Curriculum Vitae



Dr. Raj Jain
Barbara H. and Jerome R. Cox, Jr., Professor
Computer Science and Engineering
Washington University in St. Louis
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Raj Jain is the 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, 110+ 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 **48,000+ 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 such as 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 more than 312 published 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 2026 IEEE 16th Annual Computing and Communication Workshop and Conference (CCWC), STL Cybercon Conference 2025, 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), Teradiant 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 the testing of networks. He is an active participant in several industry forums, including the Institute of Electrical and Electronics Engineers (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 are 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. **Best Paper Award**, Quantum Computing Category, for "Asynchronous Routing for Multipartite Entanglement in Quantum Networks," at the 2026 IEEE 16th Annual Computing and Communication Workshop and Conference, Las Vegas, NV, January 5-7, 2026, http://www.cse.wustl.edu/~jain/ftp/bpa_ccwc.pdf
2. **Outstanding Faculty Award** by the Graduate and Professional Student Council (GPSC), Washington University, April 21, 2025, http://www.cse.wustl.edu/~jain/ftp/gspc.pdf
3. **SmartNets 2024 Best Paper Award** for "HDRL-IDS: A Hybrid Deep Reinforcement Learning Intrusion Detection System for Enhancing the Security of Medical Applications in 5G Networks" at The 2024 International Conference on Smart Applications, Communications and Networking, Harrisonburg, VA, USA, May 28-30, 2024, http://www.cse.wustl.edu/~jain/ftp/smartnets.pdf
4. **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
5. **2018 James B. Eads Award** from the Academy of Science, Saint Louis, April 2018, https://www.academyofsciencestl.org/awards/
6. **ACM SIGCOMM Lifetime Achievement Award**, August 2017, https://www.sigcomm.org/awards/sigcomm-awards
7. **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.
8. **Barbara J. and Jerome R. Cox Jr. Chair**, Since May 24, 2016.
9. **A. A. Michelson Award**, Computer Measurement Group, November 2015, https://www.cmg.org/2015-a-a-michelson-award-announcement/

10. **Distinguished Alumnus Award**, Indian Institute of Science Alumni Association, September 2014
11. Finalist, "**Vodafone Wireless Innovation Project 2014**," April 2014, http://vodafone-us.com/wireless-innovation-project/past-competitions/2014/2014-finalists/
12. **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.
13. **CDAC-ACCS (**Center for Development of Advanced Computing-Applications of Computing and Communications Sciences) **2009 Foundation Award** 2009.
14. "**WiMAX Forum Individual Contribution Award**," in appreciation of leadership in driving the capacity planning tool for the Application Working Group, October 2008
15. "**ACM SIGCOMM Test of Time Paper Award**," 2006.
16. 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.
17. **Web of Science List of Highly Cited Researchers**, 2001
18. "**1999 siliconindia Leadership Award for Excellence and Promise in Business and Technology**," October 1999, San Jose, CA.
19. "**Lumley Engineering Research Award 1999**" from the Ohio State University College of Engineering.
20. 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
21. "**1996 Ohio State University College of Engineering Annual Research Accomplishment Award**," May 6, 1996.
22. **Ameritech Fellowship**, 1995.
23. **Fellow of ACM** for developing a new control-theoretic approach to computer systems modeling, October 1995
24. **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.
25. "**Best Advanced How-to Book, Systems**" award from Computer Press Association, 1991.
26. 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.
27. Nominated for the Ohio State University 2000 Distinguished Scholar Award, June 2000
28. Renominated for the Ohio State University 2001 Distinguished Scholar Award, June 2001
29. Nominated for the "**Technologist of the Year**" award from The Ohio Academy of Science, Columbus, OH, February 20, 1997.

30. 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. Raj Jain, "**Physical-Layer Aware Quantum Native Datacenter Networking**," Cisco University Research Program Gift CG# 98690499, $100,000, June 1, 2025-May 31, 2026.
2. Aiman Erbad, Mohamed Abdallah, Raj Jain, Sinan Al-Obaidi, Maryam Al-Madeed, "**Optimal Resource Allocation in the Next-Generation Quantum-Classical Computer Networks,**" Qatar National Research Fund, ARG02-0415-240191, $739,683=$591,747 (QU)+$147,936 (WUSTL), April 1, 2025-March 31, 2028.
3. Raj Jain, "**Quantum-Native Resource Management and Congestion Control for Quantum Networks**," Cisco University Research Program Gift CG# 92627757, $100,000, July 1, 2024-June 30, 2025.
4. Mounir Hamdi, Ala Al-fuqaha, Raj Jain, and Aiman Erbad, "**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.
5. Raj Jain, "**Quantum Native Routing**," Cisco University Research Program Gift, $100,000, April 1, 2023-March 31, 2024.
6. 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.
7. 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)+$189,00 (WUSTL), January 22, 2018-January 21, 2021

8. 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
9. 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.
10. Raj Jain, "**Mobile Multi-Cloud Application Delivery**," Futurewei Corporation, Gift, $95,000, December 2015.
11. 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
12. Raj Jain, Elisa Bertino, Arjan Durresi, "**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
13. Raj Jain, "**AppFabric: Application Deployment and Service Chaining in Future NFV Cloud, WAN Environments**," Cisco University Research Program Gift, $152,925, January 2015.
14. Raj Jain, "**OpenADN: Application Delivery in a Global Multi-Cloud Environment using SDN**," Broadcom Foundation Gift, $25,000, Nov 1, 2014- Oct 31, 2015.
15. 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.
16. Raj Jain, "**OpenADN: Application Delivery in a Global Multi-Cloud Environment using SDN**," Broadcom Foundation, $25,000, Nov 1, 2013- Oct 31, 2014.
17. 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.
18. 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.
19. Raj Jain, "**openSDN-A Service Delivery Network Architecture**," Cisco University Research Program Gift, $50,000, January 2, 2012-December 31, 2012.
20. 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.
21. 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.
22. 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.

23. Raj Jain, "**Internet 3.0: Architecture for Next Generation Internet**," Intel Corporation Gift, $60k, December 2009
24. Raj Jain, "**Internet 3.0: Architecture for Next Generation Internet**," Huawei Technologies Gift, $30k, November 2008-March 2009.
25. Raj Jain, "**Internet 3.0: Architecture for Next Generation Internet**," Intel Corporation Gift, $60k, May 2008-April 2009.
26. Raj Jain, "**WiMAX Modeling**," WiMAX Forum, $50k, Jan 2008-December 2008.
27. Raj Jain, "**Internet 3.0: Architecture for Next Generation Internet**," Intel Corporation Gift, $65k, April 2007-March 2008.
28. Raj Jain, "**WiMAX Modeling**," WiMAX Forum, $70k, June 2007-December 2007.
29. Raj Jain, "**WiMAX Modeling**," WiMAX Forum, $70k, December 2006-May 2007.
30. Raj Jain, "**Traffic Management in IP Networks**," National Science Foundation, $360,000, October 1, 2000-September 31, 2003.
31. Raj Jain, Unrestricted donation of $10,000 from PMC-Sierra, San Jose, CA, December 1999.
32. M. Atiquzzaman, Raj Jain, "**QoS over Satellite Networks**," NASA, $130,000, October 1999-September 2000.
33. 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.
34. 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
35. 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 the National Science Foundation, Summer 1999.
36. 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.
37. Raj Jain, "**Multimedia over ATM Networks**," Ameritech Foundation, $21,174, October 1, 1996, to September 30, 1997
38. 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
39. 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
40. 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.

