra-The Social Supercomputer, June 2018-2019.
4. Member of Technical Advisory Board, Blue Sage Communications, Inc., San Ramon, CA, June 2013-2018
5. Member of the Board, “Indo-US Collaboration for Engineering Education (IUCEE),” September 2013-2015
6. Member of the University Advisory Board, AKS University, Satna, MP, India, July 2012 - July 2015
7. Member of Technical Advisory Board, InBay Technology Solutions, Inc., San Jose, CA, January 2012-2015
8. Member of Technical Advisory Board, DOCOMO Innovations, Inc., Palo Alto, CA, (2011)
9. Member of Technical Advisory Board, Mercury, Mountain View, CA, (2004).
10. Member of Board of Technical Advisors, Teradient Networks, San Jose, CA, (2000-2004)
11. Member of Board of Technical Advisors, Corona Networks, Inc., Milpitas, CA (2000-2004)
12. Member of Board of Technical Advisors, Avatar Networks, Fremont, CA (2001-2002).
13. Member of Board of Technical Advisors, Chip Engines, Inc., Sunnyvale, CA (2000-2002)
14. Member of Board of Technical Advisors, EdgeNet Communications Corporation, Burlingame, CA (2000-2002)
15. Member of Board of Technical Advisors, Tivre Networks, San Jose, CA (2001-2002)
16. Member of Board of Technical Advisors, Irvine Networks, Irvine, CA, acquired by Simple Technologies. (2000-2001)
17. Member of Board of Technical Advisors, Beacon Telco, Boston, MA (2001-2002).
18. Member of Board of Technical Advisors, Rhonet Systems, Columbus, OH (2002-2003).
19. Member of Board of Research Advisors to iBEAM Broadcasting Corporation, Sunnyvale, CA (2000-2001).
20. Member of Board of Technical Advisors, Nexabit Networks, Westboro, MA, acquired by Lucent Corporation. (March 1997-1999)
21. Member of Board of Technical Advisors, Amber Networks, Fremont, CA, acquired by Nokia. (1999-2001)
22. Member of Board of Directors of MED-I-PRO Systems, LLC, Pomona, CA, February 1998-2000.

Professional Society Activities

1. Invited Participant, “**Defense Advanced Research Project Agency (DARPA)’s AI Forward Brainstorming Sessions to Reimagine the Future of AI for National Security,**” June 13-26, 2023.
2. Member of the Advisory Board, IEEE Technical Committee on Hyper-Intelligence (HITC), March 2021-Present, <https://ieee-hyperintelligence.org/member>
3. Vice-Chair of ACM SIGCOMM, 1991-95.
4. IEEE Communications Society Distinguished Lecturer, 1997, 1999-2006.
5. IEEE Computer Society Distinguished Visitor, 1993-1996.
6. ACM Lecturer 1991-1997.
7. Editor, “**WiMAX Systems Evaluation Methodology,**” WiMAX Forum, Applications Working Group, 2006-2009.
8. Chair, TIA/SCD/CIS Working Group, “**ATM Traffic Management,**” 1996-1998.
9. Editor, “**ATM Forum Performance Testing Specification,**” February 1996-February 1998.
10. Member, IEEE Computer Society Education Board
11. Member IEEE Computer Society Publication Board, 1995-1997.
12. Member of U.S. delegation (Computer Communications) to the People’s Republic of China, July 1987.
13. Member of National Science Foundation’s site visit team to evaluate NSF Engineering Research Center program at the Center for Telecommunications Research, Columbia University, November 13-14, 1991.
14. Member of NSF Global Environment for Networking Innovations (GENI) Design Review group, Arlington, VA, July 6-7, 2006.
15. Member of the 1997 National Science Foundation Research Infrastructure Program Final Evaluation Panel, Arlington, VA, April 21, 1997.

Technical Conference Organizations

1. Member of the Technical Committee, “**1st International Conference on Recent Advances in Artificial Intelligence & Smart Applications (RAAISA) 2023,**” 14-15 Dec 2023, Kolkata, India, <https://raaisa.uem.edu.in/committee>
2. Member of the Steering Committee, “**The Thirteenth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2021),**” October 03, 2021 to October 07, 2021 - Barcelona, Spain, <https://www.iaia.org/conferences2021/ComEMERGING21.html>
3. Member of the International Advisory Committee, “**2nd Global Conference on Artificial Intelligence and Applications (GCAIA 20201),**” Jaipur, India, Sep. 8-10, 2021, <https://gcaia.uem.edu.in/advisory-committee/>
4. Honorary Conference General Chair, “**The Fourth International Conference on Computing and Network Communications (CoCoNet'20),**” Chennai, India, October 14-17, 2020.

5. Member of the Steering Committee, "**The Twelfth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2020)**," July 26-30, 2020, Nice, France, <http://www.aria.org/conferences2020/ComEMERGING20.html>
6. Member of the Technical Program Committee, "**The 2nd International Conference on Blockchain Technology 2020 (ICBCT 2020)**," Hawaii, March 12-14, 2020, <http://www.icbct.org/com.html>
7. Member of the International Advisory Committee, "**6th International Conference on Electrical Energy Systems (ICEES 2020)**," Chennai, India, February 20-22, 2020, <https://easychair.org/cfp/ICEES2020>
8. Member of the Technical Program Committee, "**Fourth International Conference on Contemporary Computing and Informatics**," Singapore, December 12-14, 2019
9. Member of the Steering Committee, "**The Eleventh International Conference on Emerging Networks and Systems Intelligence (EMERGING 2019)**," September 22-26, 2019, Porto, Portugal, <https://www.aria.org/conferences2019/ComEMERGING19.html>
10. Member of the Steering Committee, "**The Fourteenth International Conference on Internet and Web Applications and Services (ICIW 2019)**," Nice, France, Jul 28-Aug 1, 2019, <http://www.aria.org/conferences2019/ComICIW19.html>
11. Member of the International Advisory Committee, "**International Conference on Frontiers in Smart System Technologies (FSST 2019)**," Chennai, India, Apr. 3-5, 2019, <http://www.veltech.edu.in/fsst/#committee>
12. Member of the Conference Technical Committee, "**2019 International Conference on Blockchain Technology (ICBCT 2019)**," Honolulu, Hawaii, March 15-18, 2019, <http://www.icbct.org/com.html>
13. Member of the International Advisory Committee, "**2nd International Conference on Advanced Computing and Software Engineering (ICACSE 2019)**," Sultanpur, India, Feb. 8-9, 2019
14. Member of the Technical Program Committee, "**Symposium on Emerging Computing and Networking**," Celebrating IISc CSA Department's Golden Jubilee, Bangalore, India, January 4, 2019, <https://events.csa.iisc.ac.in/icdcn2019/csa50symp.htm>
15. Member of the International Program Committee, "**International Conference on Computational Intelligence (ICCI 2018)**," Dec 10-11, 2018, Mesra, India, <https://www.bitmesra.ac.in/ICCI/page?page=icci&pid=77>
16. Member of the International Advisory Committee, "**3rd International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2018)**," November 22-24, 2018, Bhubaneswar, India, <http://www.icacie.com/2018/international-advisory-committee>
17. Member of the Steering Committee, "**The Tenth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2018)**," November 18 - 22, 2018 – Athens, Greece, <http://www.aria.org/conferences2018/ComEMERGING18.html>
18. Member of the Technical Program Committee, "**Third International Conference on Contemporary Computing and Informatics (IC3I)**," October 10-12, 2018, Delhi, India.

19. Member of the Steering Committee, "**The Thirteenth International Conference on Internet and Web Applications and Services (ICIW 2018)**," July 22-26, 2018, Barcelona, Spain, <http://www.iaria.org/conferences2018/ComICIW18.html>
20. Member of the Program Committee, "The 1st workshop on Energy Efficient Machine Learning and Cognitive Computing for Embedded Applications (EMC²)," Williamsburg, VA, Mar. 25, 2018, <https://sites.google.com/view/asplos-emc2/committees>
21. Member of the Advisory Board, "**4th International Conference on Recent Advances in Information Technology (RAIT-2018)**," 15-17 March 2018, Dhanbad, India.
22. Member of the advisory team, "**1st International Conference on Data, Engineering & Applications (IDEA 2017)**," Bhopal, India, December 28-29, 2017.
23. Member of the International Advisory Committee, "**2nd International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2017)**," November 23-25, 2017, Ajmer, India, <http://www.icacie.com/>
24. Member of the Steering Committee, "**The Ninth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2017)**," November 12 - 16, 2017 - Barcelona, Spain, <https://www.iaria.org/conferences2017/ComEMERGING17.html>
25. Member of the Program Committee, "**The 3rd International Workshop on Dependability Issues in SDN and NFV (DISN)**" workshop at IEEE Dependable Systems and Networks Conference, Denver, Colorado, June 26-29, 2017, <http://www.inf.ufpr.br/disn/>
26. Member of the Steering Committee and Technical Program Committee, "**The Twelfth International Conference on Internet and Web Applications and Services (ICIW 2017)**," June 25-29, 2017, Venice, Italy, <http://www.iaria.org/conferences2017/ComICIW17.html>
27. Member of the International Advisory Board, "**International Conference on Big Data Analytics and Computational Intelligence (ICBDACI)**," March 23-25, 2017, Chirala, India, <http://icbdaci-conference.org/2017/#iac>
28. Member of the Technical Program Committee, "**International Conference on Computing and Communication Technologies for Smart Nation (IC3TSN)**," February 16-18, 2017, Gurgaon, India
29. Member of the Advisory Committee, "**International Conference on Computing Analytics and Networking (ICCAN 2017)**," December 13-16, 2016, Bhubaneswar, India.
30. Member of the Technical Program Committee, "**Ubiquitous Sensing and Actuation (UbSA) via the Internet of Things**," workshop at IEEE WorldForum on Internet of Things, December 2-14, 2016, Reston, VA, <http://wfiot2016.ieee-wf-iot.org/program/ubiquitous-sensing-and-actuation-ubsa-internet-of-things/>
31. Member of the Advisory Board, "**International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2016)**," 21-23 December 2016, Bhubaneswar, India
32. Member of the Technical Program Committee, "**2nd International Conference on Contemporary Computing and Informatics (IC3I)**," December 14-17, 2017, Noida, India
33. Conference Chair, "**2016 International Conference on Communications, Image, and Signal Processing (CCISP) and 2016 International Conference on Virtualization Application and Technology (ICVAT)**," Dubai, November 19, 2016.

34. Member of the Advisory Committee, “**Smart Cities – Technological Challenges and Opportunities**,” Workshop in Conjunction with IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), 7 November 2016, Bangalore, India
35. Technical and Scientific Program Co-Chair, “**International Conference on Information Science and Communications Technologies (ICISCT 2016)**,” November 2-4, Tashkent, Uzbekistan, International Conference on Information Science and Communications Technologies ICISCT 2016
36. Member of the Advisory Chairs and Technical Program Committee, “**The Eighth International Conference on Emerging Network Intelligence (EMERGING 2016)**,” Venice, Italy, October 9-12, 2016, <http://www.aria.org/conferences2016/ComEMERGING16.html>
37. Tutorial Chair, “**ACM SIGCOMM 2016**,” Salvador, Brazil, August 22-26, 2016, <http://conferences.sigcomm.org/sigcomm/2016/organization.php>
38. Member of Technical Program Committee, “**The Eleventh International Conference on Systems and Networks Communications (ICSNC 2016)**,” Brussels, Belgium, August 21-25, 2016, <http://www.aria.org/conferences2016/ComICSNC16.html>
39. Member of the Steering Committee, “**2nd International Conference on Applied and Theoretical Computing and Communication Technology (iCATccT 2016)**,” Bangalore, India, July 21-23, 2016
40. Member of the Program Committee, “**Dependability Issues in SDN and NFV (DISN 2016)**” workshop at IEEE Dependable Systems and Networks Conference, Toulouse, France, June 28, 2016
41. Member of the Program Committee, “**The Eleventh International Conference on Internet and Web Applications and Services (ICIW 2016)**,” May 22 - 26, 2016, Valencia, Spain, <http://www.aria.org/conferences2016/ComICIW16.html>
42. Member of the Advisory Committee, “**12th International Workshop on Heterogeneous Wireless Networks**,” Crans-Montana, Switzerland, March 23-25, 2016, <http://voyager.ce.fit.ac.jp/conf/hwise/2016/index.html>
43. Member of the Program Committee, “**2016 International Conference on Internet of Things and Cloud Computing (ICC 2016)**,” Cambridge, UK, March 22-23, 2016.
44. Member of the Advisory Committee, “**3rd International Conference on Recent Advances in Information Technology 2016 (RAIT-2016)**,” Dhanbad, India, March 3-5, 2016
45. Member of the Advisory Committee, “**The Ninth International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2016)**,” February 21-25, 2016, Lisbon, Portugal, <http://www.aria.org/conferences2016/ComCTRQ16.html>
46. Member of the Technical Program Committee, “**The Fifteenth International Conference on Networks (ICN 2016)**,” February 21-25, 2016 - Lisbon, Portugal, <http://www.aria.org/conferences2016/ComICN16.html>
47. Member of the Review Group, “**3rd International Conference on Transformation in Engineering Education (ICTIEE 2016)**,” Pune, India, January 8-10, 2016
48. Member of the Advisory Committee, “**Indo-US International Workshop on Large Scale Complex Network Analysis**,” Kolkata, December 19-20, 2015

49. Member of the International Advisory Committee, “**International Conference on Computational Intelligence (ICCI 2015)**,” BIT Mesra, Ranchi, December 10-11, 2015, <https://www.bitmesra.ac.in/ICCI/page?page=ICCI&pid=77>
50. Member of the Advisory Committee, “**International Conference on Computational Intelligence in Data Mining (ICCIDM 2015)**,” Bhubaneswar, India, December 5-6, 2015
51. Member of Technical Program Committee, “**The Tenth International Conference on Systems and Networks Communications (ICSNC 2015)**,” Barcelona, Spain, November 15-20, 2015, <http://www.iaia.org/conferences2015/ComICSNC15.html>
52. Member of the Steering Committee, “**International Conference on Applied and Theoretical Computing and Communication Technology (iCATccT 2015)**,” Davangere, India, October 29-31, 2015
53. Member of Technical Program Committee, “**International Conference on Green Computing and Internet of Things (ICGCIoT)**,” Delhi, India, October 8-10, 2015, <http://gciot-conference.org/2015/tpc.html>
54. Member of the Advisory Board, “**International Conference on Signal, Networks, Computing, and Systems (ICSNCS-2015)**,” New Delhi, India, September 9-11, 2015
55. Member of the Technical Program Committee, “**12th International Conference on Wireless and Optical Communications Networks (WOCN 2015)**,” Bangalore, India, September 9-11, 2015.
56. Member of the Organizing Committee, “**Global Cloud Computing Conference**,” Philadelphia, PA, August 10-12, 2015.
57. Member of the Advisory Chairs and Technical Program Committee, “**The Seventh International Conference on Emerging Network Intelligence (EMERGING 2015)**,” Nice, France, July 19-24, 2015, <http://www.iaia.org/conferences2015/ComEMERGING15.html>
58. Member of the Advisory Board, “**3rd International Conference on Advanced Computing, Networking, and Informatics (ICACNI-2015)**,” Orissa, India, 23-25 June 2015.
59. Member of the Program Committee, “**The Tenth International Conference on Internet and Web Applications and Services (ICIW 2015)**,” June 21 - 26, 2015, Brussels, Belgium, <http://www.iaia.org/conferences2015/ComICIW15.html>
60. Member of the Advisory Committee, “**The Sixth International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2015)**,” April 19 - 24, 2015, Barcelona, Spain, <http://www.iaia.org/conferences2015/ComCTRQ15.html>
61. Member of the Technical Program Committee, “**The Fourteenth International Conference on Networks (ICN 2015)**,” Barcelona, Spain, April 19-24, 2015, <http://www.iaia.org/conferences2015/ComICN15.html>
62. Advisory Chair, “**11th International Workshop on Heterogeneous Wireless Networks (HWISE 2015)**,” Gwangju, Korea, March 24-27, 2015, <http://voyager.ce.fit.ac.jp/conf/hwise/2015/committee.html>
63. Member of the International Advisory Board, “**2nd International Conference on Electronics and Computing Technologies (ICONECT15)**,” Thane, India, 12-13 March 2015

64. Member of the Advisory Committee, "**1st International Conference on Recent Developments in Control, Automation and Power Engineering (RDCAPE 2015)**," Noida, India, March 12-13, 2015
65. Member of the Review Group, "**2nd International Conference on Transformation in Engineering Education (ICTIEE 2015)**," Bangalore, India, January 5-8, 2015
66. Member of the Technical Program Committee, "**IEEE International Conference on Contemporary Computing and Informatics**," Mysore, India, 27-29 November 2014.
67. Member of Technical Program Committee, "**The Ninth International Conference on Systems and Networks Communications (ICSNC 2014)**," Nice, France, October 12 - 16, 2014, <http://www.iaria.org/conferences2014/ComICSNC14.html>
68. Member of the Program Committee, "**11th International Conference on Wireless and Optical Communications Networks (WOCN 2014)**," Vijayawada, India, September 11-13, 2014.
69. Member of the Program Committee, "**11th International Conference on Wireless Information Networks and Systems (WINSYS 2014)**," Vienna, Austria, August 28-30, 2014.
70. Member of the Technical Committee, "**Science and Information Conference 2014 (SAI 2014)**," London, UK, August 27-29, 2014.
71. Member of the Advisory Committee and Technical Program Committee, "**The Sixth International Conference on Emerging Network Intelligence (EMERGING 2014)**," Rome, Italy, August 24 - 28, 2014, <http://www.iaria.org/conferences2014/ComEMERGING14.html>
72. Member of Technical Program Committee, "**First International Conference on Networks & Soft Computing (ICNSC 2014)**," Guntur, AP, India, August 19-20, 2014
73. Member of the Program Committee, "**The Ninth International Conference on Internet and Web Applications and Services (ICIW 2014)**," Paris, France, July 20 - 24, 2014
74. Member of the Technical Program Committee, "**2014 International Conference on Computer, Information, and Telecommunication Systems (CITS 2014)**," Jeju Island, South Korea, July 7-9, 2014, <http://atc.udg.edu/CITS2014/#tpc>
75. Member of the Advisory Board, "**2nd International Conference on Advanced Computing, Networking, and Informatics (ICACNI-2014)**," Kolkata, India, June 24-26, 2014.
76. Member of the Content Advisory Team, "**The Indian Entrepreneur Conference (TiECON 2014)**," Santa Clara, CA, May 15-16, 2014
77. Member of the Technical Program Committee, "**3rd IEEE International Workshop on Opportunistic Networking (WON 2014)**," Victoria, BC, May 13-16, 2014
78. Member of the Program Committee, "**The 28th IEEE International Conference on Advanced Information Networking and Applications (AINA-2014) - Internet Computing and Web Applications Track**," Victoria, Canada, May 13-16, 2014
79. Member of the Advisory Committee, "**International Conference on innovations in Computer, Communication, and Control technologies**," Kumaracoil, India, April 2014.

80. Member of the Advisory Committee, "**2nd International Conference on Recent Advances in Information Technology 2014 (RAIT-2014)**," Dhanbad, India, March 13-15, 2014
81. Member of International Advisory Committee, "**Innovation in Computer Technology and Communication (NCICTC'14)**," Coimbatore, India, Feb 28, 2014.
82. Member of the Program Committee, "**The Thirteenth International Conference on Networks (ICN 2014)**," Nice, France, February 23-27, 2014,
<http://www.iaria.org/conferences2014/ComICN14.html>
83. Member of the Advisory Committee, "**The Seventh International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2014)**," Nice, France, February 23-27, 2014, <http://www.iaria.org/conferences2014/ComCTRQ14.html>
84. Member of the Technical Program Committee, "**International Conference on Computing, Networking, and Communications (ICNC 2014)**," Honolulu, Hawaii, February 3-6, 2014,
<http://www.conf-icnc.org/2014/>
85. Member of the Program Committee (CS Track), "**International Conference on Mathematics and Computing 2013 (ICMC 2013)**," Haldia, India, December 26-29, 2013.
86. Member of the Program Committee, "**The 2nd Networking and Communications 2013 workshop**," Jeju Island, Korea, December 11-13, 2013.
87. Member of the Program Committee, "**The 2nd Mobile and Wireless 2013 workshop**," Jeju Island, Korea, December 11-13, 2013.
88. Member of the Program Committee, "**The Eighth International Conference on Systems and Networks Communications (ICSNC 2013)**," Venice, Italy, October 27-November 1, 2013,
<http://www.iaria.org/conferences2013/ComICSNC13.html>
89. Member of the Technical Committee, "**Science and Information Conference (SAI 2013)**," London, UK, October 7-9, 2013.
90. Member of the Advisory Committee and Technical Program Committee, "**The Fifth International Conference on Emerging Network Intelligence (EMERGING 2013)**," Porto, Portugal, September 29 - October 4, 2013,
<http://www.iaria.org/conferences2013/ComEMERGING13.html>
91. Member of the Program Committee, "**The 4th International Conference on Mobile, Ubiquitous, and Intelligent Computing (MUSIC-13)**," Gwangju, Korea, Sep 4-6, 2013
92. Member of the Program Committee, "**2nd International Conference on Advances in Computing, Communications and Informatics (ICACCI-2013)**," Mysore, India on August 22-25, 2013
93. Member of the Program Committee, "**10th International Conference on Wireless Information Networks and Systems (WINSYS 2013)**," Reykjavik, Iceland, July 29-31, 2013.
94. Member of Technical Program Committee, "**4th International Conference on Data Communication Networking (DCNET 2013)**," Reykjavik, Iceland, 29-31 July 2013,
<http://www.dcnnet.icete.org/ProgramCommittee.aspx?y=2013>

95. Member of the Program Committee, "**10th International Conference on Wireless and Optical Communications Networks (WOCN 2013)**," Bhopal, India, July 26-28, 2013, <http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=6589213>
96. Member of the Technical Program Committee, "**2013 International Conference on Computer, Information, and Telecommunication Systems (CITS 2013)**," Athens, Greece, May 2013, <http://atc.udg.edu/CITS2013/#tpc>
97. Advisory Co-Chair and Member of the Technical Program Committee, "**The Fourth International Conference on Models and Ontology-based Design of Protocols, Architectures, and Services (MOPAS 2013)**," April 21 - 26, 2013 - Venice, Italy, <http://www.iaria.org/conferences2013/ComMOPAS13.html>
98. Conference Program Co-Chair, "**MASAUM International Conference on Computer Science 2013(MIC-CS'13)**," Kuala Lumpur, Malaysia, March 29-31, 2013
99. Member of the Technical Program Committee, "**IEEE International Workshop on Broadband Wireless Internet and Next Generation Networks Access (BWINA 2013)**," In conjunction with AINA 2013, in Barcelona, Spain, March 25-28, 2013
100. Member of the Advisory Committee, "**International Conference on Computing, Communication, and Network (ICCCN 2013)**," Chennai Institute of Technology, Chennai, India, March 15-17th, 2013.
101. Member of the Technical Program Committee, "**International Conference on Computing, Networking, and Communications (ICNC 2013)**," San Diego, USA, Jan 28-31, 2013, <http://www.conf-icnc.org/2013/>
102. Member of the Technical Program Committee, "**The Twelfth International Conference on Networks (ICN 2013)**," Seville, Spain, Jan 27-Feb 1, 2013, <http://www.iaria.org/conferences2013/ComICN13.html>
103. Conference Co-Chair and Co-Founder, "**Broadband Access Communication Technologies VII**," SPIE Photonics West Conference 8282, San Francisco, CA, January 24-26, 2013, <http://spie.org/Publications/Proceedings/Volume/8645>
104. Conference Program Co-Chair, "**MASAUM International Conference on Information Technology 2013 (MIC-IT '13)**," Dubai, UAE, Jan 1-3, 2013
105. Member of the International Program Committee, "**First International Conference on Future Generation Communication Technologies (FGCT 2012)**," British Computer Society, London, UK, December 12-14, 2012.
106. Member of the Technical Program Committee, "**ACM CoNEXT 2012 Capacity Sharing Workshop (CSWS'12)**," co-located with CoNEXT'12, December 10, 2012, Nice, France, <http://conferences.sigcomm.org/co-next/2012/e proceedings/csws/organization.pdf>
107. Member of the Technical Program Committee, "**The Seventh International Conference on Systems and Networks Communications (ICSNC 2012)**," Lisbon, Portugal, Nov 18-23, 2012, <http://www.iaria.org/conferences2012/ICSNC12.html>
108. Member of the Technical Program Committee, "**MASAUM International Conference on Computer Science 2012 (MIC-CS'12)**," Kuala Lumpur, Malaysia, October 26-28, 2012.

109. Member of the Technical Program Committee, “**Web and Internet Technologies (WIT) track of Mosharaka International Conference on Communications, Computers, and Applications (MIC-CCA2012)**,” Istanbul, Turkey: 12-14 October 2012.
110. Member of the Advisory Committee and Technical Program Committee, “**The Fourth International Conference on Emerging Network Intelligence (EMERGING 2012)**,” Barcelona, Spain, September 23-28, 2012,
<http://www.iaia.org/conferences2012/ComEMERGING12.html>
111. Member of the Technical Program Committee, “**2012 Ninth International Conference on Wireless and Optical Communications Networks - (WOCN 2012)**,” Indore, India, September 20-22, 2012.
112. Member of the Technical Program Committee, “**2012 International Conference on Computer, Information and Telecommunication Systems (CITS 2012)**,” Amman, Jordan. May 13-16, 2012.
113. Advisory Chair and Member of the Technical Program Committee, “**The Third International Conference on Models and Ontology-based Design of Protocols, Architectures and Services (MOPAS 2012)**,” Chamonix / Mont Blanc, France April 29-May 4, 2012, <http://www.iaia.org/conferences2012/MOPAS12.html>
114. Member of the Advisory Committee, “**The Fifth International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2012)**,” Chamonix / Mont Blanc, France, April 29-May 4, 2012,
<http://www.iaia.org/conferences2012/ComCTRQ12.html>
115. Member of the Program Committee, “**Mosharaka International Conference on Communications and Signal Processing (MIC-CSP 2012)**,” Barcelona, Spain, 6-8 April 2012.
116. Advisory Chair, “**8th International Workshop on Heterogeneous Wireless Networks (HWISE 2012)**,” Fukuoka, Japan, March 26-29, 2012.
117. Member of the Advisory Board, “**1st International Conference on Recent Advances in Information Technologies (RAIT 2012)**,” Dhanbad, India, March 15-17, 2012
118. Conference Co-Chair and Co-Founder, “**Broadband Access Communication Technologies VI**,” SPIE Photonics West Conference 8282, San Francisco, CA, January 24-26, 2012,
<http://spie.org/Publications/Proceedings/Volume/8282>
119. Member of the Technical Program Committee, “**Energy in Communication, Information, and Cyber-physical Systems (E6)**,” COMSNETS Workshop, Bangalore, India, January 4, 2012
120. Member of the Program Committee, “**International Conference on IT Convergence and Security (ICITCS 2011)**,” Suwon, Korea, December 14-16, 2011
121. Member of the Program Committee, “**The Third International Conference on Emerging Network Intelligence (EMERGING 2011)**,” November 20-25, 2011, Lisbon, Portugal,
<http://www.iaia.org/conferences2011/ComEMERGING11.html>
122. Technical Program Co-Chair, “**Asian Himalayas International Conference on Internet (AH-ICI2011)**,” November 4-6, 2011, Kathmandu, Nepal.

123. Member of the Program Committee, "**The Fifteenth IEEE International EDOC Conference (EDOC 2011)**," Helsinki, Finland, 29th August-2nd September 2011.
124. Member of the Track Technical Program Committee, "Internet Services and Applications (ISA) track at **20th International Conference on Computer Communications and Networks (ICCCN 2011)**," Maui, Hawaii, August 1-4, 2011
125. Member of the Technical Program Committee, "**2011 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS 2011)**," The Hague, Netherlands, June 27-30, 2011, <http://atc.udg.edu/SPECTS2011/>
126. Member of the Technical Program Committee, "**2011 Eighth International Conference on Wireless and Optical Communications Networks (WOCN 2011)**," Paris, France, May 24-26, 2011
127. Advisory Co-Chair and Member of the Program Committee, "**The Fourth International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ 2011)**," Budapest, Hungary, April 17-22, 2011, <http://www.iaia.org/conferences2011/CTRQ11.html>
128. Co-Chair and Member of the Technical Program Committee, "**The Second International Conference on Models and Ontology-based Design of Protocols, Architectures, and Services (MOPAS 2011)**," April 17-22, 2011 – Budapest, Hungary, <http://www.iaia.org/conferences2011/ComMOPAS11.html>
129. Advisory Chair, "**7th International Workshop on Heterogeneous Wireless Networks (HWISE 2011)**," Biopolis, Singapore, March 22-25, 2011.
130. Member of the Technical Program Committee, "**25th International Conference on Advanced Information Networking and Applications (AINA 2011)**," Biopolis, Singapore, March 22-25, 2011
131. Conference Co-Chair and Cofounder, "**Broadband Access Communication Technologies V**," SPIE, San Francisco, CA, January 26-27, 2011
132. Member of the Technical Program Committee, "**Third International Workshop on the Network of the Future (FutureNet-III)**," In conjunction with IEEE Globecom 2010, Miami, FL, December 10, 2010, <http://exmgaity.sd.tmu.ac.jp/~aida/FutureNet3/Welcome.html>
133. Member of the Technical Program Committee, "**International Conference on Access Networks (AccessNets)**," Budapest, Hungary, November 3-5, 2010
134. Member of the International Program Committee, "**International Conference on Models of Information and Communication Systems (MICS'10)**," Rabat – Morocco, November 2-4, 2010.
135. Member of Program Committee, "**The Second International Conference on Emerging Network Intelligence (EMERGING 2010)**," October 25-30, 2010-Florence, Italy, <http://www.iaia.org/conferences2010/EMERGING10.html>
136. Member of the Program Committee, "**14th IEEE International EDOC Conference (EDOC 2010)**," 25-29 October 2010, Vitoria, ES, Brazil.

137. Member of the Technical Program Committee, "**4th International Workshop on Broadband Wireless Internet and Next Generation Networks Access (BWINA 2010), in conjunction with WiMob 2010**," Niagara Falls, Ontario, Canada, October 11-13, 2010
138. Member of the Technical Program Committee, "**Seventh IEEE and IFIP International Conference on Wireless and Optical Communications Networks (WOCN2010)**," Colombo, Sri Lanka, September 6-8, 2010.
139. Member of the Track Technical Program Committee, "Internet Services, Architectures and Protocols (ISAP) track at **19th International Conference on Computer Communications and Networks (ICCCN 2010)**," Zurich, Switzerland, August 2-10, 2010
140. Member of the Program Committee, "**International Conference on Advanced Infocomm Technology 2010 (ICAIT 2010)**," 20-22 July 2010, Hainan, China.
141. Member of the Program Committee, "**First International Workshop on Optimization and Network Planning (ONPlan 2010)**," In conjunction with WCMC2010, Caen, France, 28 June-2 July 2010.
142. Member of the Technical Program Committee, "The First International Conference on Models and Ontology-based Design of Protocols, Architectures, and Services (MOPAS 2010)," June 13-19, 2010-Athens, Greece,
<http://www.iaria.org/conferences2010/ComMOPAS10.html>
143. Member of the Program Committee, "**2010 ACS/IEEE International Conference on Computer Systems and Applications**," Hammamet, Tunisia, May 16-19th, 2010
144. Member of International Advisory Board, "**3rd International Conference on Computer and Communications Engineering (ICCCE 2010)**," May 11-13, 2010, Kuala Lumpur, Malaysia.
145. Member of The Program Committee, "**International Conference on Information Science and Applications (ICISA 2010)**," 21-23 April 2010, Seoul, Korea
146. Advisory Chair, "**6th International Workshop on Heterogeneous Wireless Networks (HWISE 2010)**," Perth, Australia, April 20-23, 2010.
147. Member of the Program Committee, "**IEEE 24th International Conference on Advanced Information Networking and Applications (AINA 2010)**," Perth, Australia, 20-23 April 2010
148. Member of the Advisory Committee, "**IEEE Conference on Control, Communication and Computing (ICCC 2010)**," Trivandrum, India, March 18-20, 2010.
149. Conference Co-Chair, "**Broadband Access Communication Technologies IV**," SPIE, Volume 7620, San Francisco, CA, January 27, 2010
150. Member of the International Advisory Committee, "**2009 IEEE 9th Malaysia International Conference on Communications (MICC 2009)**," 14-17 December 2009, Kuala Lumpur, Malaysia
151. Member of the Program Committee, "**17th International Conference on Advanced Computing and Communications (ADCOM 2009)**," Bangalore, India, December 14-17, 2009.

152. Technical Program Co-Chair, “**First Asian Himalayas International Conference on Internet (AH-ICI) 2009**,” November 3-5, 2009, Kathmandu, Nepal.
153. Member of the Program Committee, “**7th International Workshop on Design of Reliable Communications Networks (DRCN 2009)**,” October 25-28, 2009, Washington, DC.
154. Member of Technical Program Committee, “**First International Conference on Future Information Networks (ICFIN 2009)**,” Beijing, China, Oct. 14-17, 2009
155. Member of the Program Committee, “**3rd International Workshop on Broadband Wireless Internet Access (BWIA 2009)**,” in conjunction with WiMob 2009, Marrakech, Morocco, October 12-14, 2009.
156. Member of Program Committee, “**The First International Conference on Emerging Network Intelligence (EMERGING 2009)**,” October 11-16, 2009- Sliema, Malta, <http://www.iaria.org/conferences2009/ComEMERGING09.html>
157. Member of the Technical Program Committee, “**First International Conference on Ad Hoc Networks**,” September 23-25, 2009, Niagara Falls, Ontario, Canada
158. Member of the Technical Program Committee, “**21st International Teletraffic Congress (ITC 21) Traffic and Performance Issues in Networks of the Future**,” Paris, France, September 15-17, 2009
159. Member of the Program Committee, “**Thirteenth IEEE International EDOC Conference (EDOC 2009)**,” Auckland, New Zealand, 31 August-4 September 2009
160. Member of the Track Technical Program Committee, “Network Architecture and Protocol (NAP) track at **18th International Conference on Computer Communications and Networks (ICCCN 2009)**,” San Francisco, CA USA, August 2–6, 2009
161. Member of the Technical Program Committee, “**International Conference On Advanced Infocomm Technology (ICAIT) 2009**,” Xi'an, China, 7-9 July 2009
162. Member of the Technical Program Committee, “**First International Workshop on Planning and Optimization of Wireless Communication Networks (PlanNet2009)**,” Leipzig, Germany, 2009, June 21-24, 2009.
163. Member of the Program Committee, “**International Conference on Wireless Information Networks and Systems (WINSYS 2009)**,” Milan, Italy, July 7-10, 2009.
164. Member of the Program Committee, “**4th Workshop on Hot Topics on Autonomic Computing, (HotAC IV)**,” June 15, 2009, Barcelona, Spain
165. Advisory Chair, “**5th International Workshop on Heterogeneous Wireless Networks (HWISE 2009)**,” Bradford, UK, May 26-29, 2009.
166. Member of the Technical Program Committee, “**7th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-2009)**,” Rabat, Morocco, May 2009
167. Member of the Technical Program Committee, “**Sixth IEEE and IFIP International Conference on Wireless and Optical Communications Networks (WOCN2009)**,” Cairo, Egypt, April 28-30, 2009
168. Member of the Technical Program Committee, “**NetEval 2009 – The First Workshop on Performance Evaluation of Next-Generation Networks**,” April 26, 2009, Boston, MA, USA

169. Conference Co-Chair, "**Broadband Access Communication Technologies III**," SPIE, Volume 7234, San Jose, CA, January 28-29, 2009
170. Member of the Technical Program Committee, "**Workshop on Wireless IP Communication (WIPcom)**," Bangalore, India, Jan 5-10, 2009
171. Member of the Technical Program Committee, "**2008 International Conference on Computer Intelligence and Security (CIS 2008)**," Suzhou SIP, China, December 13-17, 2008.
172. Member of the Technical Program Committee, "**2008 Third International Conference on Access Networks**," Las Vegas, Nevada, October 15-17, 2008
173. Member of the Technical Program Committee, "**2nd International Workshop on Broadband Wireless Internet Access (BWIA 2008)**," Avignon, France, October 12, 2008.
174. Member of the Technical Program Committee, "**Fourth IEEE UZ Regional Chapter International Conference in Central Asia on Internet The Next Generation of Mobile, Wireless and Optical Communications Networks Information and Communications Technologies with Application to E- and M-Commerce**," Tashkent University of Information Technologies TUIT, Uzbekistan, September 23-25, 2008.
175. Member of the Technical Program Committee, "**The 12th IEEE International EDOC Conference (EDOC 2008)**," Munchen, Germany, 15-19 September 2008
176. Member of the International Program Committee, "**The Seventh IASTED International Conference on Communication Systems and Networks (CSN 2008)**," Palma de Mallorca, Spain, September 1-3, 2008, <https://www.iasted.org/conferences/ipc-607.html>
177. Member of the Technical Program Committee, "**International Conference On Advanced Infocomm Technology (ICAIT) 2008**," Shenzhen, China, July 28-29, 2008
178. Conference General Chair and Co-Founder, "**International Conference on Convergence and Broadband Networking (ICCBN)**," Bangalore, India, July 18-22, 2008
179. Member of the International Advisory Committee, "**2nd International Conference on Computer and Communications Engineering (ICCCE'08)**" Kuala Lumpur, Malaysia, May 13-15, 2008.
180. Member of the Technical Program Committee, "**IEEE INFOCOM 2008 Conference on Computer Communications**," Phoenix, AZ, April 13-19, 2008.
181. Member of the International Program Committee, "**The Fifth IASTED Asian Conference on Communication Systems and Networks, (AsiaCSN 2008)**," Langkawi, Malaysia, April 2-4, 2008.
182. Advisory Chair, "**4th International Workshop on Heterogeneous Wireless Networks (HWISE 2008)**," Okinawa, Japan, March 25-28, 2008.
183. Member of the International Advisory Committee, "**The IEEE 22nd International Conference on Advanced Information Networking and Applications (AINA 2008)**," GinoWan, Okinawa, Japan, March 25-28, 2008
184. Conference Co-Chair, "**Broadband Access Communication Technologies Conference**," Part of SPIE Photonics West Conference and Exhibition, San Jose, CA, January 22-23, 2008.