41. 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
42. Raj Jain, "**Congestion Avoidance in High-Speed Networks**," National Science Foundation (NSF), $375,000, September 1, 1996, to August 30, 2000
43. 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
44. 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
45. 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
46. Raj Jain, "**Multimedia over ATM Networks**," Ameritech Fellowship, Ohio State University, $29,674, May 15, 1995-May 14, 1996.
47. Raj Jain, Unrestricted donation of $75,000 from FORE Systems for research on ATM networks.
48. Raj Jain, Unrestricted donation of $42,425 from AdTech Electronics Engineering for research on ATM performance testing.
49. 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.
50. Raj Jain, Unrestricted donation of $25,000, Cascade Communications Corp., December 1, 1995.
51. Raj Jain, Unrestricted donation of $25,000 from Intel Corp., February 1995.
52. Raj Jain, Unrestricted donation of $25,000 from StrataCom, Inc, January 1995.
53. Raj Jain, Donation of $10,000 from AT&T Columbus for Networking and Telecommunications Seminars, December 1994.

PROFESSIONAL ACTIVITIES

Keynote Speaker

1. Raj Jain, "**Quantum Networking: Challenges and Research Opportunities**," Keynote at the 2026 IEEE 16th Annual Computing and Communication Workshop and Conference (CCWC), 6 January 2026, Las Vegas, NV, USA, http://www.cse.wustl.edu/~jain/talks/qnt_ccwc.htm
2. Raj Jain, "**Recent Advances, Issues, and Challenges in Cybersecurity**," Keynote at the STL Cybercon Conference, University of Missouri, St. Louis, Nov. 14, 5, http://www.cse.wustl.edu/~jain/talks/stlcyber.htm
3. 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.

4. 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/
5. 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
6. Raj Jain, "**Quantum-Blockchains**," Keynote at International Symposium on Blockchain Advancements, Singapore, Dec 2, 2022, https://isba.global/speakers
7. Raj Jain, "**Common Issues and Challenges in AI for Cybersecurity**," Keynote at International Conference on Data Science and Information Systems (ICDSIS 2022), Dubai, October 20, 2022
8. Raj Jain, "**AI for IoT and Security: Issues and Challenges**," Keynote at IEEE World AI IoT Congress 2022 (AIIoT 2022), Seattle, WA, June 6, 2022
9. Keynote Speaker, "**Extending Blockchains with AI for Risk Management**," The International Scientific Forum FIT-M 2021, Moscow, December 16-18, 2021
10. 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
11. 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
12. 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/
13. Keynote Speaker, "**Extending Blockchains with AI for Risk Management**," IEEE Blockchain Conference 2020, November 4, 2020.
14. Keynote Speaker, "**Extending Blockchains for Risk Management**," the 2nd International Conference on Blockchain Technology (ICBCT), Hawaii, March 13, 2020.
15. 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
16. 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
17. 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/
18. 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
19. 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/

20. 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/
21. 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
22. 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
23. 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
24. 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
25. 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,
26. 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
27. Keynote Speaker, "**Unmanned Aerial Systems: Networking Applications, Challenges, and Issues**," Midwest Drone Introduction, St. Louis, MO, October 15, 2016
28. 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
29. 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/
30. 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
31. 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/
32. 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
33. Keynote Speaker, "**Internet of Things: Research Challenges and Issues**," Internet of Things World Forum, Research and Innovation Symposium, Dubai, December 5-6, 2015

34. 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/
35. IEEE CS Keynote Speaker, "**Internet of Things: Challenges and Issues**," 20th Annual International Conference on Advanced Computing and Communications (ADCOM) 2014, Bangalore, India, September 19, 2014, http://accsindia.org/accs-adcom-2014-keyspeakers.html
36. Keynote Speaker, "**Virtualization and Software Defined Networking (SDN) for Mobile Carriers**," WoWMom 2014, Sydney, Australia, June 18, 2014
37. 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
38. 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
39. 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.
40. Keynote Speaker, "**IEEE International Conference on Communications (ICC 2012)**," Ottawa, Canada, June 10-15, 2012
41. Qualcomm Distinguished Lecture, "**International Conference on Computing, Networking and Communications (ICNC 2012)**," Maui, Hawaii, 30 Jan-2 Feb 2012.
42. Inaugural and Keynote Speaker, "**International Conference on Advanced Computing, Networking, and Security (ADCONS) 2011**," National Institute of Technology Karnataka, Mangalore, India, December 17, 2011
43. Keynote Speaker, "**XXIX Brazilian Symposium on Computer Networks and Distributed Systems**," May 30-June 3, 2011, Campo Grande, Mato Grosso do Sul, Brazil.
44. Inaugural Speaker, "**3rd International Conference on Communication Systems and Networks (COMSNETS 2011)**," Bangalore, India, January 4-11, 2011.
45. Keynote Speaker, "**4th IEEE International Symposium on Advanced Networks and Telecommunication Systems (ANTS 2010)**," Mumbai, India, December 16-18, 2010.
46. Keynote Speaker, "**International Conference on Models of Information and Communication Systems (MICS 2010)**," Rabat, Morocco, November 2-4, 2010.
47. 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
48. Keynote Speaker, "**12th International Conference on Network-Based Information Systems (NBiS 2009),"** Indianapolis, IN, Aug 19-21, 2009.
49. 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.