185. Member of the Program Committee, "**The Second International Workshop on Broadband and Wireless Computing, Communication and Applications (BWCCA-2007)**," Jakarta, Indonesia, December 3-5, 2007,
<http://www.fit.ac.jp/%7Ebarolli/Conferences/2007/index.html>
186. Reviewer, "**IEEE/NIH BISTI 2007 Life Science Systems and Applications Workshop (LISSA 2007)**," Bethesda, MD, November 8-9, 2007.
187. Member of the Technical Program Committee, "**15th International IEEE Conference on Networking Protocols (ICNP 2007)**," Beijing, China, October 16-19, 2007.
188. Conference Co-Chair, "**Broadband Access Communication Technologies (IT404)**," Part of SPIE's International Symposium on Optics East 2007, Boston, MA, September 9-12, 2007.
189. Member of Program Committee, "**Optical Transmission Systems and Equipment for Networking VI (IT402)**," Part of SPIE's International Symposium on Optics East 2007, Boston, MA, September 9-12, 2007.
190. Member of International Program Committee, "**The Sixth IASTED International Conference on Communication Systems and Networks (CSN 2007)**," Palma de Mallorca, Spain, August 29 – 31, 2007.
191. Member of the program committee, "**2nd International Conference on Information Science and Security (ISS 2007)**," Seoul, Korea, May 23-26, 2007.
192. Advisory Chair, "**3rd International Workshop on Heterogeneous Wireless Networks (HWISE 2007)**," Niagara Falls, Canada, May 21-23, 2007.
193. Member of Program Committee, "**First International Workshop on Broadband and Wireless Computing, Communication and Applications (BWCCA-2006)**," Yogyakarta, Indonesia, 4-6 December 2006
194. Member of Program Committee, "**2nd International Conference on Trends in Enterprise Application Architecture (TEAA 2006)**," Berlin, Germany, November 29-December 1, 2006, <https://www.cs.auckland.ac.nz/research/groups/foa/TEAAWEB/index-Dateien/page0011.html>
195. Member of the Technical Program Committee, "**IEEE Globecom 2006 Symposium on World Class Solutions-Networking the Globe (WCS)**," San Francisco, CA, November 27-December 1, 2006.
196. Member of Program Committee, "**8th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2006)**," Dallas, Texas, November 17-19, 2006
197. Member of Technical Program Committee, "**14th International IEEE Conference on Networking Protocols (ICNP 2006)**," Santa Barbara, CA, November 12-15, 2006.
198. Member of the Technical Program Committee, "**IEEE International Conference on e-Business Engineering**," October 24-26, Shanghai, China, October 24-26, 2006.
199. Conference Co-Chair, "**Broadband Access Communication Technologies (IT404)**," Part of SPIE's International Symposium on Optics East 2006, Boston, MA, October 1-4, 2006.
200. Member of the Program Committee, "**Optical Transmission Systems and Equipment for Networking V**," Conference 6388, Part of SPIE's International Symposium on Optics East 2006, Boston, MA October 1-4, 2006.

201. Member of the Technical Program Committee, "**14th IEEE International Conference on Networks (ICON 2006)**," Singapore, September 13-15, 2006.
202. Member of International Program Committee, "**The Fifth IASTED International Conference on Communication Systems and Networks (CSN 2006)**," Palma de Mallorca, Spain, August 28-30, 2006.
203. Member of Technical Program Committee, "**International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS'06)**," Calgary, Canada, July 31-August 2, 2006.
204. Member of Technical Program Committee, "**International Conference on Telecommunications and Multimedia (TEMU 2006)**," Heraklion, Crete, Greece, July 5-7, 2006
205. Member of International Advisory Board, "**International Conference on Computer & Communication Engineering (ICCCE'06)**," Kuala Lumpur, Malaysia, May 9-11, 2006
206. Advisory Chair, "**Second IEEE International Workshop on Heterogeneous Wireless Sensor Networks (HWISE 2006)**," TU, Vienna, Austria, on April 18-20, 2006
207. Member of the Technical Program Committee, "**First International Conference on Software in Communications (SoftComms 2006)**," New Delhi, India, January 8-12, 2006
208. Member of the Technical Program Committee, "**Wireless Communications Symposium**," IEEE Globecom 2005, St. Louis, MO, November 28-December 2, 2005.
209. Member of the International Advisory Council, "**Telecom India 2005**," Mumbai, India, November 9-11, 2005.
210. Member of the Program Committee and Session Chair, "**Optical Transmission Systems and Equipment for WDM Networking IV (IT102)**," SPIE Conference #6012, Boston, October 24-26, 2005.
211. Member of the Program Committee and Session Chair, "**Broadband Access Communications Technology (IT105)**," SPIE Conference, Boston, October 24-26, 2005.
212. Member of the Technical Program Committee, "**The 5th International Workshop on Design of Reliable Communication Networks (DRCN)**," Island of Ischia (Naples), Italy, October 16-19, 2005.
213. Member of the Scientific Program Committee, "**The First IFIP International Conference in Central Asia on Internet The Next Generation of Mobile, Wireless and Optical Communications Networks Information and Communications Technologies and Application to E- and M-Commerce (ICI 2005)**," Bishkek, Kyrgyz Republic, September 26-28, 2005, <http://www.ici2005.org/committee.html>
214. Member of the International Program Committee, "**The Fourth IASTED International Conference on Communication Systems and Networks (CSN 2005)**," Benidorm, Spain, September 12-14, 2005.
215. Member of the Advisory and Technical Committee, "**The First International Workshop on Heterogeneous Wireless Sensor Networks (HWISE 2005)**," July 20-22, 2005

216. Member of the Technical Program Committee, “**International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS05)**,” Philadelphia, PA, July 2005.
217. Member of Technical Program Committee, “**IEEE Symposium on Optical Networking, ICC2005**,” Seoul, Korea, May 16-20, 2005.
218. Member of the Technical Program Committee, “**Second IFIP International Conference on Wireless and Optical Communications Networks (WOCN 2005)**,” Dubai, UAE, March 6-9, 2005.
219. Member of the Technical Program Committee, “**IEEE Wireless Communications and Networking Conference (WCNC 2005)**,” New Orleans, LA, March 13-17, 2005, <http://wcnc2005.ieee-wcnc.org/committees.htm>
220. Member of the Technical Program Committee, “**International Conference on Networks (ICON 2004)**,” Singapore, November 16-19, 2004.
221. Member of the Technical Program Committee, “**29th Annual IEEE Conference on Local Computer Networks (LCN 2004)**,” Tampa, Florida, November 16-18, 2004.
222. Member of the Technical Program Committee, “**Optical Transmission Systems and Equipment for WDM Networking III (IT202)**,” Philadelphia, PA, October 25-28, 2004.
223. Conference General Chair and Co-Founder, “**First International Conference on Broadband Networking (Broadnets 2004)**,” San Jose, CA, October 25-29, 2004, <http://broadnets.org/2004/organizingcommittee.html>
224. Member of the Technical Program Committee, “**IEEE Region 10 Infocom Colloquium on Broadband Access –Technology and Market**,” Singapore, October 2004.
225. Member of the Technical Program Committee, “**First IEEE and IFIP International Conference on Wireless and Optical Communications Networks WOCN 2004**,” June 7-10, 2004, Sultan Qaboos University, Muscat, Oman
226. Member of the Technical Program Committee, “**10th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS04)**,” Toronto, Canada, May 25-28, 2004.
227. Member of the Technical Program Committee, “**International Conference on Communication and Broadband Networking (ICBN’04)**,” Kobe, Japan, April 4-7, 2004.
228. Member of the Technical Program Committee, “**ICC 2004 Symposium on Optical Networking**,” Paris, France, June 20-24, 2004.
229. Member of the Technical Program Committee, “**Second IFIP-TC6 International Conference on Optical Communications and Networks (ICO CN 2003)**,” Bangalore, India, October 20-22, 2003.
230. Member of the International Scientific Committee, “**4th International Workshop on Design of Reliable Communication Networks (DRCN 2003)**,” The Banff Centre, Banff, Canada, October 19-22, 2003
231. Member of the Technical Program Committee, “**11th IEEE International Conference on Networks (ICON 2003)**,” Sydney, Australia, 28th September to 1st October 2003.

232. Member of the Technical Program Committee, "**Optical Transmission Systems and Equipment for WDM Networking II**," part of SPIE's ITCOM 2003, Conference 5247, September 8-11, 2003, Orlando, FL.
233. Co-Chair, Industry Watch Program, "**International Conference on Broadband Networking**," Bangalore, India, May 7, 2003
234. Member of the Technical Program Committee, "**Symposium on Optical Networking in IEEE International Conference on Communications (ICC03)**," Anchorage, Alaska, May 11-15, 2003
235. Member of the Technical Program Committee, "**First International Conference on Optical Communications and Networks (ICO CN 2002)**," Singapore, August 27-30, 2002.
236. Member of the Technical Program Committee, "**International Conference on Networking (ICON02)**," Singapore, August 27-August 30, 2002.
237. Member of the Technical Program Committee, "**Optical Transmission Systems and Equipment for WDM Networking**," part of SPIE's ITCOM 2002, July 29-August 1, 2002, Boston, MA.
238. Member of the Technical Program Committee, "**IEEE Symposium on Optical Networking in IEEE International Conference on Communications (ICC02)**," New York City, April 28-May 2, 2002
239. Co-Chair, Industry Program, "**Optical Networking and Communications Conference**," Opticomm 2001, August 19-24, 2001, Denver, CO.
240. Member of the International Program Committee, "**International Conference on Emerging Telecommunications Technologies and Applications, ICETA 2001-Steps Towards the Information Society of the Future**," Koice, Slovak Republic, October 17-19, 2001.
241. Member of Program Committee, "**2nd International Workshop on Quality of future Internet Services organized by COST263**," 24-26 September 2001 Coimbra, Portugal.
242. Member of Program Committee, "**Global Internet 2000 Symposium at Globecom**," San Francisco, CA, November 27-December 1, 2000
243. Member of Program Committee, "**Ninth International Conference on Computer Communications and Networks (ICCCN2000)**," October 16-18, 2000, Las Vegas, Nevada.
244. Member of the International Program Committee, "**2nd International ATM Technology Users Symposium (ATMTU 2000)**," September 13-15, 2000, Kosice, Slovakia,
245. Member of Program Committee, "**International Conference on Communications (ICON2000)**," Singapore, September 5-8, 2000.
246. Member of Program Committee, "**Workshop on IP-oriented Operations & Management (IPOM2000)**," Cracow, Poland, September 4-6, 2000.
247. Member of Technical Program Committee, "**International Conference on Telecommunications (ICT-2000)**," Acapulco, Mexico, May 22-25, 2000.
248. Member of Program Committee, "**Mobile and Wireless Communication Networks (MWCN'2000)**," Paris, France, May 14-19, 2000.

249. Member of Program Committee, "**IEEE International Computer Performance and Dependability Symposium (IPDS2000)**," March 27-28, 2000, Chicago, IL.
250. Member of International Program Committee, "**International Symposium on Telemedicine and Tele-education in Practice (ISTEP2000)**," Elfa, Slovak Republic, March 24-28, 2000.
251. Session Organizer, "**IEEE Aerospace Conference**," Big Sky, MT, March 18-25, 2000.
252. Member of Program Committee, "**Eighth International Conference on Computer Communications (ICCCN'99)**," Boston, MA, October 11-13, 1999.
253. Member of the Program Committee, "**IEEE International Conference on Networking (ICON'99)**," September 28-October 1, 1999, Brisbane, Queensland, Australia.
254. Member of Scientific Committee, "**Seventh IFIP Workshop on Performance Modeling and Evaluation of ATM Networks (IFIP ATM'99)**," June 28-30, 1999, Antwerp, Belgium.
255. Member of the Program Committee, "**The 3rd IFIP WG 6.2 workshop on Traffic Management and Synthesis of ATM Networks (WATM'99)**," London, April 26-28, 1999
256. Conference Co-Chair, "**Quality of Service Issues Related to the Internet (VV05)**," part of SPIE Symposium on voice, video, and data communications, Boston, MA, November 1-6, 1998.
257. Member of Program Committee, "**Third International Workshop on Satellite-based information services (WOSBIS'98)**," Dallas, TX, October 1998.
258. Member of Program Committee, "**10th International Conference on Modeling Techniques and Tools for Computer Performance Evaluation (Performance Tools'98)**," Palma de Mallorca, Spain, September 14-18, 1998.
259. Member of the Program Committee, "**1998 International Computer Performance and Dependability Symposium (IPDS'98)**," Durham, NC, September 7-9, 1998
260. Member of the Technical Program Committee (TPC), "**IEEE INFOCOM'98 Conference on Computer Communications**," March 29-April 2, 1998, San Francisco, CA.
261. Member of Program Committee, "**IEEE Global Internet'97**," Globecom'97 Mini-conference, Phoenix, AZ, November 1997
262. Session Organizer and Chair, "**Technology Wars for High-Speed Networking: DOD Applications**," at 1997 IEEE Military Communications Conference (MILCOM'97), Monterey, CA, November 2-5, 1997.
263. Member of Program Committee, "**2nd International Workshop on Satellite-based information services (WOSBIS'97)**," Budapest, Hungary, October 1, 1997.
264. Member of Program Committee, "**ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems (SIGMETRICS'97)**," Seattle, WA, June 15-18, 1997.
265. Member of Program Committee, "**9th International Conference on Modeling Techniques and Tools for Computer Performance Evaluation (Performance Tools'97)**," Saint-Malo, France, June 1997
266. Member of Technical Program Committee, "**15th International Teletraffic Congress**," Washington, DC, June 23-27, 1997.
267. Member of Program Committee, "**IEEE Infocom'97**," Kobe, Japan, April 7-11, 1997.

268. Member of Program Committee, "**IEEE Global Internet'96**," Globecom'96 Miniconference, London, November 20-21, 1996.
269. Member of Program Committee, "**Transport Protocols for Broadband Networks**," Globecom'96 Miniconference, London, November 20, 1996.
270. Member of Steering Committee, "**ACM/IEEE Mobile Computing and Networking Conference (MOBICOM'96)**," Rye, NY, November 11-12, 1996.
271. Member of Program Committee, "**1996 International Conference on Network Protocols**," Columbus, Ohio, October 29-November 1, 1996.
272. Panel member, "**International Conference on Networking Protocols (ICNP'96)**," Columbus, OH, October 29-November 1, 1996.
273. Session Organizer and Session Chair, "**Expert Panel on High-Speed Networking in the Enterprise: Which Way?**" 21st Conference on Local Computer Networks, October 13-16, 1996.
274. Member of Program Committee, "**International Conference on Performance Theory, Measurement and Evaluation of Computer and Communication Systems (Performance'96)**," Lausanne, Switzerland, October 7-11, 1996.
275. Session Organizer and Session Chair, "**Can ATM Networks Scale?**" NetWorld+Interop'96 Engineers' Conference, Atlanta, GA, September 18, 1996.
276. Member of Program Committee, "**IEEE International Computer Performance and Dependability Symposium (IPDS'96)**," Urbana-Champaign, IL, September 4-6, 1996.
277. Invited Speaker, "**IEEE International Computer Performance and Dependability Symposium IPDS'96**," Urbana-Champaign, IL, September 4-6, 1996.
278. Member of Program Committee, "**ACM SIGCOMM Conference on Applications, Technologies, Architectures, and Protocols for Computer Communications (SIGCOMM'96)**," San Francisco, CA, August 26-28, 1996.
279. Session Organizer and Session Chair, "**Resource, Traffic, and Congestion Management over Heterogeneous Networks**," NetWorld+Interop'96 Engineers' Conference, Las Vegas, April 2-5, 1996.
280. Program committee member, "**First Workshop on ATM Traffic Management (WATM'95)**," France, December 4-8, 1995.
281. Member of Steering Committee, "**The First International Conference on Mobile Computing and Networking 1995 (MobiCom'95)**," Berkeley, CA, November 13-15, 1995.
282. Program committee member, "**1995 International Conference on Network Protocols (ICNP'95)**," Tokyo, Japan, November 7-10, 1995.
283. Program committee member, "**Performance Tools'95**," Heidelberg (Germany), September 18-22, 1995.
284. Program committee member, "**Hot Interconnects III**," San Francisco, Ca, Aug 10-12, 1995.
285. Program committee member, "**Workshop on High-Speed Network Computing (HiNet'95)**" Part of the 1995 International Parallel Processing Symposium (APPS '95), Santa Barbara, CA, April 25-28, 1995.