50. Keynote Speaker, "**16th IEEE International Conference on Networks (ICON) 2008**," New Delhi, India, December 12-14, 2008.
51. Keynote Speaker, "**ACM International Conference on Multimedia 2008**," Vancouver, BC, Canada, October 27 – 31, 2008.
52. Keynote Speaker, "**International Conference on Communication, Convergence, and Broadband Networking (ICCBN) 2008**," Bangalore, India, July 17-20, 2008.
53. Keynote Speaker, "**International Conference on Computer and Communications Engineering (ICCCE 2008**)," Kuala Lumpur, Malaysia, May 13-15, 2008**.**
54. Keynote Speaker, "**Second International Conference on Access Networks (AccessNets 2007**)," Ottawa, Ontario, Canada, August 23-24, 2007
55. Keynote Speaker, "**11th IEEE International Conference on Parallel and Distributed Systems (ICPADS-2005),**" Fukuoka, Japan, July 20-22, 2005
56. Keynote Speaker, "**IEEE Local Computer Networking Conference 2004 (LCN04)**," Tampa, FL, November 18, 2004.
57. Keynote Speaker, "**2004 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS'04)**," San Jose, CA, July 25-29, 2004.
58. Keynote Speaker, "**Concord Users Group Conference**," Scottsdale, AZ, April 8-10, 2002.
59. Keynote Speaker, "**Opnetwork 2001**," Washington, DC, August 27-31, 2001.
60. Keynote Speaker, "**NREN Gigabit Networking Workshop**," Moffett Field, CA, August 14-16, 2000.
61. Keynote Speaker, "**2000 Summer Computer Simulation Conference SCSC 2000 and SPECTS 2000**," Vancouver, BC, Canada, July 16-20, 2000.
62. Keynote Speaker, "**International Conference on High-Performance Computing (HiPC'98)**," Chennai (Madras), India, December 19, 1998.
63. Keynote Speaker, "**ATM: Technology, Standards, Trials and Applications 1994**," Vancouver, Canada
64. Keynote Speaker, "**Gigabit Networks- Key to Information Superhighway**," 1994.
65. Keynote Speaker, "**IEEE Local Computer Networking Conference**," Minneapolis, MN, September 15, 1992.
66. 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.iariajournals.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 (IJCNDS)**," 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 Systems' 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 - present, 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, Teradiant 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 of the 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 Steering Committee, "**The Eighteenth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2026)**," September 27, 2206-October 01, 2026 - Barcelona, Spain, https://www.iaria.org/conferences2026/ComEMERGING26.html
2. Panel member, **AI and Quantum-Driven Innovations for Secure Networks**, at IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), December 17, 2025, http://www.cse.wustl.edu/~jain/talks/ants25_rj.htm
3. Member of the Steering Committee, "**The Seventeenth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2025)**," September 28, 2025 to October 02, 2025 – Lisbon, Portugal, https://www.iaria.org/conferences2025/ComEMERGING25.html
4. Member of the Steering Committee, "**The Sixteenth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2024)**," September 29, 2024 to October 03, 2024 - Barcelona, Spain, https://www.iaria.org/conferences2024/EMERGING24.html
5. Member of the Steering Committee, "**The Fifteenth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2023)**," September 25, 2023, to September 29, 2023, Porto, Portugal, https://www.iaria.org/conferences2023/ComEMERGING23.html
6. 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
7. Member of the Steering Committee, "**The Fourteenth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2022)**," November 12, 2022, to November 17, 2022, Valencia, Spain, https://www.iaria.org/conferences2022/ComEMERGING22.htm
8. 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.iaria.org/conferences2021/ComEMERGING21.html

9. 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/
10. Honorary Conference General Chair, "**The Fourth International Conference on Computing and Network Communications (CoCoNet'20)**," Chennai, India, October 14-17, 2020.
11. 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.iaria.org/conferences2020/ComEMERGING20.html
12. 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
13. 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
14. Member of the Technical Program Committee, "**Fourth International Conference on Contemporary Computing and Informatics**," Singapore, December 12-14, 2019
15. 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.iaria.org/conferences2019/ComEMERGING19.html
16. 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.iaria.org/conferences2019/ComICIW19.html
17. 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
18. 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
19. Member of the International Advisory Committee, "**2nd International Conference on Advanced Computing and Software Engineering (ICACSE 2019)**," Sultanpur, India, Feb. 8-9, 2019
20. 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
21. 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
22. 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

23. 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.iaria.org/conferences2018/ComEMERGING18.html

24. Member of the Technical Program Committee, "**Third International Conference on Contemporary Computing and Informatics (IC3I)**," October 10-12, 2018, Delhi, India.

25. 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

26. Member of the Program Committee, "The 1st workshop on Energy Efficient Machine Learning and Cognitive Computing for Embedded Applications (EMC^2)," Williamsburg, VA, Mar. 25, 2018, https://sites.google.com/view/asplos-emc2/committees

27. Member of the Advisory Board, "**4th International Conference** on **Recent Advances in Information Technology (RAIT-2018)**," 15-17 March 2018, Dhanbad, India.

28. Member of the advisory team, "**1st International Conference on Data, Engineering & Applications (IDEA 2017)**," Bhopal, India, December 28-29, 2017.

29. 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/

30. 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

31. 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/

32. 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

33. 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

34. Member of the Technical Program Committee, "**International Conference on Computing and Communication Technologies for Smart Nation (IC3TSN)**," February 16-18, 2017, Gurgaon, India

35. Member of the Advisory Committee, "**International Conference on Computing Analytics and Networking (ICCAN 2017)**," December 13-16, 2016, Bhubaneswar, India.

36. 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/

37. Member of the Advisory Board, "**International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2016)**," 21-23 December 2016, Bhubaneswar, India

38. Member of the Technical Program Committee, "**2nd International Conference on Contemporary Computing and Informatics (IC3I)**," December 14-17, 2017, Noida, India

39. 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.

40. 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

41. 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

42. 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.iaria.org/conferences2016/ComEMERGING16.html

43. Tutorial Chair, "**ACM SIGCOMM 2016**," Salvador, Brazil, August 22-26, 2016, http://conferences.sigcomm.org/sigcomm/2016/organization.php

44. Member of Technical Program Committee, "**The Eleventh International Conference on Systems and Networks Communications (ICSNC 2016)**," Brussels, Belgium, August 21-25, 2016, http://www.iaria.org/conferences2016/ComICSNC16.html

45. Member of the Steering Committee, "**2nd International Conference on Applied and Theoretical Computing and Communication Technology (iCATccT 2016)**," Bangalore, India, July 21-23, 2016

46. 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

47. 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.iaria.org/conferences2016/ComICIW16.html

48. 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

49. Member of the Program Committee, "**2016 International Conference on Internet of Things and Cloud Computing (ICC 2016)**," Cambridge, UK, March 22-23, 2016.

50. Member of the Advisory Committee, "**3rd International Conference on Recent Advances in Information Technology 2016 (RAIT-2016)**," Dhanbad, India, March 3-5, 2016

51. 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.iaria.org/conferences2016/ComCTRQ16.html

52. Member of the Technical Program Committee, "**The Fifteenth International Conference on Networks (ICN 2016)**," February 21-25, 2016 - Lisbon, Portugal, http://www.iaria.org/conferences2016/ComICN16.html

53. Member of the Review Group, "**3rd International Conference on Transformation in Engineering Education (ICTIEE 2016)**," Pune, India, January 8-10, 2016

54. Member of the Advisory Committee, "**Indo-US International Workshop on Large Scale Complex Network Analysis**," Kolkata, December 19-20, 2015

55. 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

56. Member of the Advisory Committee, "**International Conference on Computational Intelligence in Data Mining (ICCIDM 2015)**," Bhubaneshwar, India, December 5-6, 2015

57. Member of Technical Program Committee, "**The Tenth International Conference on Systems and Networks Communications (ICSNC 2015)**," Barcelona, Spain, November 15-20, 2015, http://www.iaria.org/conferences2015/ComICSNC15.html

58. Member of the Steering Committee, "**International Conference on Applied and Theoretical Computing and Communication Technology (iCATccT 2015)**," Davangere, India, October 29-31, 2015

59. 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

60. Member of the Advisory Board, "**International Conference on Signal, Networks, Computing, and Systems (ICSNCS-2015)**," New Delhi, India, September 9-11, 2015

61. Member of the Technical Program Committee, "**12th International Conference on Wireless and Optical Communications Networks (WOCN 2015)**," Bangalore, India, September 9-11, 2015.