286. Program committee member, “**Seventh International Conference on Modeling Techniques and Tools for Computer Performance Evaluation**,” Vienna, Austria, May 3-May 6, 1994.
287. Program committee member, “Conference on Measurement and Modeling of Computer Systems (**SIGMETRICS’94**),” Nashville, TN, May 16-20, 1994.
288. Program committee member, “**Conference on Communications Architectures, Protocols and Applications (SIGCOMM’94)**,” London, UK, August 31-September 2, 1994.
289. Program committee member, “**International Teletraffic Congress Sponsored Seminar on Teletraffic Analysis Methods for Current and Future Telecomm Networks**,” November 15-19, 1993.
290. Program Committee Member, “**Conference on Measurement and Modeling of Computer Systems (SIGMETRICS’93)**,” Santa Clara, CA, May 10-14, 1993.
291. Program Committee Member and Session Chair, “**Conference on Communications Architectures, Protocols and Applications (SIGCOMM’93)**,” San Francisco, CA, September 13-17, 1993.
292. Program Committee Member and Session Chair, “**International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS’92)**,” Newport, Rhode Island, June 1-5, 1992.
293. Tutorial Chair, “**Conference on Communications Architectures & Protocols (SIGCOMM’92)**,” Baltimore, MD, August 17-22, 1992.
294. Program Committee Member and Session Chair, “**ACM Symposium on Communications Architectures & Protocols (SIGCOMM’90)**,” Philadelphia, PA, September 24-27, 1990.
295. Program Committee Member, “**ACM Symposium on Communications Architectures & Protocols (SIGCOMM’89)**,” Austin, TX, September 19-22, 1989.
296. Program committee member, “**IEEE International Conference on Computer Design (ICCD’89)**,” Cambridge, MA, October 2-4, 1989.
297. Panel member, “**InterOp’88 conference**,” Santa Clara, CA, September 26-30, 1988.
298. Panel Session Chair, “**10th Data Communications Symposium Building the Global Network**,” Napa Valley, CA, October 5-8, 1987.

Professional Society Memberships

1. Life Fellow of IEEE (Institution of Electrical and Electronics Engineers)
2. Fellow of ACM (Automated Computing Machinery)
3. Fellow of AAAS (American Association for Advancement of Science)
4. Fellow of the Academy of Science, St. Louis
5. Member of the Association for Unmanned Vehicle Systems International (2021-22)
6. Member of Sigma Xi – The Scientific Research Honor Society (2021-22)

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11. Raj Jain, "**FDDI Handbook: High-Speed Networking with Fiber and Other Media**," Addison-Wesley, Reading, MA, April 1994, <http://www.cse.wustl.edu/~jain/books/fddi.htm> [111+ Citations]
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1. Xin Li, Chengcheng Guo, Jun Xu, Lav Gupta, and Raj Jain, "**Towards Efficiently Provisioning 5G Core Network Slice Based on Resource and Topology Attributes**," in Modelling, Dimensioning and Optimization of 5G Communication Networks, Resources, and Services, Edited by Ioannis D. Moscholios, Mariusz Głabowski, Panagiotis Sarigiannidis and Michael D. Logothetis, MDPI, Switzerland, 2023, pp. 111-132, ISBN: 978-3-0365-5575-1, <https://www.mdpi.com/books/book/6607-modelling-dimensioning-and-optimization-of-5g-communication-networks-resources-and-services>
2. A Ghubaish, T Salman, R Jain, "**Experiments with a LoRaWAN-Based Remote ID System for Locating Unmanned Aerial Vehicles (UAVs)**," Prime Archives in Engineering, 2021
3. Lav Gupta, Raj Jain, and Gabor Vaszkun, "**Survey of Important Issues in UAV Communication Networks**," in *Handbook of Unmanned Aerial Vehicles*, Second Edition, edited by Kimon P. Valavanis and George J. Vachtsevanos, published by Springer, 2021, 5250 pp., ISBN: 978-3-319-48319-1.
4. Tara Salman, Raj Jain, "**Networking Protocols and Standards for the Internet of Things**," in *IoT Handbook* Edited by Hwaiyu Geng published by Wiley, 2016, http://www.cse.wustl.edu/~jain/books/iot_hdbk.htm [141+ Citations]
5. Subharthi Paul, Raj Jain, Jay Iyer, and Dave Oran, "**Mobile Apps on Global Clouds Using OpenFlow and Software Defined Networking**," in *Network Innovation through OpenFlow and SDN: Principles and Design*, Edited by Fei Hu published by CRC Press, February 2014, ISBN: 1466572094, <http://www.cse.wustl.edu/~jain/books/openadn.htm>
6. Abdel Karim Al Tamimi and Raj Jain, "**Security in Wireless Data Networks**," in *Handbook on Security and Networks*, Edited by Prof. Yang Xiao, Prof. Frank H. Li, and Prof. Hui Chen, to be published by World Scientific Publishing Co., ISBN: 9814273031, December 2010, <http://www.cse.wustl.edu>
7. Chakchai So-In, Raj Jain, and Abdel Karim Al-Tamimi, "**Resource Allocation in IEEE 802.16 Mobile WiMAX**," in *Orthogonal Frequency Division Multiple Access (OFDMA)*, Edited by

- Tao Jiang, Lingyang Song, Yan Zhang, Auerbach Publications, CRC Press, ISBN: 1420088246, April 2010, http://www.cse.wustl.edu/~jain/books/wimax_ra.htm.
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3. N. J. Gunther, "**The Practical Performance Analyst**," iUniverse.com, October 2000, ISBN 059512674X, 468 pp.

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2. Zebo Yang, Haneen Alfauri, Behrooz Farkiani, Raj Jain, Roberto DiPietro, and Aiman Erbad, "**A Survey of Post-quantum and Quantum Blockchains**," IEEE Communications Surveys & Tutorials, October 2023, <http://www.cse.wustl.edu/~jain/papers/qbpqb.htm>
3. Ali Ghubaish, Zebo Yang, Aiman Erbad, Raj Jain, "**LEMMA: A Novel Feature Engineering Method for Intrusion Detection in IoT systems**," IEEE Internet of Things Journal, November 2023, <http://www.cse.wustl.edu/~jain/papers/lemma.htm>
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5. M. Elnour, M. Noorizadeh, M. Shakerpour, N. Meskin, K. Khan, R. Jain, "**A Machine Learning Based Framework For Real-time Detection and Mitigation of Sensor False Data Injection Cyber-Physical Attacks in Industrial Control Systems**," IEEE Access, August 7, 2023, http://www.cse.wustl.edu/~jain/papers/rt_iot.htm
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51. Raj Jain, "**Seven Trends Leading to Opportunities in Multi-Cloud Global Application Delivery**," Keynote at 2016 International Conference on Communications, Image, and Signal Processing (CCISP), Dubai, November 19, 2016. <http://www.cse.wustl.edu/~jain/talks/ccisp16.htm>

52. Raj Jain, "**Software Defined Multi-Cloud Networking at the Tactical Edge**," Panel Presentation at IEEE MILCOM 2016 Conference, Baltimore, MD, November 2, 2016, http://www.cse.wustl.edu/~jain/talks/sdn_mlcb.htm
53. Raj Jain, "**Multi-Cloud Global Application Delivery for the Internet of Things and Smart Cities**," Keynote at the 2nd IEEE International Conference on Collaboration and Internet Computing (CIC), Pittsburgh, PA, Nov 1, 2016, http://www.cse.wustl.edu/~jain/talks/adn_cic.htm
54. Raj Jain, "**Unmanned Aerial Systems: Networking Applications, Challenges, and Issues**," Keynote at Midwest Drone Introduction, St. Louis, MO, October 15, 2016, <http://www.cse.wustl.edu/~jain/talks/unmanned.htm>
55. Raj Jain, "**Multi-Cloud Global Application Delivery for the Internet of Things and Smart Cities**," Keynote at the 7th IEEE Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON), Vancouver, Canada, October 14, 2016, <http://www.cse.wustl.edu/~jain/talks/iemcon.htm>
56. Raj Jain, "**Next Generation Internet, Wireless, and Network Security Research at Washington University in St. Louis**," talk to CSE 591 Introduction to Graduate Study in CSE Students, St. Louis, MO, Sept 28, 2016, <http://www.cse.wustl.edu/~jain/talks/cs59116.htm>.
57. Raj Jain, "**Next Generation Internet, Wireless, and Network Security Research at Washington University in St. Louis**," talk to CSE 131R Introduction to Computer Science I students, St. Louis, MO, Sept 26, 2016, <http://www.cse.wustl.edu/~jain/talks/cs13116.htm>.
58. Raj Jain, "**Blockchains: The Revolutionary Trust Protocol**," BEL Keynote at 22nd Annual International Conference on Advanced Computing and Communications (ADCOM 2016), Bengaluru, India, Sep 10, 2016, http://www.cse.wustl.edu/~jain/talks/blc_ad16.htm
59. Raj Jain, "**Software Defined Networking at the Tactical Edge**," Talk at Bharat Electronics Limited, Bangalore, India, September 10, 2016, http://www.cse.wustl.edu/~jain/talks/sdn_bel.htm.
60. Raj Jain, "**Internet of Things and Smart Cities Security: Challenges and Issues**," Keynote at 1st Annual Research Workshop on Advances & Innovations in Cyber Security, Memphis, TN, June 10, 2016, http://www.cse.wustl.edu/~jain/talks/iots_tns.htm
61. Raj Jain, "**Multi-Cloud Global Application Delivery for the Internet of Things and Smart Cities**," Talk at Cisco Research PI meeting, San Jose, CA, May 26, 2016, <http://www.cse.wustl.edu/~jain/talks/ciscopi.htm>.
62. Raj Jain, "**Multi-Cloud and Fog Computing for the Internet of Things and Smart Cities**," Talk at his installation as "Barbara J. and Jerome R. Cox Jr. Professor" at Washington University in St. Louis, May 24, 2016, http://www.cse.wustl.edu/~jain/talks/iots_cox.htm.
63. Raj Jain, "**Internet of Things and Smart Cities: Challenges and Issues**," Keynote at 2nd IEEE International Workshop on Sensors and Smart Cities (SSC2016), St. Louis, MO, May 18, 2016, http://www.cse.wustl.edu/~jain/talks/iots_ssc.htm
64. Raj Jain, "**Internet of Things Security: Challenges and Issues**," Keynote at 9th Central Area Networking and Security Workshop (CANSec), University of Central Missouri, Warrensburg, MO, April 16, 2016, http://www.cse.wustl.edu/~jain/talks/iots_ucm.htm

65. Raj Jain, "**Five Trends Leading to Opportunities in Multi-Cloud Global Application Delivery,**" Research seminar at Cisco, San Jose, March 18, 2016, <http://www.cse.wustl.edu/~jain/talks/cisco16.htm>
66. Raj Jain, "**Internet of Things: Research Issues,**" NSF Applications and Services Workshop, January 27, 2016, http://www.cse.wustl.edu/~jain/talks/iot_nsf.htm
67. Raj Jain, "**Five Trends in Computing Leading to Multi-Cloud Applications and Their Management,**" Seminar at Kindi Labs, Qatar University, Doha, Qatar, December 27, 2015, http://www.cse.wustl.edu/~jain/talks/apf_knd.htm
68. Raj Jain, "**Internet of Things: Research Challenges and Issues,**" Keynote at the Internet of Things World Forum, Research and Innovation Symposium, Dubai, December 5-6, 2015, <http://www.cse.wustl.edu/~jain/talks/iotwrld.htm>
69. Raj Jain, "**Internet of Things Security,**" Keynote at STLCybercon 2015, University of Missouri, St. Louis, November 20, 2015, http://www.cse.wustl.edu/~jain/talks/iots_um.htm
70. Raj Jain, "**Advancing in Performance Careers,**" Panel Presentation, 2015 CMG Performance and Capacity Conference, San Antonio, TX, November 5, 2015, http://www.cse.wustl.edu/~jain/talks/cmg_scs.htm
71. Raj Jain, "**Five Trends in Computing Leading to Multi-Cloud Applications and Their Management,**" 2015 CMG Performance and Capacity Conference, San Antonio, TX, November 5, 2015, http://www.cse.wustl.edu/~jain/talks/apf_cmg.htm
72. Raj Jain, "**Software Defined Networking at the Tactical Edge,**" Panel presentation at IEEE Milcom 2015, Tampa, FL, Oct 28, 2015, http://www.cse.wustl.edu/~jain/talks/sdn_mlc.htm
73. Raj Jain, "**Application Deployment in Future Global Multi-Cloud Environment,**" OIN Workshop, Saint Louis, MO, October 20, 2015, http://www.cse.wustl.edu/~jain/talks/apf_oin.htm
74. Raj Jain, "**Next Generation Internet, Wireless Networking, and Security Research at Washington University in St. Louis,**" Lecture to undergraduate students in CS131: Seminar in Computer Science I, October 12th, 2015, <http://www.cse.wustl.edu/~jain/talks/cs13115.htm>
75. Raj Jain, "**Next Generation Internet, Wireless Networking, and Security Research at Washington University in St. Louis,**" Lecture to incoming graduate students in CS591: Introduction to Graduate Study in CSE, October 5th, 2015, <http://www.cse.wustl.edu/~jain/talks/cs59115.htm>
76. Raj Jain, "**Smart Cities: Technological Challenges and Issues,**" IEEE CS Keynote at 21st Annual International Conference on Advanced Computing and Communications (ADCOM) 2015, Chennai, India, September 19, 2015, <http://www.cse.wustl.edu/~jain/talks/smrtcit.htm>
77. Raj Jain, Mohammed Samaka, "**Application Deployment in Future Global Multi-Cloud Environment,**" The 16th Annual Global Information Technology Management Association (GITMA) World Conference, Saint Louis, MO, June 23, 2015, http://www.cse.wustl.edu/~jain/talks/apf_git.htm
78. Deval Bhamare, Raj Jain, Mohammed Samaka, Gabor Vaszkun, Aiman Erbad, "**Multi-Cloud Distribution of Virtual Functions and Dynamic Service Deployment: OpenADN**

- Perspective,"** Workshop on Software Defined Systems 2015, Phoenix, AZ, March 9, 2015, http://www.cse.wustl.edu/~jain/talks/vm_distp.htm
79. Lav Gupta, Raj Jain, Mohammed Samaka, "**Dynamic Analysis of Application Delivery Network for Leveraging Software Defined Infrastructures,**" Workshop on Software Defined Systems 2014, Phoenix, AZ, March 9, 2014, <http://www.cse.wustl.edu/~jain/talks/profilep.htm>
80. Raj Jain, "**Next Generation Internet and Wireless Networking Research at WUSTL,**" a short talk on Ph.D. Day, CSE, WUSTL, December 5, 2014, http://www.cse.wustl.edu/~jain/talks/phdday_rj.htm
81. Raj Jain, "**OpenADN: Middleware Architecture for Cloud-Based Services,**" Presentation at Qatar National Research Foundation ARC 2014 conference, Doha, Qatar, November 18, 2014, http://www.cse.wustl.edu/~jain/talks/adn_arc.htm
82. Raj Jain, "**Internet of Things: Challenges and Issues,**" **IEEE CS Keynote** at the 20th Annual Conference on Advanced Computing and Communications (ADCOM 2014), Bengaluru, India, September 19, 2014, http://www.cse.wustl.edu/~jain/talks/iot_ad14.htm
83. Raj Jain, "**Virtualization and Software Defined Networking (SDN) for Multi-Cloud Computing,**" Invited talk at the Indian Institute of Science, Bengaluru, September 18, 2014, http://www.cse.wustl.edu/~jain/talks/apf_iis.htm
84. Raj Jain, "**Virtualization and Software Defined Networking (SDN) for Multi-Cloud Computing,**" Invited talk at IP Infusion, Bengaluru, September 18, 2014, http://www.cse.wustl.edu/~jain/talks/apf_ipf.htm
85. Raj Jain, "**Virtualization and Software Defined Networking (SDN) for Multi-Cloud Computing,**" Invited talk at PES University, Bengaluru, September 17, 2014, http://www.cse.wustl.edu/~jain/talks/apf_pes.htm
86. Raj Jain, "**Virtualization and Software Defined Networking (SDN) for Mobile Carriers,**" **Keynote** at IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM) 2014, Sydney, Australia, June 18, 2014, <http://www.cse.wustl.edu/~jain/talks/wowmom14.htm>
87. Raj Jain, "**AppFabric: Application Deployment and Service Chaining in Future NFV Cloud WAN Environments,**" Cisco Research Seminar, San Jose, CA, May 15, 2014, http://www.cse.wustl.edu/~jain/talks/apf_csc.htm
88. Raj Jain, "**SDN and NFV: Facts, Extensions, and Carrier Opportunities,**" AT&T Labs SDN Forum Seminar, April 10, 2014, http://www.cse.wustl.edu/~jain/talks/adn_att.htmf
89. Raj Jain, "**OpenADN: Service Chaining of Globally Distributed VNFs,**" Software Telco Congress, Sunnyvale, CA, November 20-21, 2013, http://www.cse.wustl.edu/~jain/talks/adn_stl.htm
90. Raj Jain, "**Networking for Big Data,**" IEEE CS Keynote at 19th Annual International Conference on Advanced Computing and Communications (ADCOM) 2013, Chennai, India, October 22, 2013, <http://www.cse.wustl.edu/~jain/talks/adcom13.htm>
91. Raj Jain, "**Next Generation Internet and Wireless Networking Research at Washington University in St. Louis,**" Lecture to incoming graduate students in CS591:Introduction to