62. Member of the Organizing Committee, "**Global Cloud Computing Conference**," Philadelphia, PA, August 10-12, 2015.

63. 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.iaria.org/conferences2015/ComEMERGING15.html

64. Member of the Advisory Board, "**3rd International Conference on Advanced Computing, Networking, and Informatics (ICACNI-2015)**," Orissa, India, 23-25 June 2015.

65. 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.iaria.org/conferences2015/ComICIW15.html

66. 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.iaria.org/conferences2015/ComCTRQ15.html

67. Member of the Technical Program Committee, "**The Fourteenth International Conference on Networks (ICN 2015)**," Barcelona, Spain, April 19-24, 2015, http://www.iaria.org/conferences2015/ComICN15.html

68. 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

69. Member of the International Advisory Board, "**2nd International Conference on Electronics and Computing Technologies (ICONECT15)**," Thane, India, 12-13 March 2015

70. 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

71. Member of the Review Group, "**2nd International Conference on Transformation in Engineering Education (ICTIEE 2015)**," Bangalore, India, January 5-8, 2015

72. Member of the Technical Program Committee, "**IEEE International Conference on Contemporary Computing and Informatics**," Mysore, India, 27-29 November 2014.

73. 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

74. Member of the Program Committee, "**11th International Conference on Wireless and Optical Communications Networks (WOCN 2014)**," Vijayawada, India, September 11-13, 2014.

75. Member of the Program Committee, "**11th International Conference on Wireless Information Networks and Systems (WINSYS 2014)**," Vienna, Austria, August 28-30, 2014.

76. Member of the Technical Committee, "**Science and Information Conference 2014 (SAI 2014)**," London, UK, August 27-29, 2014.

77. 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

78. Member of Technical Program Committee, "**First International Conference on Networks & Soft Computing (ICNSC 2014)**," Guntur, AP, India, August 19-20, 2014

79. Member of the Program Committee, "**The Ninth International Conference on Internet and Web Applications and Services (ICIW 2014)**," Paris, France, July 20 - 24, 2014

80. 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

81. Member of the Advisory Board, "**2nd International Conference on Advanced Computing, Networking, and Informatics (ICACNI-2014)**," Kolkata, India, June 24-26, 2014.

82. Member of the Content Advisory Team, "**The Indian Entrepreneur Conference (TiECON 2014)**," Santa Clara, CA, May 15-16, 2014

83. Member of the Technical Program Committee, "**3rd IEEE International Workshop on Opportunistic Networking (WON 2014)**," Victoria, BC, May 13-16, 2014

84. 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

85. Member of the Advisory Committee, "**International Conference on innovations in Computer, Communication, and Control technologies**," Kumaracoil, India, April 2014.

86. Member of the Advisory Committee, "**2nd International Conference on Recent Advances in Information Technology 2014 (RAIT-2014)**," Dhanbad, India, March 13-15, 2014

87. Member of International Advisory Committee, "**Innovation in Computer Technology and Communication (NCICTC'14)**," Coimbatore, India, Feb 28, 2014.

88. 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

89. 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

90. 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/

91. Member of the Program Committee (CS Track), "**International Conference on Mathematics and Computing 2013 (ICMC 2013)**," Haldia, India, December 26-29, 2013.

92. Member of the Program Committee, "**The 2nd Networking and Communications 2013 workshop**," Jeju Island, Korea, December 11-13, 2013.

93. Member of the Program Committee, "**The 2nd Mobile and Wireless 2013 workshop**," Jeju Island, Korea, December 11-13, 2013.

94. 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

95. Member of the Technical Committee, "**Science and Information Conference (SAI 2013)**," London, UK, October 7-9, 2013.

96. 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, 2018, 2013, http://www.iaria.org/conferences2013/ComEMERGING13.html

97. Member of the Program Committee, "**The 4th International Conference on Mobile, Ubiquitous, and Intelligent Computing (MUSIC-13)**," Gwangju, Korea, Sep 4-6, 2013

98. Member of the Program Committee, "**2nd International Conference on Advances in Computing, Communications and Informatics (ICACCI-2013)**," Mysore, India, on August 22-25, 2013

99. Member of the Program Committee, "**10th International Conference on Wireless Information Networks and Systems (WINSYS 2013)**," Reykjavik, Iceland, July 29-31, 2013.

100. Member of Technical Program Committee, "**4th International Conference on Data Communication Networking (DCNET 2013)**," Reykjavik, Iceland, 29-31 July 2013, http://www.dcnet.icete.org/ProgramCommittee.aspx?y=2013

101. 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

102. 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

103. 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

104. Conference Program Co-Chair, "**MASAUM International Conference on Computer Science 2013(MIC-CS'13)**," Kuala Lumpur, Malaysia, March 29-31, 2013

105. 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

106. Member of the Advisory Committee, **"International Conference on Computing, Communication, and Network (ICCCN 2013)**," Chennai Institute of Technology, Chennai, India, March 15-17th, 2013.

107. 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/

108. 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

109. 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

110. Conference Program Co-Chair, "**MASAUM International Conference on Information Technology 2013 (MIC-IT '13)**," Dubai, UAE, Jan 1-3, 2013

111. 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.

112. 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/eproceedings/csws/organization.pdf

113. 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

114. Member of the Technical Program Committee, "**MASAUM International Conference on Computer Science 2012 (MIC-CS'12)**," Kuala Lumpur, Malaysia, October 26-28, 2012.

115. 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.

116. 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.iaria.org/conferences2012/ComEMERGING12.html

117. Member of the Technical Program Committee, "**2012 Ninth International Conference on Wireless and Optical Communications Networks - (WOCN 2012),"** Indore, India, September 20-22, 2012.

118. Member of the Technical Program Committee, "**2012 International Conference on Computer, Information and Telecommunication Systems (CITS 2012)**," Amman, Jordan. May 13-16, 2012.

119. 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.iaria.org/conferences2012/MOPAS12.html

120. 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.iaria.org/conferences2012/ComCTRQ12.html

121. Member of the Program Committee, "**Mosharaka International Conference on Communications and Signal Processing (MIC-CSP 2012)**," Barcelona, Spain, 6-8 April 2012.

122. Advisory Chair, "**8th International Workshop on Heterogeneous Wireless Networks (HWISE 2012),"** Fukuoka, Japan, March 26-29, 2012.

123. Member of the Advisory Board, "**1st International Conference on Recent Advances in Information Technologies (RAIT 2012)**," Dhanbad, India, March 15-17, 2012

124. 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

125. Member of the Technical Program Committee, "**Energy in Communication, Information, and Cyber-physical Systems (E6)**," COMSNETS Workshop, Bangalore, India, January 4, 2012

126. Member of the Program Committee, "**International Conference on IT Convergence and Security (ICITCS 2011)**," Suwon, Korea, December 14-16, 2011

127. Member of the Program Committee, "**The Third International Conference on Emerging Network Intelligence (EMERGING 2011)**," November 20-25, 2011, Lisbon, Portugal, http://www.iaria.org/conferences2011/ComEMERGING11.html

128. Technical Program Co-Chair, "**Asian Himalayas International Conference on Internet (AH-ICI2011)**," November 4-6, 2011, Kathmandu, Nepal.

129. Member of the Program Committee, "**The Fifteenth IEEE International EDOC Conference (EDOC 2011)**," Helsinki, Finland, 29th August-2nd September 2011.

130. 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

131. 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/

132. Member of the Technical Program Committee, "**2011 Eighth International Conference on Wireless and Optical Communications Networks (WOCN 2011)**," Paris, France, May 24-26, 2011

133. 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.iaria.org/conferences2011/CTRQ11.html

134. 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.iaria.org/conferences2011/ComMOPAS11.html

135. Advisory Chair, "**7th International Workshop on Heterogeneous Wireless Networks (HWISE 2011),"** Biopolis, Singapore, March 22-25, 2011.

136. Member of the Technical Program Committee, "**25th International Conference on Advanced Information Networking and Applications (AINA 2011)**," Biopolis, Singapore, March 22-25, 2011

137. Conference Co-Chair and Cofounder, "**Broadband Access Communication Technologies V**," SPIE, San Francisco, CA, January 26-27, 2011

138. 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

139. Member of the Technical Program Committee, "**International Conference on Access Networks (AccessNets)**," Budapest, Hungary, November 3-5, 2010

140. Member of the International Program Committee, "**International Conference on Models of Information and Communication Systems (MICS'10)**," Rabat – Morocco, November 2-4, 2010.

141. Member of Program Committee, "**The Second International Conference on Emerging Network Intelligence (EMERGING 2010)**," October 25-30, 2010, Florence, Italy, http://www.iaria.org/conferences2010/EMERGING10.html

142. Member of the Program Committee, "**14th IEEE International EDOC Conference (EDOC 2010)**," 25-29 October 2010, Vitoria, ES, Brazil.

143. 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

144. 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.

145. 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

146. Member of the Program Committee, "**International Conference on Advanced Infocomm Technology 2010 (ICAIT 2010)**," 20-22 July 2010, Hainan, China.

147. 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.

148. 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

149. Member of the Program Committee, "**2010 ACS/IEEE International Conference on Computer Systems and Applications**," Hammamet, Tunisia, May 16-19th, 2010

150. Member of International Advisory Board, "**3rd International Conference on Computer and Communications Engineering (ICCCE 2010)**," May 11-13, 2010, Kuala Lumpur, Malaysia.

151. Member of The Program Committee, "**International Conference on Information Science and Applications (ICISA 2010)**," 21-23 April 2010, Seoul, Korea

152. Advisory Chair, "**6th International Workshop on Heterogeneous Wireless Networks (HWISE 2010),"** Perth, Australia, April 20-23, 2010.

153. Member of the Program Committee, "**IEEE 24th International Conference on Advanced Information Networking and Applications (AINA 2010)**," Perth, Australia, 20-23 April 2010

154. Member of the Advisory Committee, "**IEEE Conference on Control, Communication and Computing (ICCC 2010)**," Trivandrum, India, March 18-20, 2010.

155. Conference Co-Chair, "**Broadband Access Communication Technologies IV**," SPIE, Volume 7620, San Francisco, CA, January 27, 2010

156. Member of the International Advisory Committee, "**2009 IEEE 9th Malaysia International Conference on Communications (MICC 2009)**," 14-17 December 2009, Kuala Lumpur, Malaysia

157. Member of the Program Committee, "**17th International Conference on Advanced Computing and Communications (ADCOM 2009)**," Bangalore, India, December 14-17, 2009.

158. Technical Program Co-Chair, "**First Asian Himalayas International Conference on Internet (AH-ICI) 2009**," November 3-5, 2009, Kathmandu, Nepal.

159. Member of the Program Committee, "**7th International Workshop on Design of Reliable Communications Networks (DRCN 2009)**," October 25-28, 2009, Washington, DC.

160. Member of Technical Program Committee, "**First International Conference on Future Information Networks (ICFIN 2009)**," Beijing, China, Oct. 14-17, 2009

161. 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.

162. 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

163. Member of the Technical Program Committee, "**First International Conference on Ad Hoc Networks**," September 23-25, 2009, Niagara Falls, Ontario, Canada

164. 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

165. Member of the Program Committee, "**Thirteenth IEEE International EDOC Conference (EDOC 2009)**," Auckland, New Zealand, 31 August-4 September 2009

166. 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

167. Member of the Technical Program Committee, "**International Conference On Advanced Infocomm Technology (ICAIT) 2009**," Xi'an, China, 7-9 July 2009

168. 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.

169. Member of the Program Committee, "**International Conference on Wireless Information Networks and Systems (WINSYS 2009)**," Milan, Italy, July 7-10, 2009.

170. Member of the Program Committee, "**4th Workshop on Hot Topics on Autonomic Computing, (HotAC IV),**" June 15, 2009, Barcelona, Spain

171. Advisory Chair, "**5th International Workshop on Heterogeneous Wireless Networks (HWISE 2009),"** Bradford, UK, May 26-29, 2009.

172. Member of the Technical Program Committee, "**7th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-2009)**," Rabat, Morocco, May 2009

173. 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

174. Member of the Technical Program Committee, "**NetEval 2009 – The First Workshop on Performance Evaluation of Next-Generation Networks**," April 26, 2009, Boston, MA, USA

175. Conference Co-Chair, "**Broadband Access Communication Technologies III**," SPIE, Volume 7234, San Jose, CA, January 28-29, 2009

176. Member of the Technical Program Committee, "**Workshop on Wireless IP Communication (WIPcom)**," Bangalore, India, Jan 5-10, 2009

177. Member of the Technical Program Committee, "**2008 International Conference on Computer Intelligence and Security (CIS 2008)**," Suzhou SIP, China, December 13-17, 2008.

178. Member of the Technical Program Committee, "**2008 Third International Conference on Access Networks**," Las Vegas, Nevada, October 15-17, 2008

179. Member of the Technical Program Committee, "**2nd International Workshop on Broadband Wireless Internet Access (BWIA 2008)**," Avignon, France, October 12, 2008.

180. 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.

181. Member of the Technical Program Committee, "**The 12th IEEE International EDOC Conference (EDOC 2008)**," Munich, Germany, 15-19 September 2008

182. 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

183. Member of the Technical Program Committee, "**International Conference on Advanced Infocomm Technology (ICAIT) 2008**," Shenzhen, China, July 28-29, 2008

184. Conference General Chair and Co-Founder, "**International Conference on Convergence and Broadband Networking (ICCBN),"** Bangalore, India, July 18-22, 2008

185. Member of the International Advisory Committee, "**2nd International Conference on Computer and Communications Engineering (ICCCE'08**)", Kuala Lumpur, Malaysia, May 13-15, 2008.

186. Member of the Technical Program Committee, "**IEEE INFOCOM 2008 Conference on Computer Communications**," Phoenix, AZ, April 13-19, 2008.

187. Member of the International Program Committee, "**The Fifth IASTED Asian Conference on Communication Systems and Networks, (AsiaCSN 2008),**" Langkawi, Malaysia, April 2-4, 2008.