- Graduate Study in CSE, September 18, 2013,
<http://www.cse.wustl.edu/~jain/talks/cs59113.htm>
92. Subharthi Paul, Raj Jain, Jianli Pan, Jay Iyer, and Dave Oran, "**OpenADN: A Case for Open Application Delivery Networking**," A paper presentation at International Conference on Computer Communications and Networks (ICCCN) 2013, Nassau, Bahamas, July 30-Aug 2, 2013, http://www.cse.wustl.edu/~jain/talks/ad_ic3np.htm
 93. Raj Jain, "**Next Gen Networking Using SDN and NFV**," IISC AANA Global Conference, Chicago, IL, July 19, 2013, http://www.cse.wustl.edu/~jain/talks/adn_iis.htm
 94. Raj Jain, "**Network Virtualization and Application Delivery Using Software Defined Networking**," Invited talk at Case Western Reserve University, Cleveland, OH, May 23, 2013, http://www.cse.wustl.edu/~jain/talks/adn_cwr.htm.
 95. Raj Jain, "**Toward an Energy-Proportional Building Prospect**," a paper presentation talk at the IEEE EnergyTech Conference, Cleveland, OH, May 23, 2013, <http://www.cse.wustl.edu/~jain/talks/etechp.htm>
 96. Raj Jain, "**Network Virtualization and Application Delivery Using Software Defined Networking**," Keynote at Huawei Strategy and Technology Workshop, Shenzhen, China, May 15, 2013, http://www.cse.wustl.edu/~jain/talks/adn_hwc.htm
 97. Raj Jain, "**Application Delivery Using Software Defined Networking**," Talk at Global Indian Technology Professionals (GITPro) World 2013, Palo Alto, CA, April 13, 2013, http://www.cse.wustl.edu/~jain/talks/sdn_gw.htm
 98. Raj Jain, "**Network Virtualization and Application Delivery Using Software Defined Networking**," Keynote at Huawei Strategy and Technology Workshop, Santa Clara, CA, March 19, 2013, http://www.cse.wustl.edu/~jain/talks/adn_hw.htm
 99. Raj Jain, "**OpenADN: Mobile Apps on Global Clouds Using Software Defined Networking**," Invited talk at IBM India and Bell Labs India, December 19, 2012, Bangalore, India, http://www.cse.wustl.edu/~jain/talks/adn_ibm.htm.
 100. Raj Jain, "**OpenADN: Mobile Apps on Global Clouds Using Software Defined Networking**," Invited talk at Wipro Technologies, December 17, 2012, Bangalore, India, http://www.cse.wustl.edu/~jain/talks/adn_wpr.htm.
 101. Raj Jain, "**OpenADN: Mobile Apps on Global Clouds Using Software Defined Networking**," Invited talk at IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS) 2012, December 16-19, 2012, Bangalore, India, http://www.cse.wustl.edu/~jain/talks/adn_ant.htm
 102. Raj Jain "**Network Virtualization and Application Delivery Using Software Defined Networking**," Invited talk at Advanced Computing and Communications Conference 2012 (ADCOM 2012), 14-16th December 2012, Bangalore, India, http://www.cse.wustl.edu/~jain/talks/adn_adc.htm.
 103. Raj Jain, "**A Novel Incrementally-Deployable Multi-granularity Multihoming Framework for the Future Internet**," a paper presentation talk at IEEE Global Communications Conference (Globecom) 2012, Anaheim, CA, December 3-7, 2012, <http://www.cse.wustl.edu/~jain/talks/slice.htm>

104. Raj Jain, "**OpenADN: Mobile Apps on Global Clouds Using OpenFlow and Software Defined Networking**," a paper presentation talk at First International Workshop on Management and Security technologies for Cloud Computing 2012 (ManSec-CC 2012), December 7, 2012, at Globecom 2012, Anaheim, CA, http://www.cse.wustl.edu/~jain/talks/ad_gc12p.htm
105. Raj Jain, "**Application Delivery Using SDN**," Lightning talk at the IEEE Global Communications Conference, Exhibition, & Industry Forum (Globecom) 2012, December 6, 2012, Anaheim, CA, http://www.cse.wustl.edu/~jain/talks/sdn_gc12.htm
106. Raj Jain, "**Current Trends in Internet Evolution and a Framework for Application Delivery**," Indo US Collaboration for Engineering Education (IUCEE) Virtual Academy Webinar, October 17, 2012, http://www.cse.wustl.edu/~jain/talks/adn_iuc.htm
107. Raj Jain, "**OpenADN: Mobile Apps on Global Clouds Using Software Defined Networking**," Keynote at Mobile Cloud Computing & Services 2012, June 25, 2012, Low Wood Bay, Lake District, UK, http://www.cse.wustl.edu/~jain/talks/adn_mcs.htm
108. Raj Jain, "**Networking Challenges for Big-Data Applications**," Eighth Annual Microsoft Research Networking Summit on Data Analytics and the Networks that Enable them, Woodinville, WA, June 18-19, 2012, <http://www.cse.wustl.edu/~jain/talks/bigdata.htm>
109. Raj Jain, "**Next Generation Internet: Architectures for Future Internet Evolution**," Keynote, International Conference on Communications, June 14, 2012, Ottawa, Ontario, Canada, <http://www.cse.wustl.edu/~jain/talks/icc12.htm>
110. Raj Jain, "**OpenADN: Mobile Apps on Global Clouds Using Software Defined Networking**," Cisco Seminar, May 17, 2012, San Jose, CA, http://www.cse.wustl.edu/~jain/talks/adns_cs.htm
111. Raj Jain, "**OpenADN: Mobile Apps on Global Clouds Using Software Defined Networking**," Insimeo, May 16, 2012, San Jose, CA, http://www.cse.wustl.edu/~jain/talks/adns_is.htm
112. Raj Jain, "**OpenADN: Mobile Apps on Global Clouds Using OpenFlow and SDN**," Microsoft Seminar, Bellevue, WA, April 24, 2012, http://www.cse.wustl.edu/~jain/talks/adns_ms.htm
113. Raj Jain, "**Communication and Modeling for Green Buildings**," ICARES Annual Research Presentations, Washington University in Saint Louis, March 24, 2012, <http://www.cse.wustl.edu/~jain/talks/icares.htm>
114. Raj Jain, "**Wireless Datalink for Unmanned Aircraft Systems: Requirements, Challenges, and Design Ideas**," a paper presentation talk at AIAA Infotec@Aerospace Conference, Saint Louis, MO, March 29, 2011, http://www.cse.wustl.edu/~jain/talks/uas_dlt.htm
115. Raj Jain, "**Current Trends in Internet Evolution and a Framework for Application Delivery**," Hitachi Distinguished Lecture, University of Oklahoma, Norman, February 17, 2011, http://www.cse.wustl.edu/~jain/talks/ngi_ou.htm
116. Raj Jain, "**Next Generation Internet: Architectures for Future Internet Evolution**," Qualcomm Distinguished Lecture, International Conference on Computing, Networking, and

- Communications (ICNC) 2012, Maui, Hawaii, January 30, 2012,
http://www.cse.wustl.edu/~jain/talks/ngi_icn.htm
117. Raj Jain, "**Network Virtualization**," Panel presentation, 5th IEEE International Conference on Advanced Networks and Telecommunication Systems (ANTS), Bangalore, India, December 21, 2011, http://www.cse.wustl.edu/~jain/talks/nv_ant.htm
 118. Raj Jain, "**Will BWA/LTE Rollout Spur Economic Growth?**," Panel presentation, 5th IEEE International Conference on Advanced Networks and Telecommunication Systems (ANTS), Bangalore, India, December 20, 2011, http://www.cse.wustl.edu/~jain/talks/bwa_ant.htm.
 119. Raj Jain, "**Current Topics for Networking Research**," Keynote speech at International Conference on Advanced Computing, Networking, and Security (ADCONS) 2011, National Institute of Technology Karnataka, Mangalore, India, December 17, 2011, <http://www.cse.wustl.edu/~jain/talks/adcons.htm>
 120. Raj Jain, "**Hot Topics in Networking Research for Carrier Network Evolution**," DOCOMO Innovations, Inc., Palo Alto, December 5, 2011, <http://www.cse.wustl.edu/~jain/talks/docomo.htm>
 121. Raj Jain, Arjan Duresi, "**Cloud-Based Distributed High-Speed Application Delivery**," A poster presentation at NSF US Ignite Workshop, Kansas City, KS, November 3-4, 2011, <http://www.cse.wustl.edu/~jain/talks/ignite.htm>
 122. Raj Jain, "**Network Virtualization**," A talk to CSE 770 Networking Research Seminar, November 1, 2011, http://www.cse.wustl.edu/~jain/talks/net_v.htm
 123. Raj Jain, "**Introduction to Computer Networking: Trends and Issues**," A talk to CSE 131 students, October 4, 2011, <http://www.cse.wustl.edu/~jain/talks/cs13111.htm>
 124. Raj Jain, "**Next Generation Internet and Wireless and Mobile Networking Research at Washington University**," A talk to CSE 591 students, September 28, 2011, <http://www.cse.wustl.edu/~jain/talks/cs59111.htm>
 125. Raj Jain, "**openSDN: A Service Delivery Network Architecture for Future Internet Evolution**," Intel Webinar, September 9, 2011, http://www.cse.wustl.edu/~jain/talks/sdn_itl.htm
 126. Raj Jain, "**openSDN: A Service Delivery Network Architecture for Future Internet Evolution**," Keynote at XXIX Brazilian Symposium on Computer Networks and Distributed Systems, May 30-June 3, 2011, Campo Grande, Mato Grosso do Sul, Brazil, http://www.cse.wustl.edu/~jain/talks/sdn_sbr.htm.
 127. Raj Jain, "**Architectures for Carrier Network Evolution**," Invited Talk at Docomo USA Labs, Palo Alto, CA, May 14, 2011, http://www.cse.wustl.edu/~jain/talks/sdn_dcm.htm.
 128. Raj Jain, "**openSDN: A Service Delivery Network Architecture for Future Internet Evolution**," Invited Talk at Hewlett Packard, Palo Alto, CA, March 12, 2011, http://www.cse.wustl.edu/~jain/talks/sdn_hp.htm.
 129. Raj Jain, "**Video Streaming over Mobile Networks: Issues, Challenges, and Opportunities**," Keynote at National Workshop on Wireless Communications and Mobile Networks (WCMN-2011), Al-Ahsa, Saudi Arabia, March 26, 2011, <http://www.cse.wustl.edu/~jain/talks/wcmn11.htm>

130. Raj Jain, "**Introduction to Computer Networking: Trends and Issues**," A webinar to Indo-US Collaboration in Engineering Education (IUCEE) participant colleges in India, March 22, 2011, <http://www.cse.wustl.edu/~jain/talks/iucee11.htm>
131. Raj Jain, "**openSDN: A Dirty-Slate Network Architecture for Cloud-Based Services**," NSF Science of Cloud Computing Workshop, Washington, DC, March 17-18, 2011, http://www.cse.wustl.edu/~jain/talks/sdn_nsf.htm
132. Raj Jain, "**Entrepreneur-Professor Partnership: Issues, Challenges and Suggestions**," TIE Panel Presentation, Santa Clara, CA, March 3, 2011, <http://www.cse.wustl.edu/~jain/talks/tie1103.htm>
133. Raj Jain, "**Analysis of L-Band Digital Aeronautical Communication Systems: L-DACS1 and L-DACS2**," IEEE Aerospace Conference, Big Sky, MT, March 6, 2011, http://www.cse.wustl.edu/~jain/talks/ldacs_ia11.htm
134. Raj Jain, "openSDN: A Service Delivery Network Architecture for Future Internet Evolution," Invited Talk at Ericsson Research, San Jose, CA, March 3, 2011, http://www.cse.wustl.edu/~jain/talks/sdn_ers.htm
135. Raj Jain, "**openSDN: A Service Delivery Network Architecture for Future Internet Evolution**," Inaugural Speech at 3rd International Conference on Communication Systems and Networks (COMSNETS 2011), Bangalore, India, January 4-11, 2011, <http://www.cse.wustl.edu/~jain/talks/comsnets11.htm>
136. Raj Jain, "**openSDN: A Service Delivery Network Architecture for Future Internet Evolution**," Keynote Speech at the 4th IEEE International Symposium on Advanced Networks and Telecommunication Systems (ANTS 2010), Mumbai, India, December 16-18, 2010, <http://www.cse.wustl.edu/~jain/talks/ants10.htm>
137. Raj Jain, "**A Future Internet Architecture Based on De-Conflated Identities**," a paper presentation at Globecom 2010, Miami, FL, December 8, 2010, <http://www.cse.wustl.edu/~jain/talks/deconft.htm>
138. Raj Jain, "**Internet 3.0: The Next Generation Internet**," Keynote Speech at International Conference on Models of Information and Communication Systems (MICS 2010), Rabat, Morocco, November 2-4, 2010, http://www.cse.wustl.edu/~jain/talks/in3_mics.htm
139. Raj Jain, "**Introduction to Computer Networking: Trends and Issues**," A lecture given in CS 131: Computer Science I class at WUSTL, October 4, 2010, <http://www.cse.wustl.edu/~jain/talks/cs13110.htm>
140. Raj Jain, "**Networking as a Service (NaaS): Cloud Centric Networking in a Federated Environment**," 7th Annual Microsoft Research Networking Summit in Bellevue, Washington, June 2-3, 2010, http://www.cse.wustl.edu/~jain/talks/ms_smt10.htm
141. Raj Jain, "**Next Generation Internet and Wireless Networking Research at Washington University in Saint Louis**," 1st Annual Midwest University-Industry Summit, Purdue University, Lafayette, Indiana, March 31-April 1, 2010, <http://www.cse.wustl.edu/~jain/talks/mwuis.htm>
142. Raj Jain, "**Aeronautical Datalinks: Recent Developments and Issues**," Boeing Corporation, June 4, 2010, <http://www.cse.wustl.edu/~jain/talks/ldac106.htm>

143. Raj Jain, "**An Identifier/Locator Split Architecture for Exploring Path Diversity through Site Multi-homing - A Hybrid Host-Network Cooperative Approach**," a paper presentation at IEEE International Conference on Communications (ICC 2010), Cape Town, South Africa, May 23-27, 2010, <http://www.cse.wustl.edu/~jain/talks/multihmp.htm>
144. Raj Jain, "**Aeronautical Datalinks: Recent Developments and Issues**," Boeing Corporation, April 1, 2010, <http://www.cse.wustl.edu/~jain/talks/ldac104.htm>
145. Raj Jain, "**L-DACS1/2 Data Link Analysis Part I: Functional Analysis**," Boeing Corp, February 11, 2010, <http://www.cse.wustl.edu/~jain/talks/ldac1002.htm>
146. Raj Jain, "**Green Networking in the Next Generation Internet: Challenges and Issues**," ADCOM-ACCS Award talk given at ADCOM 2009 Conference, Bangalore, December 14, 2009, <http://www.cse.wustl.edu/~jain/talks/adcom09.htm>
147. Raj Jain, "**Hybrid Transition Mechanism for MILSA Architecture for the Next Generation Internet**," a paper presentation at FutureNet-II workshop, Globecom 2009, Honolulu, HI, December 4, 2009, <http://www.cse.wustl.edu/~jain/talks/milsatp.htm>
148. Raj Jain, "**Internet 3.0: The Next Generation Internet**," HP Labs, Palo Alto, CA, November 19, 2009, http://www.cse.wustl.edu/~jain/talks/in3_hp.htm
149. Raj Jain, "**Internet 3.0: The Next Generation Internet**," Computer Science Colloquium, University of Arkansas, November 12, 2009, http://www.cse.wustl.edu/~jain/talks/in3_uca.htm
150. Raj Jain, "**Internet 3.0: The Next Generation Internet**," Computer Science Colloquium, University of Central Arkansas, November 12, 2009, http://www.cse.wustl.edu/~jain/talks/in3_uap.htm
151. Raj Jain, "**Internet 3.0: The Next Generation Internet**," Computer Science Colloquium, Missouri University of Science and Technology, October 22, 2009, http://www.cse.wustl.edu/~jain/talks/in3_mst.htm
152. Raj Jain, "**Internet 3.0: Future Internet Architecture**," A talk at NSF Future Network Summit, Washington, DC, October 13, 2009, http://www.cse.wustl.edu/~jain/talks/in3_nsf.htm
153. Raj Jain, "**Internet 3.0: The Next Generation Internet**," Colloquium talk, Computer Science and Engineering Department, Washington University in Saint Louis, October 9, 2009, http://www.cse.wustl.edu/~jain/talks/in3_cse.htm
154. Raj Jain, "**Next Generation Internet and Wireless and Mobile Networking Research at Washington University**," A talk to CSE 591 students, September 14, 2009, <http://www.cse.wustl.edu/~jain/talks/cs59109.htm>
155. Raj Jain, "**Policy-Oriented Architecture for the Future Internet: Internet 3.0**," Keynote presentation at 12th International Conference on Network-Based Information Systems (NBIS 2009), Aug 19-21, 2009, Indianapolis, IN, http://www.cse.wustl.edu/~jain/talks/in3_nib.htm
156. Raj Jain, "**Enhanced MILSA Architecture for Naming, Addressing, Routing, and Security Issues in the Next Generation Internet**," a conference presentation at IEEE International Conference on Communications (ICC) 2009, Dresden, Germany, June 14-18, 2008, <http://www.cse.wustl.edu/~jain/talks/emilsap.htm>

157. Raj Jain, "**ID/Locator Separation Technology and Its Implications for Future Network Design**," A talk given to Huawei Technologies Co., Ltd. on May 9, 2009, http://www.cse.wustl.edu/~jain/talks/in3_hub.htm
158. Raj Jain, "**Internet 3.0: The Next Generation Internet**," A keynote presentation by professor Raj Jain at Networking Architecture Symposium 1969-2009: Forty years of Internetworking Research, at Centro Stefano Frascini at Monte Verita in Ascona, Switzerland, March 15-20, 2009, http://www.cse.wustl.edu/~jain/talks/in3_na.htm
159. Raj Jain, "**Broadband Wireless Access**," Invited talk at Broadband Access Communication Technologies III Conference, Photonics West, San Jose, January 28, 2009, <http://www.cse.wustl.edu/~jain/talks/pw09.htm>
160. Raj Jain, "**Internet 3.0: The Next Generation Internet**," A talk to Boeing Brown Bag Seminar series, given remotely on January 22, 2009, http://www.cse.wustl.edu/~jain/talks/in3_bng.htm
161. Raj Jain, "**Internet 3.0: The Next Generation Internet**," 2nd IEEE International Symposium on Advanced Networks and Telecommunication Systems (ANTS) 2008, Mumbai, India, December 15-17, 2008, http://www.cse.wustl.edu/~jain/talks/in3_ant.htm
162. Raj Jain, "**Internet 3.0: The Next Generation Internet**," IEEE Mumbai Chapter, India, December 15, 2008, http://www.cse.wustl.edu/~jain/talks/in3_bmb.htm
163. Raj Jain, "**Broadband Wireless Access**," IEEE Mumbai Chapter, India, December 15, 2008, <http://www.cse.wustl.edu/~jain/talks/ieeembm.htm>
164. Raj Jain, "**Internet 3.0: The Next Generation Internet**," Keynote speech at 16th IEEE International Conference on Networks (ICON) 2008, New Delhi, India, December 13, 2008, http://www.cse.wustl.edu/~jain/talks/in3_icn.htm
165. Raj Jain, "**Routing Architecture for the Next Generation Internet (RANGI)**," Routing Research Group (RRG) at Internet Research Task Force Meeting, Minneapolis, MN, November 21, 2008, <http://www.cse.wustl.edu/~jain/ietf/rangi.htm>
166. Raj Jain, "**Next Generation Internet and Wireless and Mobile Networking Research at Washington University**," A talk to CSE 591 students, November 19, 2008, <http://www.cse.wustl.edu/~jain/talks/cs59108.htm>
167. Raj Jain, "**Internet 3.0: Performance and Productivity Issues of the Internet and a Proposal for the Next Generation**," Invited talk at Saint Louis Computer Measurement Group (CMG), November 18, 2008, http://www.cse.wustl.edu/~jain/talks/in3_cmgs.htm
168. Raj Jain, "**Internet 3.0: The Next Generation Internet**," Talk at US-JAPAN workshop on Future Internet, Palo Alto, October 31-November 1, 2008, http://www.cse.wustl.edu/~jain/talks/in3_uj.htm
169. Raj Jain, "**Internet 3.0: The Next Generation Internet**," Keynote speech at ACM Multimedia 2008 conference at Vancouver, BC, Canada, October 27-30, 2008, http://www.cse.wustl.edu/~jain/talks/in3_acm.htm
170. Raj Jain, "**Internet 3.0: Ten Problems with the Current Internet and a Proposal for the Next Generation**," Huawei Technologies, Beijing, China, September 26, 2008, http://www.cse.wustl.edu/~jain/talks/in3_hu.htm

171. Raj Jain, "**A Vision of the Next Generation Internet: A Policy-Oriented Perspective**," British Computer Society Conference on Visions of Computer Science, Imperial College, London, UK, September 22-24, 2008, <http://www.cse.wustl.edu/~jain/papers/bcs08.htm>
172. Raj Jain, "**Wireless Networking: Trends and Issues**," A lecture given in CS 131: Computer Science I class at WUSTL, October 10, 2008, http://www.cse.wustl.edu/~jain/talks/cs131_08.htm
173. Raj Jain, "**Internet 3.0: Ten Problems with the Current Internet and a Proposal for the Next Generation**," Keynote speech at International Conference on Communication, Convergence and Broadband Networking (ICCBN) 2008, Bangalore, India, July 17-20, 2008, http://www.cse.wustl.edu/~jain/talks/in3_ib.htm
174. Raj Jain, "**International Conference on Communication Convergence and Broadband Networking, 2008 (ICCBN 2008): Program Overview**," Slides of the conference program overview presentation at ICCBN 2008, Bangalore, India, July 15-20, 2008, <http://www.cse.wustl.edu/~jain/talks/iccbn08.htm>
175. Raj Jain, "**Internet 3.0: Ten Problems with the Current Internet and a Proposal for the Next Generation**," Keynote speech at International Conference on Computer and Communication Engineering, 2008 (ICCCE 2008), Kuala Lumpur, Malaysia, May 13-15, 2008, http://www.cse.wustl.edu/~jain/talks/in3_ic.htm
176. Jianli Pan, Subharthi Paul, and Raj Jain, "**Naming Architecture for the Next Generation Internet**," Intel Corporation, Hillsboro, OR, April 24, 2008, <http://www.cse.wustl.edu/~jain/talks/naming.htm>
177. Raj Jain, "**Internet 3.0: Ten Problems with Current Internet Architecture and a proposal for the Next Generation**," Indiana University Purdue University of Indianapolis (IUPUI), February 11, 2008, http://www.cse.wustl.edu/~jain/talks/in3_iu.htm
178. Raj Jain, S. Misra, R. Venkateswaran, R. Iyengar, S. Krishnaiyer, D. Doria, S. Kalyanaraman, B. Sikdar, R. Rouil, N. Golmie, S. Parekh, and T. Tofigh, "**WiMAX System Level Modeling**," Invited presentation, Design and Development Forum, IEEE Globecom 2007, Washington, DC, November 24, 2007, <http://www.cse.wustl.edu/~jain/talks/gc07.htm>
179. Raj Jain, "**Internet 3.0: Performance and Productivity Issues of the Internet and a Proposal for the Next Generation**," Invited talk, Computer Measurement Group (CMG) 2007 Conference, San Diego, CA, December 6, 2007, http://www.cse.wustl.edu/~jain/talks/in3_cmg.htm
180. Raj Jain, "**Wireless Access Networks: Recent Developments, Issues, and Trends**," Keynote at AccessNets 2007, Ottawa, Ontario, Canada, August 24, 2007, <http://www.cse.wustl.edu/~jain/talks/accnet.htm>
181. Raj Jain, "**Internet 3.0: Ten Problems with Current Internet Architecture and a proposal for the Next Generation**," A talk given at:
 - a. Nortel, Santa Clara, CA, September 14, 2007, http://www.cse.wustl.edu/~jain/talks/in3_nt.htm.
 - b. Cisco TechWiz Seminar, San Jose, CA, August 2, 2007, http://www.cse.wustl.edu/~jain/talks/in3_cs.htm.
 - c. IEEE Distinguished Lecture via the Internet to the following IEEE Chapters of Asia-Pacific Region, May 9, 2007: Bandung (Indonesia), Bangkok (Thailand), Bombay (India), Calcutta

- (India), Lahore (Pakistan), Melbourne, (Australia), Singapore, Taipei (Taiwan), and Brisbane (Australia), http://www.cse.wustl.edu/~jain/talks/in3_ie.htm.
- d. Invited talk, Motorola Research, May 22, 2007, http://www.cse.wustl.edu/~jain/talks/in3_mt.htm.
 - e. Invited talk, Microsoft Research, Bellevue, WA, April 6, 2007, http://www.cse.wustl.edu/~jain/talks/in3_ms.htm
 - f. Invited talk at the University of Illinois, Urbana/Champaign, IL, March 5, 2007, http://www.cse.wustl.edu/~jain/talks/in3_ui.htm.
182. Raj Jain, "**High-Speed TCP: Recent Developments, Issues, and Challenges**," Invited talk, Microsoft High-Speed TCP Workshop, Bellevue, WA, February 4-5, 2007, <http://www.cse.wustl.edu/~jain/talks/mstep.htm>
183. Raj Jain, "**Hot Issues in Wireless Broadband Networking**," at Broadband Access Communication Technologies (IT404) conference, Part of SPIE's International Symposium on Optics East 2006, Boston, MA, October 1-4, 2006, <http://www.cse.wustl.edu/~jain/talks/oe06.htm>
184. Raj Jain, "**Internet 3.0: Ten Problems with Current Internet Architecture and Solutions for the Next Generation**," Invited talk given at:
- a. Agere, May 25, 2006, http://www.cse.wustl.edu/~jain/talks/in3_ag.htm,
 - b. Intel, September 15, 2006;
 - c. NASA Lewis Center, October 5, 2006, http://www.cse.wustl.edu/~jain/talks/in3_ns.htm
 - d. Kent State University, October 6, 2006, http://www.cse.wustl.edu/~jain/talks/in3_ks.htm
 - e. IEEE Military Communications Conference (MILCOM 2006), http://www.cse.wustl.edu/~jain/talks/in3_mc.htm,
 - f. IEEE Distinguished Lecture, Orange County, CA, November 2, 2006, http://www.cse.wustl.edu/~jain/talks/in3_oc.htm
185. Raj Jain, "**Wireless Personal Area Networks (WPANs)**," WUSTL CSE467S Class guest lecture, April 24, 2006, <http://www.cse.wustl.edu/~jain/talks/wpans.htm>
186. Raj Jain, "**Broadband Access: Issues and Trends**," Invited Talk, SPIE Conference #6012 on Optical Transmission Systems and Equipment for WDM Networking IV, Boston, October 25, 2005, <http://www.cse.wustl.edu/~jain/talks/oe05.htm>
187. Raj Jain, "**QoS and NGN**," Quality of Service and Next Generation Networks Panel, International Technology Forum (ITF 2005), Palo Alto, CA, October 20, 2005, <http://www.cse.wustl.edu/~jain/talks/itf05qs.htm>
188. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," IEEE Distinguished Lecture, On-line to Region 10, September 7, 2005, <http://www.cse.wustl.edu/~jain/talks/ieee0509.htm>
189. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," Keynote Speech, 11th IEEE International Conference on Parallel and Distributed Systems (ICPADS-2005), Fukuoka, Japan, July 20-22, 2005, <http://www.cse.wustl.edu/~jain/talks/icpads05.htm>

190. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," Washington University in Saint Louis, June 14, 2005, <http://www.cse.wustl.edu/~jain/talks/wustl05.htm>
191. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," invited talk given at:
 - a. New Jersey Institute of Technology (April 25, 2005)
 - b. Arizona State University (April 28, 2005)
 - c. University of Texas, Arlington, TX (April 26, 2005)
 - d. Texas A&M University (April 29, 2005)
 - e. The University of Illinois, Chicago (April 18, 2005), <http://www.cse.wustl.edu/~jain/talks/trends05.htm>
192. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," Duke University, February 14, 2005, <http://www.cse.wustl.edu/~jain/talks/duke0502.htm>
193. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," IEEE Distinguished Lecture, On-line to Region 4, January 26, 2005, <http://www.cse.wustl.edu/~jain/talks/ieee0501.htm>
194. Raj Jain, "**Computer Networks: Recent Developments Trends and Issues**," Keynote Speech, IEEE Conference on Local Computer Networks (LCN04), Orlando, Florida, November 18, 2004, <http://www.cse.wustl.edu/~jain/talks/lcn04.htm>
195. Raj Jain, "**Nayna ExpressSTREAM Broadband EFM Access System**," Network Systems Design Conference, San Jose, CA, October 18-21, 2004, <http://www.cse.wustl.edu/~jain/talks/nsdc04.htm>
196. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," IEEE Distinguished Lecture, ITESM Campus, Monterrey, September 29, 2004, University of the Americas, Puebla, September 30, 2004, and Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Guadalajara, October 1, 2004, Industry Club, Guadalajara, October 1, 2004, <http://www.cse.wustl.edu/~jain/talks/trends04.htm>
197. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," Keynote Speech, 2004 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS'04), San Jose, CA, July 25-29, 2004, <http://www.cse.wustl.edu/~jain/talks/spects04.htm>
198. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," Samuel D. Conte Distinguished Lecture in Computer Science, Purdue University, September 13, 2004, <http://www.cse.wustl.edu/~jain/talks/purdue.htm>
199. Raj Jain, "**Broadband Access Using Ethernet in the First Mile (EFM)**," Invited presentation, International Conference on Communication and Broadband Networking (ICBN 2004), Kyoto, Japan, April 8, 2004, http://www.cse.wustl.edu/~jain/talks/icbn04_efm.htm
200. Raj Jain, "**Passive optical networks (PON): recent developments and issues**," Invited presentation, Optical Transmission Systems and Equipment for WDM Networking II

- conference, Orlando, FL, September 8-11, 2003,
<http://www.cse.wustl.edu/~jain/talks/itcom03.htm>
201. Raj Jain, "**Optical Networking: Recent Developments, Issues, and Trends**," IEEE Distinguished Lecture, May 27-29, 2003, Atlanta, GA, Charleston SC, Columbia SC, and Raleigh, NC, and a joint meeting of IEEE Communications Society and Signal processing society sections, Orange County, CA, April 10, 2003,
http://www.cse.wustl.edu/~jain/talks/opt_iee2.htm
 202. Raj Jain, "**Industry Watch Program**," International Conference on Broadband Networking, Bangalore, India, May 7, 2003
 203. Raj Jain, "**Optical Networking with IP over DWDM: Recent Advances, Trends, and Issues**," Invited Lecture, Wipro Technologies, Bangalore, India, May 6, 2003,
http://www.cse.wustl.edu/~jain/talks/opt_wpr.htm
 204. A. Durresi and Raj Jain, "**Enhanced Traffic Management in IP Networks**," 2003 NSF ANIR Principle Investigator Meeting, January 9-10, 2003, Reston, Virginia,
<http://www.cse.wustl.edu/~jain/talks/nsf0301.htm>
 205. Raj Jain, "**Optical Networking: Recent Developments, Issues, and Trends**," IEEE Distinguished Lecture, December 2-4, 2002,
http://www.cse.wustl.edu/~jain/talks/opt_ieee.htm
 206. Raj Jain, "**Computer Networking: Recent Advances, Trends, and Issues**," Keynote Speech at Concord Users Group Meeting, Tempe, AZ, April 9, 2002,
<http://www.cse.wustl.edu/~jain/talks/concord.htm>
 207. Sudheer Dharanikota, Raj Jain, Yong Xue, Curtis Brownmiller, Dimitri Papadimitriou, Riad Hartan, Greg Bernstein, Vishal Sharma, John Strand, "**Inter-domain Routing with Shared Risk/Resource Groups (SRG)**," MPLS World Congress, February 8, 2002,
<http://www.cse.wustl.edu/~jain/talks/srg02.htm>
 208. Raj Jain, "**Computer Networking: Recent Advances, Trends, and Issues**," Invited lecture at Indian Institute of Information Technology, Trivandrum, December 22, 2001,
<http://www.cse.wustl.edu/~jain/talks/iiitm01.htm>
 209. Raj Jain, "**Optical Networking with IP over DWDM: Recent Advances, Trends, and Issues**," IEEE Distinguished Lecture at IIT Delhi, IIT Bombay, IISc Bangalore, and Trivandrum, December 16-20, 2001, http://www.cse.wustl.edu/~jain/talks/opt_ind.htm
 210. Raj Jain, "**Networking Architecture: Recent Developments**," A discussion session at CIO Community of Practice, Milpitas, CA, November 15, 2001,
<http://www.cse.wustl.edu/~jain/talks/ciocp01.htm>
 211. Raj Jain, "**Optical Networks: Recent Advances, Trends, and Issues**," Keynote Speech, Opnetwork 2001 Conference, Washington, DC, August 29, 2001,
<http://www.cse.wustl.edu/~jain/talks/opnet01.htm>
 212. Raj Jain, "**IP over DWDM: Issues and Standards**," Invited Speech at ITCOM 2001 Conference, Denver, August 24, 2001, <http://www.cse.wustl.edu/~jain/talks/itcom01.htm>
 213. Raj Jain, "**IP over DWDM: Trends and Issues**," Invited Speech at CITO/OCRI Tech Talk Workshop on Optical Networks, Ottawa, Ontario, October 17, 2000,
<http://www.cse.wustl.edu/~jain/talks/cito00.htm>

214. Raj Jain, "**IP over DWDM Networks**," Invited Speech at OPNETWORK'2000, Washington, DC, August 28-Sept 1, 2000, <http://www.cse.wustl.edu/~jain/talks/opnet00.htm>.
215. Raj Jain, "**IP over Petabit DWDM Networks: Issues and Challenges**," Keynote Speech, NREN Gigabit Networking Workshop, Moffett Field, CA, August 14-16, 2000, <http://www.cse.wustl.edu/~jain/talks/nren.htm>
216. Raj, Jain, "**Current Issues in Telecom Networks: QoS, Traffic Engineering and DWDM**," Keynote Speech by Professor Raj Jain at SPECTS Conference, Vancouver, Canada, July 19, 2000, <http://www.cse.wustl.edu/~jain/talks/spects.htm>
217. M. Atiquzzaman, Raj Jain, W. Ivancic, et al., "**QoS for Real-Time Applications over Next Generation Data Networks**," Project Status Report, Part 1, NASA Cleveland, OH, June 2, 2000, <http://www.cse.wustl.edu/~jain/talks/qos.htm>
218. Raj Jain, "**IP over ATM**," A lecture given remotely to Monterrey Tech, ITESM Virtual University, Mexico, May 4, 2000, http://www.cse.wustl.edu/~jain/talks/atm_ip.htm
219. Raj Jain, "**IP over DWDM Networks**," GTE, Boston, January 19, 2000, http://www.cse.wustl.edu/~jain/talks/opt_gte.htm
220. Raj Jain, "**Optical DWDM Networks**," Nortel Networks, November 5, 1999, http://www.cse.wustl.edu/~jain/talks/h_5opt.htm
221. Raj Jain, "**IP over DWDM**," Nortel Networks, November 5, 1999, http://www.cse.wustl.edu/~jain/talks/h_aipwd.htm
222. Raj Jain, "**Quality of Service in Data Networks**," Workshop on Next Generation Networks, Nortel Networks, Ottawa, Canada, October 28-29, 1999, <http://www.cse.wustl.edu/~jain/talks/qos9910.htm>
223. Raj Jain, "**Networking and Telecommunications Research at OSU**," To CIS 885 Class at Ohio State University, October 13, 1999, http://www.cse.wustl.edu/~jain/talks/osu_net.htm
224. Raj Jain, "**Quality of Service in Data Networks: Trends, Solutions, and Issues**," Keynote speech at ICON'99, Brisbane, Australia, September 29, 1999, <http://www.cse.wustl.edu/~jain/talks/icon99.htm>
225. Raj Jain, "**Current Trends in Networking Traffic Management and Quality of Service**," Invited Speech at OPNETWORK'99, Washington, DC, August 30, 1999, <http://www.cse.wustl.edu/~jain/talks/opnet99.htm>.
226. Raj Jain, "**Quality of Service and Traffic Engineering using Multiprotocol Label Switching**," ETRI, Korea, August 17, 1999, http://www.cse.wustl.edu/~jain/talks/mpls_te.htm
227. Raj Jain, "**Quality of Service In Data Networks: Problems, Solutions, and Issues**," Seoul National University, and Samsung, Seoul, Korea, August 16, 1999, <http://www.cse.wustl.edu/~jain/talks/qos9908.htm>
228. Raj Jain, "**Traffic Management in Satellite Networks**," Invited speech at International Symposium on Radio Technologies (ISART'99), Boulder, CO, August 1, 1999, <http://www.cse.wustl.edu/~jain/talks/isart99.htm>.
229. Raj Jain, "**Traffic Management in ATM Networks over Satellite Links**," Communications and Interoperability Section and TR34.1, Satellite Communications Division,