188. Advisory Chair, "**4th International Workshop on Heterogeneous Wireless Networks (HWISE 2008),"** Okinawa, Japan, March 25-28, 2008.

189. 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

190. Conference Co-Chair, "**Broadband Access Communication Technologies Conference**," Part of SPIE Photonics West Conference and Exhibition, San Jose, CA, January 22-23, 2008.

191. 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

192. Reviewer, "**IEEE/NIH BISTI 2007 Life Science Systems and Applications Workshop (LISSA 2007)**," Bethesda, MD, November 8-9, 2007.

193. Member of the Technical Program Committee, "**15th International IEEE Conference on Networking Protocols (ICNP 2007)**," Beijing, China, October 16-19, 2007.

194. Conference Co-Chair, "**Broadband Access Communication Technologies (IT404)**," Part of SPIE's International Symposium on Optics East 2007, Boston, MA, September 9-12, 2007.

195. 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.

196. 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.

197. Member of the program committee, "**2nd International Conference on Information Science and Security (ISS 2007)**," Seoul, Korea, May 23-26, 2007.

198. Advisory Chair, "**3rd International Workshop on Heterogeneous Wireless Networks (HWISE 2007),"** Niagara Falls, Canada, May 21-23, 2007.

199. Member of Program Committee, "**First International Workshop on Broadband and Wireless Computing, Communication and Applications (BWCCA-2006)**," Yogyakarta, Indonesia, 4-6 December 2006

200. 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

201. 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.

202. Member of Program Committee, "**8th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2006)**," Dallas, Texas, November 17-19, 2006

203. Member of Technical Program Committee, "**14th International IEEE Conference on Networking Protocols (ICNP 2006)**," Santa Barbara, CA, November 12-15, 2006.

204. Member of the Technical Program Committee, "**IEEE International Conference on e-Business Engineering**," October 24-26, Shanghai, China, October 24-26, 2006.

205. Conference Co-Chair, "**Broadband Access Communication Technologies (IT404)**," Part of SPIE's International Symposium on Optics East 2006, Boston, MA, October 1-4, 2006.

206. 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.

207. Member of the Technical Program Committee, "**14th IEEE International Conference on Networks (ICON 2006)**," Singapore, September 13-15, 2006.

208. 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.

209. Member of Technical Program Committee, "**International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS'06)**," Calgary, Canada, July 31-August 2, 2006.

210. Member of Technical Program Committee, "**International Conference on Telecommunications and Multimedia (TEMU 2006)**," Heraklion, Crete, Greece, July 5-7, 2006

211. Member of International Advisory Board, "**International Conference on Computer & Communication Engineering (ICCCE'06)**," Kuala Lumpur, Malaysia, May 9-11, 2006

212. Advisory Chair, "**Second IEEE International Workshop on Heterogeneous Wireless Sensor Networks (HWISE 2006)**," TU, Vienna, Austria, on April 18-20, 20061

213. Member of the Technical Program Committee, "**First International Conference on Software in Communications (SoftComms 2006),"** New Delhi, India, January 8-12, 2006

214. Member of the Technical Program Committee, "**Wireless Communications Symposium**," IEEE GlobeCom 2005, St. Louis, MO, November 28-December 2, 2005.

215. Member of the International Advisory Council, "**Telecom India 2005**," Mumbai, India, November 9-11, 2005.

216. 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.

217. Member of the Program Committee and Session Chair, "**Broadband Access Communications Technology (IT105)**," SPIE Conference, Boston, October 24-26, 2005.

218. 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.

219. 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

220. Member of the International Program Committee, "**The Fourth IASTED International Conference on Communication Systems and Networks (CSN 2005)**," Benidorm, Spain, September 12-14, 2005.

221. Member of the Advisory and Technical Committee, "**The First International Workshop on Heterogeneous Wireless Sensor Networks (HWISE 2005)**," July 20-22, 2005

222. Member of the Technical Program Committee, "**International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS05)**," Philadelphia, PA, July 2005.

223. Member of Technical Program Committee, "**IEEE Symposium on Optical Networking, ICC2005**," Seoul, Korea, May 16-20, 2005.

224. Member of the Technical Program Committee, "**Second IFIP International Conference on Wireless and Optical Communications Networks (WOCN 2005)**," Dubai, UAE, March 6-9, 2005.

225. 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

226. Member of the Technical Program Committee, "**International Conference on Networks (ICON 2004)**," Singapore, November 16-19, 2004.

227. Member of the Technical Program Committee, "**29th Annual IEEE Conference on Local Computer Networks (LCN 2004)**," Tampa, Florida, November 16-18, 2004.

228. Member of the Technical Program Committee, "**Optical Transmission Systems and Equipment for WDM Networking III (IT202)**," Philadelphia, PA, October 25-28, 2004.

229. 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

230. Member of the Technical Program Committee, "**IEEE Region 10 Infocom Colloquium on Broadband Access –Technology and Market**," Singapore, October 2004.

231. 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

232. Member of the Technical Program Committee, "**10th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS04)**," Toronto, Canada, May 25-28, 2004.

233. Member of the Technical Program Committee, "**International Conference on Communication and Broadband Networking (ICBN'04)**," Kobe, Japan, April 4-7, 2004.

234. Member of the Technical Program Committee, "**ICC 2004 Symposium on Optical Networking**," Paris, France, June 20-24, 2004.

235. Member of the Technical Program Committee, "**Second IFIP-TC6 International Conference on Optical Communications and Networks (ICOCN 2003)**," Bangalore, India, October 20-22, 2003.

236. 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

237. Member of the Technical Program Committee, "**11th IEEE International Conference on Networks (ICON 2003)**," Sydney, Australia, 28th September to 1st October 2003.

238. 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.

239. Co-Chair, Industry Watch Program, "**International Conference on Broadband Networking**," Bangalore, India, May 7, 2003

240. Member of the Technical Program Committee, "**Symposium on Optical Networking in IEEE International Conference on Communications (ICC03)**," Anchorage, Alaska, May 11-15, 2003

241. Member of the Technical Program Committee, "**First International Conference on Optical Communications and Networks (ICOCN 2002)**," Singapore, August 27-30, 2002.

242. Member of the Technical Program Committee, "**International Conference on Networking (ICON02)**," Singapore, August 27-August 30, 2002.

243. 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.

244. 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

245. Co-Chair, Industry Program, "**Optical Networking and Communications Conference**," Opticomm 2001, August 19-24, 2001, Denver, CO.

246. 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.

247. Member of Program Committee, "**2nd International Workshop on Quality of Future Internet Services organized by COST263," 24-26 September 2001,** Coimbra, Portugal.

248. Member of Program Committee, "**Global Internet 2000 Symposium at Globecom**," San Francisco, CA, November 27-December 1, 2000

249. Member of Program Committee, "**Ninth International Conference on Computer Communications and Networks (ICCCN2000)**," October 16-18, 2000, Las Vegas, Nevada.

250. Member of the International Program Committee, "**2nd International ATM Technology Users Symposium (ATMTU 2000)**," September 13-15, 2000, Kosice, Slovakia,

251. Member of Program Committee, "**International Conference on Communications (ICON2000)**," Singapore, September 5-8, 2000.