- Telecommunications Institute of America (TIA), Arlington, VA, July 7, 1999,
<http://www.cse.wustl.edu/~jain/talks/tiarpt.htm>
230. Raj Jain, "**Quality of Service In Data Networks: Problems, Solutions, and Issues**," Nokia Research Center, Helsinki, Finland, June 8, 1999,
<http://www.cse.wustl.edu/~jain/talks/qos9906.htm>
 231. Raj Jain, et al., "**ODEN: Ohio Distance Education Network**," A funding proposal presentation to Ohio Board of Regents, May 27, 1999,
<http://www.cse.wustl.edu/~jain/talks/oden.htm>
 232. Raj Jain, "**Quality of Service In Data Networks: Problems, Solutions, and Issues**," NetWorld+InterOp Engineering Conference Panel, Las Vegas, Nevada, May 12, 1999,
<http://www.cse.wustl.edu/~jain/talks/qos9905.htm>
 233. Raj Jain, "**Recent Trends in Networking Including ATM and Its Traffic Management and QoS**," Invited Speech at ITESM, Monterrey, Mexico March 23, 1999,
http://www.cse.wustl.edu/~jain/talks/atm_mty.htm.
 234. Raj Jain, "**Our Research on Real-Time ABR, VS/VD, and Multipoint ABR: Final Report**," A status report presentation to Rome Airforce Lab, Rome, NY, March 11, 1999,
<http://www.cse.wustl.edu/~jain/talks/ssci993.htm>
 235. Raj Jain, "**QoS over Data Networks**," DARPA Quorum PI Meeting, Poster Session, Atlanta, GA, February 17, 1999, <http://www.cse.wustl.edu/~jain/talks/quorum.htm>
 236. Raj Jain, "**Design Issues in Traffic Management for the ATM UBR+ Service for TCP over Satellite Networks: Final Report**," NASA Lewis Research Center, Cleveland, OH, January 26, 1999, http://www.cse.wustl.edu/~jain/talks/nas_ub3.htm
 237. Raj Jain, "**TCP over ATM using ABR, UBR, and GFR services and QoS over IP issues**," COST-257 Midterm Seminar, Faro, Portugal, January 20, 1999, (video available),
http://www.cse.wustl.edu/~jain/talks/cong_pt.htm
 238. Raj Jain, "**TCP over ATM using ABR, UBR, and GFR services and QoS over IP issues**," Alcatel Research, Antwerp, Belgium, January 19, 1999,
http://www.cse.wustl.edu/~jain/talks/cong_al.htm
 239. Raj Jain, "**TCP over ATM using ABR, UBR, and GFR services and QoS over IP issues**," the University of Antwerp, Antwerp, Belgium, January 18, 1999,
http://www.cse.wustl.edu/~jain/talks/cong_bl.htm
 240. Raj Jain, "**Recent Trends in Networking Including ATM and Its Traffic Management and QoS**," Keynote Speech at International Conference on High-Performance Computing, Chennai (Madras), India, December 19, 1998,
<http://www.cse.wustl.edu/~jain/talks/hipc98.htm>
 241. Raj Jain, "**Recent Advances in Networking Including ATM, Traffic Management, Switching, and QoS**," Larsen Tubro and Fore Systems, Chennai (Madras), India, December 18, 1998, <http://www.cse.wustl.edu/~jain/talks/tmswqos.htm>
 242. Raj Jain, "**IP End-to-End Quality of Service: Recent Solutions and Issues**," Nortel, Canada, December 10, 1998, <http://www.cse.wustl.edu/~jain/talks/ipqosb.htm>

243. Raj Jain, "**Current Issues in ATM Forum Traffic Management Group: GFR and DiffServ**," Nortel, Canada, December 10, 1998, http://www.cse.wustl.edu/~jain/talks/tm_gfr.htm
244. Raj Jain, "**ABR Engineering: Guidelines for Setting ABR Parameters**," Nortel, Canada, December 10, 1998, http://www.cse.wustl.edu/~jain/talks/cng_prm.htm
245. Raj Jain, "**ATM Networking Research At OSU**," To CIS 885 Class at Ohio State University, October 14, 1998, http://www.cse.wustl.edu/~jain/talks/osu_at3.htm
246. Raj Jain, "**Traffic Management and Quality of Service Issues for Large High-Speed Networks**," First NASA Workshop on Performance-Engineered Information Systems NASA Ames Research Center, Moffett Field, Calif, September 28-30, 1998, http://www.cse.wustl.edu/~jain/talks/nas_ipg.htm
247. Raj Jain, "**Virtual Private Networks**," Nortel, Canada, September 25, 1998, <http://www.cse.wustl.edu/~jain/talks/vpn.htm>
248. Raj Jain, "**A Comparison of ATM Service Categories**," Nortel, Canada, September 25, 1998, http://www.cse.wustl.edu/~jain/talks/tm_cats.htm
249. Raj Jain, "**TCP/IP over ATM using ABR, UBR, and GFR services**," Lucent Technologies, Holmdel, NJ, September 11, 1998, http://www.cse.wustl.edu/~jain/talks/cong_l2.htm
250. Raj Jain, "**Voice over IP: Issues and Challenges**," Nortel, Canada, August 14, 1998, and Southwestern Bell, Atlanta, October 21, 1998, <http://www.cse.wustl.edu/~jain/talks/voip.htm>
251. Raj Jain, "**Improving Performance of TCP/IP over ATM UBR+ Service**," Nortel, Canada, August 14, 1998, http://www.cse.wustl.edu/~jain/talks/tcp_ubr.htm
252. Raj Jain, "**Traffic Management on Satellite ATM Networks**," Indian Institute of Science, Bangalore, India, July 21, 1998, http://www.cse.wustl.edu/~jain/talks/cong_in.htm
253. Raj Jain, "**Traffic Management of Internet Protocols on ATM Networks**," Lucent Technologies, Middletown, NJ, June 12, 1998, http://www.cse.wustl.edu/~jain/talks/cong_lu.htm
254. Raj Jain, "**Design Issues in Traffic Management for the ATM UBR+ Service for TCP over Satellite Networks: Report II**," NASA Lewis Research Center, Cleveland, OH, June 9, 1998, http://www.cse.wustl.edu/~jain/talks/nas_ub2.htm
255. Raj Jain, "**Switch Algorithms for Multipoint ABR Service over ATM Networks**," Lucent Technologies, Middletown, NJ, June 12, 1998, http://www.cse.wustl.edu/~jain/talks/mpt_lu.htm
256. Raj Jain, "**Addressing Interoperability in Satellite Networks: Issues and Challenges**," Satellite Networks: Architectures, Applications, and Technologies Workshop, Cleveland, OH, June 2-4, 1998, <http://www.cse.wustl.edu/~jain/talks/nas9806.htm>
257. Raj Jain, "**Quality of Service in IP Networks**," Nortel, Canada, May 15, 1998, <http://www.cse.wustl.edu/~jain/talks/ipqos.htm>
258. Raj Jain, "**Current Issues in ATM Forum Traffic Management: Part III**," Nortel, Canada, May 15, 1998, http://www.cse.wustl.edu/~jain/talks/tm_iss3.htm

259. Raj Jain, "**ATM ABR Traffic Management: Our Recent Research Results**," A status report presentation to Rome Airforce Lab, Rome, NY, May 1, 1998, <http://www.cse.wustl.edu/~jain/talks/ssci984.htm>
260. Raj Jain, "**Asynchronous Transfer Mode (ATM) and Competing Technologies for High-Speed Computer Networking**," Korea-U.S. Science and Technology Symposium on Computing and Telecommunications, Chicago, IL, April 23-25, 1998, http://www.cse.wustl.edu/~jain/talks/atm_kr.htm
261. Raj Jain, "**Recent Trends in Networking Including ATM and Its Traffic Management**," IX International Computer Science Expo-Symposium on Global Interconnection Technologies, Mayab University, Merida, Mexico, April 3, 1998, http://www.cse.wustl.edu/~jain/talks/atm_mz.htm
262. Raj Jain, "**Traffic Management of Internet Protocols on ATM Network**," Carnegie Mellon University, March 16, 1998, http://www.cse.wustl.edu/~jain/talks/cong_cm.htm
263. Raj Jain, "**Voice and Telephony over ATM: Status**," US Army CECOM, Fort Monmouth, NJ, March 19, 1998, <http://www.cse.wustl.edu/~jain/talks/vtoa398.htm>
264. Raj Jain, "**IP over SONET**," Nortel, Canada, March 13, 1998, <http://www.cse.wustl.edu/~jain/talks/ipsonet.htm>
265. Raj Jain, "**Current Issues in ATM Forum Traffic Management Group**," Nortel, Canada, March 13, 1998, http://www.cse.wustl.edu/~jain/talks/tm_issu.htm
266. Raj Jain, "**Issues in Traffic Management on Satellite ATM Networks**," Center for Satellite and Hybrid Communication Networks' Advanced Networks Colloquium Series, University of Maryland, College Park, MD, February 27, 1998, http://www.cse.wustl.edu/~jain/talks/cong_um.htm
267. Raj Jain, "**Wireless Local Area Networks: Recent Developments**," Wireless Seminar Series, Electrical and Computer Engineering Department, Ohio State University, February 19, 1998, http://www.cse.wustl.edu/~jain/talks/ee_wir.htm
268. Raj Jain, "**Guaranteed Frame Rate (GFR) Service: Recent Issues**," Nortel, Canada, Jan 16, 1998, <http://www.cse.wustl.edu/~jain/talks/gfr.htm>
269. Raj Jain, "**Gigabit Ethernet: Architectural Design and Issues**," Nortel, Canada, Jan 16, 1998, <http://www.cse.wustl.edu/~jain/talks/gbether.htm>
270. Raj Jain, "**Traffic Management over Satellite ATM Networks: A Status Report**," TIA Satellite Communications Division (SCD) Communications Interoperability Subcommittee (CIS) meeting, Telecommunications Industries Association, Arlington, VA, January 13, 1998, <http://www.cse.wustl.edu/~jain/talks/nas9801.htm>
271. Raj Jain, "**Design Issues in Traffic Management for the ATM UBR+ Service for TCP over Satellite Networks**," Project proposal kickoff meeting, NASA Lewis Research Center, Cleveland, January 9, 1998, http://www.cse.wustl.edu/~jain/talks/nas_ubr.htm
272. Raj Jain, "**Recent Trends in Networking Including ATM and Its Traffic Management**," National University of Singapore, Singapore, December 3, 1997, Korea Telecom, Seoul, Korea, December 4, 1997, Samsung Electronics, Seoul, Korea, December 5, 1997, Seoul National University, Seoul, Korea, December 5, 1997, Indian Institute of Technology,

- Kanpur, India, December 8, 1997, and Indian Institute of Technology, Delhi, India, December 17, 1997, http://www.cse.wustl.edu/~jain/talks/atm_sg.htm
273. Raj Jain, "**ATM Networking and Telecommunications Research at OSU**," at the joint Faculty and Computing Facility Staff meeting of the Department of Computer and Information Science, The Ohio State University, Columbus, OH, November 20, 1997, <http://www.cse.wustl.edu/~jain/talks/iicf.htm>
 274. Raj Jain, "**Current Issues in ATM Traffic Management**," 8th Maryland Workshop on Very High-Speed Networks (VHSN'97), University of Maryland, Baltimore Campus, November 12-13, 1997, <http://www.cse.wustl.edu/~jain/talks/umbc.htm>
 275. Raj Jain, "**Trends in Networking Research**," at Collaboration and Visualization over the Network conference held at Wright State University, November 10, 1997, <http://www.cse.wustl.edu/~jain/talks/dayton.htm>
 276. Raj Jain, "**Networking Research At OSU**," To CIS 885 Class at Ohio State University, October 28, 1997, <http://www.cse.wustl.edu/~jain/talks/cis885.htm>
 277. Raj Jain, "**Multipoint ABR Connections over ATM-Recent Research Results**," Rome Airforce Laboratory, Rome, NY, October 22, 1997, <http://www.cse.wustl.edu/~jain/talks/ssci97a.htm>
 278. Raj Jain, "**Recent Advances in Networking Including ATM and Its Traffic Management**," Seventh International Symposium of Computing and Electronic Systems, Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Toluca, Mexico, October 17, 1997, http://www.cse.wustl.edu/~jain/talks/atm_mx.htm
 279. Raj Jain, "**Traffic Management over Satellite ATM Networks: Recent Issues**," Telecommunications Industries Association (TIA) Satellite Division Meeting, EIA Annual Conference, San Francisco, October 7, 1997, <http://www.cse.wustl.edu/~jain/talks/nasa979.htm>
 280. Raj Jain, "**Protocols for multimedia on the Internet**," Nortel, Canada, (October 1, 1997), http://www.cse.wustl.edu/~jain/talks/ip_mult.htm
 281. Raj Jain, "**A Survey of Scheduling Methods**," Nokia Research Center, Boston, MA, September 17, 1997, Bell-Northern Research/Northern Telecom, Ottawa, Canada, October 2, 1996, <http://www.cse.wustl.edu/~jain/talks/sched.htm>
 282. Raj Jain, "**Networking and Its Relationship to Education**," US Congress Internet Caucus, Capitol Hill, Washington, DC, September 10, 1997, http://www.cse.wustl.edu/~jain/talks/osc_wash.htm
 283. Raj Jain, "**Performance and Traffic Management of Internet Protocols on ATM Networks**," Microsoft, Redmond, WA, August 27, 1997, Also at Digital Equipment Corporation, Littleton, MA, November 22, 1996, Naval Research Laboratory, October 21, 1996, South-Western Bell, Austin, TX, September 30, 1996, http://www.cse.wustl.edu/~jain/talks/cong_ms.htm
 284. Raj Jain, "**ATM Networks: An Overview and Applications**," Columbus Industry and Technology Council, August 21, 1997, http://www.cse.wustl.edu/~jain/talks/atm_itc.htm

285. Raj Jain, "**VBR Voice over ATM: Analysis of Multiplexing Gain, and Effect of Scheduling & Drop Policies**," Southwestern Bell, Austin, TX, August 4, 1997, http://www.cse.wustl.edu/~jain/talks/voa_sbc.htm
286. Raj Jain, "**IP Switching: Issues and Alternatives**," Southwestern Bell, Austin, TX, August 4, 1997, and Nortel, Canada, July 25, 1997, <http://www.cse.wustl.edu/~jain/talks/ipsw.htm>
287. Raj Jain, "**ATM Traffic Management over Satellite Networks: Recent Issues**," TIA, July 15, 1997, <http://www.cse.wustl.edu/~jain/talks/nas9707.htm>
288. Raj Jain, "**Worst Case Buffer Requirements For TCP Over ABR**," a paper presentation at SICON'98, June 1998, http://www.cse.wustl.edu/~jain/talks/cong_sg.htm
289. Raj Jain, "**Voice over ATM-Simulation Results**," Presented at Systran Corporation, Dayton, OH, June 12, 1997, <http://www.cse.wustl.edu/~jain/talks/systrn2.htm>
290. Raj Jain, "**Performance Benchmarking of ATM Devices**," Nortel, Canada, May 16, 1997, Ascom Timeplex, Boston, MA, October 28, 1996, http://www.cse.wustl.edu/~jain/talks/perf_bnr.htm
291. Raj Jain, "**Multipoint Communication in Computer Networks**," Nortel, Canada, May 16, 1997, <http://www.cse.wustl.edu/~jain/talks/multipt.htm>
292. Raj Jain, "**Future of Intranet Technology**," Central Ohio Chapter of ACM, Symposium on Weblets at Work: The Impact of Intranet, Columbus, OH, May 2, 1997, <http://www.cse.wustl.edu/~jain/talks/intrant.htm>
293. Raj Jain, "**Real-Time ABR, MPEG2 Streams over VBR, and Virtual Source/Virtual Destination**," A status report presentation to Rome Airforce Lab, Rome, NY, April 1997, <http://www.cse.wustl.edu/~jain/talks/ssci974.htm>
294. Raj Jain, "**Use of Virtual Source and Virtual Destinations in Satellite Links**," TIA/SCD/CIS ATM over Satellite Meeting, Columbus, OH, March 26, 1997
295. Raj Jain, "**Performance of TCP over ABR with self-similar video background traffic over terrestrial and satellite networks**," TIA/SCD/CIS TCP over Satellite Meeting, Cleveland, OH, January 30, 1997
296. Raj Jain, "**TCP/IP over ATM over Satellite Links**," TIA TCP over Satellite working group meeting, NASA/Lewis Research Center, Cleveland, OH, January 30, 1997, <http://www.cse.wustl.edu/~jain/talks/nasa9701.htm>
297. Raj Jain, "**Voice over ATM**," US ARMY, Monmouth, NJ, January 23, 1997, <http://www.cse.wustl.edu/~jain/talks/systran.htm>
298. Raj Jain, "**Performance and Traffic Management of Internet Protocols on ATM Networks**," Digital Equipment Corporation, Littleton, MA, November 22, 1996
299. Raj Jain, "**Networking Research at OSU**," To students of CIS885, November 20, 1996
300. Raj Jain, "**Traffic Management in ATM Networks over Satellite Links**," Lockheed Martin Telecommunications, San Jose, CA, November 15, 1996, http://www.cse.wustl.edu/~jain/talks/cng_lkh.htm
301. Raj Jain, "**Virtual Source/Virtual Destination: Design Issues**," Bell-Northern Research/Northern Telecom, Ottawa, Canada, November 11, 1996

302. Raj Jain, "**Is Real-Time Communication on Internet Possible?**" Presented during a panel discussion on Real-time Communication on the Internet is Realistic, at 1996 International Conference on Network Protocols (ICNP'96), October 29-November 1, 1996, Columbus, Ohio, <http://www.cse.wustl.edu/~jain/talks/icnp96p.htm>
303. Raj Jain, "**TCP/IP over UBR**," Cascade Communications, Boston, MA, October 28, 1996
304. Raj Jain, "**ATM Performance Benchmarking**," Ascom Timeplex, Boston, MA, October 28, 1996
305. Raj Jain, "**Performance and Traffic Management of Internet Protocols on ATM Networks**," Naval Research Laboratory, October 21, 1996
306. Raj Jain, "**Performance of TCP/IP Using ATM ABR and UBR Services over Satellite Networks**," Invited talk at IEEE Communication Society Workshop on Computer-Aided Modeling, Analysis and Design of Communication Links and Networks, Mclean, VA, October 20, 1996, http://www.cse.wustl.edu/~jain/talks/atm_sat2.htm.
307. Raj Jain, "**ATM Traffic Management: Unresolved Issues**," Rome Labs, Rome, NY, October 4, 1996, <http://www.cse.wustl.edu/~jain/talks/ssci.htm>
308. Raj Jain, "**Scheduling Algorithms**," Bell-Northern Research/Northern Telecom, Ottawa, Canada, October 2, 1996
309. Raj Jain, "**Performance and Traffic Management of Internet Protocols Over ATM Networks**," South-Western Bell, Austin, TX, September 30, 1996
310. Raj Jain, "**Which Service for TCP/IP over ATM Networks: ABR or UBR?**," Eleventh Annual Workshop on Computer Communications, Reston, VA, September 25-26, 1996, <http://www.cse.wustl.edu/~jain/talks/tccc96.htm>
311. Raj Jain, "**ATM Traffic Management**," BellSouth, Atlanta, GA, September 18, 1996
312. Raj Jain, "**ATM Traffic Management**," IEEE International Computer Performance and Dependability Symposium (IPDS'96), Urbana-Champaign, IL, September 4-6, 1996, <http://www.cse.wustl.edu/~jain/talks/ipds96.htm>
313. Raj Jain, "**Recent Advances in 100 Mbps Networking Technologies**," NASA Lewis Research Center, Cleveland, OH, August 28, 1996
314. Raj Jain, "**Virtual Local Area Networks**," NSF Computer Networking Workshop, Michigan State University, August 7, 1996
315. Raj Jain, "**Traffic Management in ATM Networks**," NSF Computer Networking Workshop, Michigan State University, August 7, 1996
316. Raj Jain, "**A Survey of Results on TCP/IP over ATM**," Nortel, Canada, August 7, 1996, http://www.cse.wustl.edu/~jain/talks/atm_tcp.htm
317. Raj Jain, "**Frame Level Performance Benchmarking of ATM**," 1996 ARPA Workshop on Wide-Area ATM Performance, University of Kansas, Lawrence, Kansas, June 19-20, 1996, http://www.cse.wustl.edu/~jain/talks/atm_perf.htm
318. Raj Jain, "**A Survey of ATM/ABR Switch Rate Allocation Algorithms**," Bell-Northern Research/Northern Telecom, Ottawa, Canada, June 4, 1996, <http://www.cse.wustl.edu/~jain/talks/switch.htm>