252. Member of Program Committee, "**Workshop on IP-oriented Operations & Management (IPOM2000)**," Krakow, Poland, September 4-6, 2000.

253. Member of Technical Program Committee, "**International Conference on Telecommunications (ICT-2000)**," Acapulco, Mexico, May 22-25, 2000.

254. Member of Program Committee, "**Mobile and Wireless Communication Networks (MWCN'2000)**," Paris, France, May 14-19, 2000.

255. Member of Program Committee, "**IEEE International Computer Performance and Dependability Symposium (IPDS2000)**," March 27-28, 2000, Chicago, IL.

256. Member of International Program Committee, "**International Symposium on Telemedicine and Tele-education in Practice (ISTEP2000)**," Elfa, Slovak Republic, March 24-28, 2000.

257. Session Organizer, "**IEEE Aerospace Conference**," Big Sky, MT, March 18-25, 2000.

258. Member of Program Committee, "**Eighth International Conference on Computer Communications (ICCCN'99)**," Boston, MA, October 11-13, 1999.

259. Member of the Program Committee, "**IEEE International Conference on Networking (ICON'99)**," September 28-October 1, 1999, Brisbane, Queensland, Australia.

260. Member of Scientific Committee, "**Seventh IFIP Workshop on Performance Modeling and Evaluation of ATM Networks (IFIP ATM'99**)," June 28-30, 1999, Antwerp, Belgium.

261. 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

262. 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.

263. Member of Program Committee, "**Third International Workshop on Satellite-based information services (WOSBIS'98)**," Dallas, TX, October 1998.

264. 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.

265. Member of the Program Committee, "**1998 International Computer Performance and Dependability Symposium (IPDS'98)**," Durham, NC, September 7-9, 1998

266. Member of the Technical Program Committee (TPC), "**IEEE INFOCOM'98 Conference on Computer Communications**," March 29-April 2, 1998, San Francisco, CA.

267. Member of Program Committee, "**IEEE Global Internet'97**," Globecom'97 Mini-conference, Phoenix, AZ, November 1997

268. 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.

269. Member of Program Committee, "**2nd International Workshop on Satellite-based information services (WOSBIS'97)**," Budapest, Hungary, October 1, 1997.

270. Member of Program Committee, "**ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems (SIGMETRICS'97)**," Seattle, WA, June 15-18, 1997.

271. Member of Program Committee, "**9th International Conference on Modeling Techniques and Tools for Computer Performance Evaluation (Performance Tools'97)**," Saint-Malo, France, June 1997

272. Member of Technical Program Committee, "**15th International Teletraffic Congress**," Washington, DC, June 23-27, 1997.

273. Member of Program Committee, "**IEEE Infocom'97**," Kobe, Japan, April 7-11, 1997.

274. Member of Program Committee, "**IEEE Global Internet'96**," Globecom'96 Miniconference, London, November 20-21, 1996.

275. Member of Program Committee, "**Transport Protocols for Broadband Networks**," Globecom'96 Miniconference, London, November 20, 1996.

276. Member of Steering Committee, "**ACM/IEEE Mobile Computing and Networking Conference (MOBICOM'96)**," Rye, NY, November 11-12, 1996.

277. Member of Program Committee, "**1996 International Conference on Network Protocols**," Columbus, Ohio, October 29-November 1, 1996.

278. Panel member, "**International Conference on Networking Protocols (ICNP'96)**," Columbus, OH, October 29-November 1, 1996.

279. 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.

280. 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.

281. Session Organizer and Session Chair, "**Can ATM Networks Scale?**" NetWorld+Interop'96 Engineers' Conference, Atlanta, GA, September 18, 1996.

282. Member of Program Committee, "**IEEE International Computer Performance and Dependability Symposium (IPDS'96)**," Urbana-Champaign, IL, September 4-6, 1996.

283. Invited Speaker, "**IEEE International Computer Performance and Dependability Symposium IPDS'96**," Urbana-Champaign, IL, September 4-6, 1996.

284. 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.

285. Session Organizer and Session Chair, "**Resource, Traffic, and Congestion Management over Heterogeneous Networks**," NetWorld+Interop'96 Engineers' Conference, Las Vegas, April 2-5, 1996.

286. Program committee member, "**First Workshop on ATM Traffic Management (WATM'95)**," France, December 4-8, 1995.

287. Member of Steering Committee, "**The First International Conference on Mobile Computing and Networking 1995 (MobiCom'95)**," Berkeley, CA, November 13-15, 1995.

288. Program committee member, "**1995 International Conference on Network Protocols (ICNP'95)**," Tokyo, Japan, November 7-10, 1995.

289. Program committee member, "**Performance Tools'95**," Heidelberg (Germany), September 18-22, 1995.

290. Program committee member, "**Hot Interconnects III**," San Francisco, Ca, Aug 10-12, 1995.

291. 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.

292. Program committee member, "**Seventh International Conference on Modeling Techniques and Tools for Computer Performance Evaluation**," Vienna, Austria, May 3-May 6, 1994.

293. Program committee member, "Conference on Measurement and Modeling of Computer Systems (**SIGMETRICS'94)**," Nashville, TN, May 16-20, 1994.

294. Program committee member, "**Conference on Communications Architectures, Protocols and Applications (SIGCOMM'94)**," London, UK, August 31-September 2, 1994.

295. Program committee member, "**International Teletraffic Congress Sponsored Seminar on Teletraffic Analysis Methods for Current and Future Telecomm Networks**," November 15-19, 1993.

296. Program Committee Member, "**Conference on Measurement and Modeling of Computer Systems (SIGMETRICS'93)**," Santa Clara, CA, May 10-14, 1993.

297. Program Committee Member and Session Chair, "**Conference on Communications Architectures, Protocols and Applications (SIGCOMM'93**)," San Francisco, CA, September 13-17, 1993.

298. Program Committee Member and Session Chair, "**International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS'92),**" Newport, Rhode Island, June 1-5, 1992.

299. Tutorial Chair, "**Conference on Communications Architectures & Protocols** (**SIGCOMM'92)**," Baltimore, MD, August 17-22, 1992.

300. Program Committee Member and Session Chair, "**ACM Symposium on Communications Architectures & Protocols (SIGCOMM'90)**," Philadelphia, PA, September 24-27, 1990.

301. Program Committee Member, "**ACM Symposium on Communications Architectures & Protocols (SIGCOMM'89)**." Austin, TX, September 19-22, *1989.*

302. Program committee member, "**IEEE International Conference on Computer Design (ICCD'89)**," Cambridge, MA, October 2-4, 1989.