319. Raj Jain, "**TCP/IP over ATM**," TIA/SCD/CIS meeting, NASA Lewis Research Center, Cleveland, OH, May 29, 1996
320. Raj Jain, "**Traffic Management in ATM Networks**," Motorola, Phoenix, AZ, May 17, 1996, http://www.cse.wustl.edu/~jain/talks/cng_tut.htm
321. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," IEEE Electro'96, New York, May 1, 1996, <http://www.cse.wustl.edu/~jain/talks/netsem3.htm>
322. Raj Jain, "**ABR or UBR**," A presentation during the panel on Can the High-Speed networks be effectively controlled? IEEE INFCOM'96 conference, San Francisco, CA, March 27, 1996, http://www.cse.wustl.edu/~jain/talks/cng_inf.htm
323. Raj Jain, "**ATM Research at OSU**," invited seminar at Zeitnet, Santa Clara, CA, March 27, 1996
324. Raj Jain, "**High-Speed Networking: Issues and Trends**," IEEE Distinguished Visitor Lecture, University of Southern Florida, Tampa, FL, March 19, 1996
325. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," IEEE Distinguished Visitor Lecture, the University of Central Florida, Orlando, FL, March 19, 1996
326. Raj Jain, "**Common Mistakes and Games of Performance Analysis**," ACM Lecture, University of Tennessee, Knoxville, TN, February 28, 1996
327. Raj Jain, "**High-Speed Networking: Issues and Trends**," ACM Lecture, Vanderbilt University, Nashville, TN, February 28, 1996
328. Raj Jain, "**Gigabit Networking Standards: Fibre Channel and HIPPI**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, February 27, 1996, <http://www.cse.wustl.edu/~jain/talks/netsemc.htm>
329. Raj Jain, "**OCARNet: Ohio Computing and Communications ATM Research Network**," A funding proposal presentation to Ohio Board of Regents, February 22, 1996, <http://www.cse.wustl.edu/~jain/talks/obori.htm>
330. Raj Jain, "**Internet Protocol: The Next Generation**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, January 30, 1996, <http://www.cse.wustl.edu/~jain/talks/netsemb.htm>
331. Raj Jain, "**Recent Advances in All-Optical Networks**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, November 28, 1995, <http://www.cse.wustl.edu/~jain/talks/netsema.htm>
332. Raj Jain, "**Wireless Networking**," SPANN Laboratory Seminar Series, EE Dept, OSU, Columbus, OH, November 7, 1995, http://www.cse.wustl.edu/~jain/talks/wir_spn.htm
333. Raj Jain, "**Traffic Management in ATM Networks**," 6th Maryland Workshop on Very High-Speed Networks, Baltimore, MD, October 30-31, 1995
334. Raj Jain, "**100 Mbps Networking Technologies: 100BASE-Tx, 100VG-AnyLAN, FDDI**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, October 31, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem9.htm>
335. Raj Jain, "**Performance Benchmarking of ATM Switches**," Presentation at NetWorld+InterOp, Atlanta, GA, September 28, 1995

336. Raj Jain, "**Congestion Control in ATM Networks**," Presentation at NetWorld+InterOp, Atlanta, GA, September 28, 1995
337. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," Invited Seminar at Business School, Georgia State University, Atlanta, GA, September 27, 1995
338. Raj Jain, "**Congestion Control in ATM Networks**," Invited Seminar at School of Computer Science, Georgia Tech, Atlanta, GA, September 27, 1995
339. Raj Jain, "**Traffic Management in ATM Networks**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, September 19, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem8.htm>
340. Raj Jain, "**Congestion Control in ATM Networks**," Invited Seminar at NASA Lewis Research Center, Cleveland, OH, September 15, 1995
341. Raj Jain, "**Congestion Control in ATM Networks**," Satellite Interoperability Subcommittee Meeting, Cleveland, OH, September 14, 1995
342. Raj Jain, "**Congestion Control in ATM Networks: Recent Advances**," Invited Lecture at Bell Northern Research, Ottawa, Ontario, September 11, 1995
343. Raj Jain, "**Research and Teaching Applications of World Wide Web: A Case Study**," Ohio Aerospace Institute conference on Technology and New Ways of Teaching/Learning, Cleveland, OH, September 8-9, 1995. Gave the talk remotely over a video network, <http://www.cse.wustl.edu/~jain/talks/oai.htm>
344. Raj Jain, "**Congestion Control in ATM Networks**," Invited Lecture at Intel Communication Workshop, Portland, Oregon, August 15-16, 1995, http://www.cse.wustl.edu/~jain/talks/cng_mrl.htm.
345. Raj Jain, "**Networking Issues for Mobile Computing**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, July 25, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem7.htm>
346. Raj Jain, "**Wireless Data Networking-An Introduction**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, June 27, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem6.htm>
347. Raj Jain, "**Global Positioning Systems (GPS): Applications to Distributed Systems and Networks**," 3COM Corporation, June 13, 1995, <http://www.cse.wustl.edu/~jain/talks/gps.htm>
348. Raj Jain, "**Multimedia Networks-Advanced Issues**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, May 22, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem5.htm>
349. Raj Jain, "**ATM Networking**," Departmental Presentation in OSU's Annual Conference for Engineers and Architects, Columbus, OH, May 19, 1995
350. Raj Jain, "**Multimedia Networks-An Introduction**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, April 25, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem4.htm>

351. Raj Jain, "**ATM Networks – Advanced Concepts and Issues**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, Columbus, OH, March 28, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem3.htm>
352. Raj Jain, "**Congestion Control in ATM Networks**," Networld+Interop'95 General Conference, Las Vegas, NV, March 27-31, 1995
353. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," IEEE Chapter, Rochester, NY, March 15, 1995
354. Raj Jain, "**Common Mistakes and Games of Performance Analysis**," Rochester Institute of Technology, Rochester, NY, March 15, 1995
355. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," NASA Lewis Research Center, Cleveland, OH, March 13, 1995
356. Raj Jain, "**ATM Networks – An Overview**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, February 21, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem2.htm>
357. Raj Jain, "**Congestion Control in High-Speed Networks**," Mitsubishi Electric Research Labs, Cambridge, Mass, February 1, 1995
358. Raj Jain, "**High-Speed Networking: Issues and Challenges**," Recent Advances in Networking and Telecommunications Seminar Series, OSU, January 31, 1995, <http://www.cse.wustl.edu/~jain/talks/netsem1.htm>
359. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," Bell Northern Research, Ottawa, Canada, Distinguished Lecture, September 21, 1994
360. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," AT&T Columbus, Ohio, August 26, 1994
361. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," National Institute of Science and Technology (NIST), Gaithersburg, MD, August 12, 1994
362. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," NSF Workshop on Networking, Michigan State University, East Lansing, Mich., August 5, 1994
363. Raj Jain, "**MegaATM: ATM Technology for Gigabit Networking**," NSF/DARPA Workshop on Gigabit Networking, Washington, DC, July 20-21, 1994, <http://www.cse.wustl.edu/~jain/talks/gigabit.htm>
364. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," University of Irvine, CA, July 18, 1994
365. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," IEEE Chapter, Dallas, TX, IEEE Distinguished Visitor, May 19th, 1994
366. Raj Jain, "**Congestion Control in ATM Networks**," Professor Y.C. Who's 60th Birth Anniversary Symposium, Harvard University, Cambridge, Mass., April 23, 1994
367. Raj Jain, "**Common Mistakes and Games of Performance Analysis**," Wayne State University, Detroit, Mich., ACM Lecture, April 6, 1994

368. Raj Jain, "**High-Speed Networking: Issues and Challenges**," the University of Michigan, Ann Arbor, MI, ACM Lecture, April 6, 1994,
http://www.cse.wustl.edu/~jain/talks/hi_spd.htm
369. Raj Jain, "**Myths about Congestion Control in High-Speed Networks**," ACM Chapter, Detroit, Mich., ACM Lecture, April 6, 1994
370. Raj Jain, "**ATM or FDDI?**," 4th Maryland Workshop on Very High-Speed Network, Baltimore, MD, March 15-17, 1993
371. Raj Jain, "**High-Speed Networking: Issues and Trends**," University of Saskatchewan, Saskatoon, Canada, Distinguished Lecture, February 1, 1993. Also at University of Regina, Regina, Canada, February 2, 1993, and at Ohio State University, Columbus, Ohio, ACM Lecture, April 7, 1993
372. Raj Jain, "**High-Speed Networking: Issues and Trends**," Keynote speech, 1992 IEEE Local Computer Networking Conference (LCN'92), Minneapolis, MN, September 15, 1992
373. Raj Jain, "**Computer Benchmarking: Issues and Pitfalls**," Keynote speech, 6th International Conference on Modeling Techniques and Tools for Computer Performance Evaluation, Edinburgh, UK, September 18, 1992
374. Raj Jain, "**Computer Benchmarking: Issues and Pitfalls**," Dinner speech, Joint meeting of SPEC and GPC benchmarking groups, Littleton, MA, May 1992
375. Raj Jain, "**Computer Benchmarking: Games People Play**," Boston Computer Society, PC Technical User's Group meeting, January 8, 1992
376. Raj Jain, "**Common Mistakes and Games of Performance Analysis and Simulation**," A talk presented at:
- a. Old Dominion University, Norfolk, VA, Colloquium Series, April 21, 1993.
 - b. Dayton ACM Chapter, Dayton, OH, April 8, 1993
 - c. Wright State University, Dayton, OH, April 8, 1993
 - d. Central-Ohio ACM Chapter, Columbus, OH, April 7, 1993
 - e. The University of Wisconsin, Eau Claire, October 22, 1992
 - f. The University of Wisconsin, La Crosse, October 23, 1992
 - g. Winona State University, October 23, 1992
 - h. DEC Information Management Symposium (IMSYM'92), Colorado Springs, February 11, 1992.
 - i. Harvard University, November 18, 1991.
 - j. Boston University, Metropolitan College, Faculty Meeting, October 19, 1991.
 - k. DEC Information Management Symposium (IMSYM'91), Seefeld, Austria, October 8, 1991.
 - l. AT_&T Bell Laboratories, Holmdel, NJ, September 17, 1991
 - m. University of Pennsylvania, Philadelphia, PA, April 23, 1991.
 - n. Worcester Polytechnic Institute, April 19, 1991.
 - o. Washington University, St. Louis, April 5, 1991.

- p. Joint IEEE/Boston and ACM/Boston Meeting, March 21, 1991.
377. Raj Jain, "**Myths About Congestion Control in High-Speed Networks**," Workshop on Very High-Speed Networking Workshop, Greenbelt, MD, March 5, 1990
 378. Raj Jain, "**Myths About Congestion Control in High-Speed Networks**," High-Speed Networking Workshop, Cambridge, MA, January 25, 1990, described in Craig Partridge, Ed., Workshop Report Internet Research Steering Group Workshop on Very-High-Speed Networks, IETF RFC 1152, April 1990.
 379. Raj Jain, "**Congestion Control-Trends _& Issues**," an invited seminar at AT_&T Bell Laboratories, Murray Hill, NJ, July 1989
 380. Raj Jain, "**Congestion Control: Trends _& Issues**," 2nd IEEE Workshop on CAMAD of Communication Links and Networks, University of Massachusetts, Amherst, MA, October 14, 1988
 381. Raj Jain, "**Networking Performance Issues and Trends**," Interop'88, Santa Clara, CA, September 30, 1988
 382. Raj Jain, "**FDDI Performance: A Tutorial**," Networks and Communications Seminar Series, DEC/LKG, May 11, 1988
 383. Raj Jain, "**Congestion Control: Trends _& Issues**," TIMS/ORSA Joint National Meeting, Washington, D.C., April 26, 1988
 384. Raj Jain, "**Panel Session on Congestion Control**," Panel Organizer, 10th Data Communications Symposium, October 1987
 385. K. Ramakrishnan, and D. Chiu, "**Congestion Avoidance in Computer Networks with a Connectionless Network Layer**," Lower Layer SIG, NBS/OSI implementers Workshop, National Bureau of Standards, Washington, D.C., October 8, 1987
 386. Raj Jain, "**Networking Performance Issues and Trends**," George Washington University, October 10, 1987
 387. Raj Jain, "**FDDI Error Analysis**," ANSI X3T9 SMT meeting, June 23, 1987
 388. K. Ramakrishnan, and D. Chiu, "**Congestion Avoidance in Computer Networks with a Connectionless Network Layer**," Performance SIG, NBS/OSI implementers Workshop, National Bureau of Standards, Washington, D.C., May 6, 1987
 389. K. Ramakrishnan, and D. Chiu, "**Congestion Avoidance in Computer Networks with a Connectionless Network Layer**," Join Meeting of ISO Routing and ARPA INENG, Cambridge, MA, April 24, 1987
 390. Raj Jain, "**Performance Modeling of DNA**," Digital Networking Team Training, Westford, Mass., August 6, 1986
 391. Raj Jain, "**Flow and Congestion Control Techniques for Computer Networks**," Networks and Communications Seminar Series, LKG, June 4, 1986
 392. Raj Jain, "**High-Performance Networks**," at DEC-France, Valbonne, France, February 10, 1986
 393. Raj Jain, "**Packet Trains**," at Indian Institute of Technology, Bombay, India, January 4, 1986

394. Raj Jain, "**Packet Trains for Local Area Network Workload Characterization**," Stanford and U. C. Berkeley, Feb 4-5, 1985
395. Raj Jain, "**High-Performance Networks: New Approaches**," Networks and Communications Seminar Series, DEC, Tewksbury, September 18, 1985
396. Raj Jain, "**Analysis of Retransmission Timer Algorithms**," Massachusetts Institute of Technology, December 1983
397. Raj Jain, "**A Dynamic Window Scheme for Congestion Control in Computer Networks**," Harvard, Stanford, U. C. Berkeley, and MIT, February 1983
398. Raj Jain, "**VAX/VMS Image Accounting: Usage and Examples**," DECUS, October 20, 1983

Class Lectures and Handouts Cited by Others

1. Raj Jain, "**Wireless Personal Area Networks: Part II**," WUSTL class lecture, 2008, http://www.cse.wustl.edu/~jain/cse574-08/j_9pan.htm
2. Raj Jain, "**Radio Frequency Identification (RFID)**," WUSTL class lecture, 2006, http://www.cse.wustl.edu/~jain/cse574-06/j_irfid.htm
3. Raj Jain, "**Intrusion Detection Systems**," WUSTL class lecture, 2007, http://www.cse.wustl.edu/~jain/cse571-07/l_23ids.htm
4. Raj Jain, "**Hashes and Message Digests**," WUSTL class lecture, 2007, http://www.cse.wustl.edu/~jain/cse571-07/l_07hsh.htm
5. Raj Jain, "**Wireless Personal Area Networks (WPANs)**," WUSTL Class lecture, 2006, http://www.cse.wustl.edu/~jain/cse574-06/j_4pan.htm
6. Raj Jain, "**Ratio Games**," WUSTL class lecture, 2006, http://www.cse.wustl.edu/~jain/cse567-06/k_11rg.htm
7. Raj Jain, "**Wireless Data Networking**," Ohio State University class lecture, 2000, http://www.cse.wustl.edu/~jain/cis777-00/g_ewir.htm
8. Raj Jain, "**SONET**," Ohio State University class lecture, 2000, http://www.cse.wustl.edu/~jain/cis777-00/g_9snt.htm
9. Rakesh Arora, "**Voice over IP: Protocols and Standards**," Ohio State University Class Project Report, 1999, http://www.cse.wustl.edu/~jain/cis788-99/voip_protocols/index.html
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2. P802.3cw/D3, "**Draft Standard for Ethernet Amendment: Physical Layers and Management Parameters for 400 Gb/s Operation over DWDM systems**," December 19, 2023
3. P802.11be/D5, "**Draft Standard for Information technology— Telecommunications and information exchange between systems Local and metropolitan area networks— Specific requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment 8: Enhancements for extremely high throughput (EHT)**," January 2, 2024
4. P902.11-2020/Cor2/D1, "**Draft Standard for Information Technology— Telecommunications and Information Exchange between Systems— Local and Metropolitan Area Networks— Specific Requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Corrigendum 2: Correct the Number Assignment of the Information Identifier (ID) for Enhanced Broadcast Services (EBCS) element of the Access Network Query Protocol (ANQP)**," November 28, 2023
5. P802.1CS-2020/Cor1/D2.1, "**Draft Standard for Local and metropolitan area networks— Link-local Registration Protocol Corrigendum 1: Corrections to Management Modules and Protocol Encoding**," October 17, 2023

6. 802.1Qdj/D2, "**Draft Standard for Local and metropolitan area networks— Bridges and Bridged Networks Amendment 38: Configuration Enhancements for Time-Sensitive Networking**," November 18, 2023
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8. 802.1ASdn/D2, "**Draft Standard for Local and metropolitan area networks— Timing and Synchronization for Time-Sensitive Applications Amendment: YANG Data Model**," December 19, 2023
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15. Member of Sponsor Ballot, P802.3cy/D3.1, "**Standard for Ethernet Amendment 8: Physical Layer Specifications and Management Parameters for greater than 10 Gb/s Electrical Automotive Ethernet**," February 5, 2023
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18. Member of Sponsor Ballot, P802.11bc/D6.0, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Enhanced Broadcast Service**," January 13, 2023
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24. Member of Sponsor Ballot, P802.11bd/D8.0, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Enhancements for Next Generation V2X,**" October 14, 2022
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26. Member of Sponsor Ballot, P802.3db/D3.2, "**Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 100 Gb/s,200 Gb/s, and 400 Gb/s Operation over Optical Fiber using 100 Gb/s Signaling [-]"**, July 20, 2022
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