303. Panel member, "**InterOp'88 conference**," Santa Clara, CA, September 26-30, 1988.

304. 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 (Association for 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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2. K. Ramadas and Raj Jain, "**Redundant Switch Fabric Methods and System for Switching of Telecommunication Signals**," U.S. Patent No. 6,836,353, December 28, 2004, http://www.cse.wustl.edu/~jain/patents/6836353.htm [8+ Citations]
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2. Benjamin B. Dingel, Raj Jain, and Katsutoshi Tsukamoto, (Editors), "**Broadband Access Communication Technologies VII**," Proceedings of Society of Photo-Optical Instrumentation Engineers (SPIE), Volume 8645, San Francisco, CA, USA, 5-7 February 2013, ISBN:9780819494146, http://www.cse.wustl.edu/~jain/books/access13.htm
3. Benjamin B. Dingel, Raj Jain, and Katsutoshi Tsukamoto, (Editors), "**Broadband Access Communication Technologies VI**," Proceedings of Society of Photo-Optical Instrumentation Engineers (SPIE), Volume 8282, San Francisco, CA, USA, 24-26 January 2012, ISBN:9780819489258, http://www.cse.wustl.edu/~jain/books/access12.htm
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5. Sasan Adibi, Raj Jain, Shyam Parekh, Mostafa Tofigh, (Editors), "**Quality of Service Architectures for Wireless Networks: Performance Metrics and Management**," IGI Global, April 2010, ISBN: 1615206809, http://www.cse.wustl.edu/~jain/books/qos_book.htm
6. Benjamin B. Dingel, Raj Jain, and Katsutoshi Tsukamoto, (Editors), "**Broadband Access Communication Technologies IV**," Proceedings of Society of Photo-Optical Instrumentation Engineers (SPIE), Volume 7620, San Jose, CA, USA, 23 January 2010, 130 pp., ISBN: 9780819480163, http://www.cse.wustl.edu/~jain/books/access10.htm
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8. Raj Jain; B. B. Dingel; S. Komaki; S. Ovadia, (Editors), "**Broadband Access Communication Technologies II**," The International Society for Optical Engineering (SPIE) Volume 6776, September 2007, 196 pp., ISBN: 9780819469366, http://www.cse.wustl.edu/~jain/books/access07.htm
9. Raj Jain, B. B. Dingel, S. Komaki, S. Ovadia, (Editors), "**Broadband Access Communication Technologies**," The International Society for Optical Engineering (SPIE) Volume 6390, October 2006, 224 pp., ISBN:0819464880, http://www.cse.wustl.edu/~jain/books/access06.htm
10. M. Hassan and Raj Jain, "**High-Performance TCP/IP Networking**," Prentice Hall, November 2003, http://www.cse.wustl.edu/~jain/books/tcpip.htm [345+ Citations]
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]
12. Raj Jain, "**The Art of Computer Systems Performance Analysis: Techniques for Experimental Design, Measurement, Simulation, and Modeling**," Wiley- Interscience, New York, NY, April 1991, http://www.cse.wustl.edu/~jain/books/perfbook.htm [8026+ Citation]
13. Raj Jain, "**Control-theoretic Formulation of Operating Systems Resource Management Policies**," Outstanding Dissertations in the Computer Sciences Series, Garland Publishing Company, New York, N.Y., 1979, http://www.cse.wustl.edu/~jain/books/control.htm

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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 Głąbowski, 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.
8. A. Durresi and Raj Jain, "**ATM Networks**," in Handbook for Computer Networks, edited by Hossein Bidgoli, Wiley, ISBN: 0471784613, December 2007, http://www.cse.wustl.edu/~jain/books/atm_chp.htm
9. A. Durresi, Raj Jain, "**RTP, RTCP and RTSP for Real-Time Applications**," in The Industrial Information Technology Handbook, edited by Richard Zurawski, Published by CRC Press, ISBN: 0849330777, January 2005, http://www.cse.wustl.edu/~jain/books/rtp.htm
10. Naveen Bisht and Raj Jain, "**Optical Networking: Recent Advances, Trends, and Issues**," Annual Review of Communications, Vol. 55, International Engineering Consortium, Chicago, IL, ISBN: 1-931695-02-4, November 2002, http://www.cse.wustl.edu/~jain/books/opt_wp.htm
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13. S. Kota, A. Durresi, Raj Jain, "**Realizing Future Broadband Satellite Network Services**," in Modelling and Simulation Environment for Terrestrial and Satellite Networks, edited by A. Nejat Ince, published by Springer, ISBN: 0-7923-7547-5, October 2001, http://www.cse.wustl.edu/~jain/books/aachen2000book.htm.
14. Raj Jain and Wei Sun, "**QoS/Policy/Constraint–Based Routing**," in Carrier IP Telephony 2000 Comprehensive report published by International Engineering Consortium, August 2000, ISBN: 0933217757, http://www.cse.wustl.edu/~jain/cis788-99/qos_routing/index.html
15. G. Babic, Raj Jain, A. Durresi, "**ATM Performance Testing and Quality of Service Management**," in F. Golshani and F. Groom, Ed., The ATM Handbook, published by International Engineering Consortium, Chicago, IL, ISBN:0933217633, August 2000, http://www.cse.wustl.edu/~jain/books/exp-book.1col.htm
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17. S. Kota, Mukul Goyal, Rohit Goyal, and Raj Jain, "**Broadband satellite Network: TCP/IP Performance Analysis**," in Danny H. K. Tsang, Paul J. Kuhn (Eds.), Broadband Communications: Convergence of Network Technologies, Kluwer ISBN 0792386779, October 1999, pp. 273-282, http://www.cse.wustl.edu/~jain/books/broadband99.htm

18. S. Kota, Mukul Goyal, Rohit Goyal, Raj Jain, "**Multimedia Satellite Networks and TCP/IP Traffic Transport**," in Borko Furht (Ed.), Internet, Multimedia Systems and Applications (IMSA'99). IASTED/ACTA Press, ISBN: 0889862699, January 1999, pp. 436-443, http://www.cse.wustl.edu/~jain/books/jmta.htm
19. Raj Jain, K. Ramakrishnan, D. Chiu, "**Congestion Avoidance in Computer Networks with a Connectionless Network Layer**," DEC-TR-506, reprinted in C. Partridge, Ed., Innovations in Internetworking, published by Artech House, ISBN: 0890063370, October 1988, http://www.cse.wustl.edu/~jain/books/cr5.htm
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2. M. Hassan and M. Atiquzzaman, "**Performance of TCP/IP over ATM Networks**," Artech House, Boston, 2000, ISBN 1-58053-037-0, 236 pp.
3. N. J. Gunther, "**The Practical Performance Analyst**," iUniverse.com, October 2000, ISBN 059512674X, 468 pp.

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35. Raj Jain, "**Trends and Issues in Softwarization of Networks: What's In, What's Out**," Invited talk at IEEE Workshop on Network Automation, Piscata Way, NJ, Feb 25, 2019, http://www.cse.wustl.edu/~jain/talks/inetauto.htm
36. Raj Jain, "**12 Trends in Networking: What's In, What's Out**," Keynote at International Conference on Computing, Networking and Communications (ICNC) 2019 Honolulu, Hawaii, February 20, 2019, http://www.cse.wustl.edu/~jain/talks/icnc19.htm
37. Raj Jain, "**Networking Developments for IoT: Current Research Issues**," Keynote at 2nd International Conference on Smart IoT Systems: Innovations in Computing (SSIC 2019), Jaipur, India, January 20, 2019, http://www.cse.wustl.edu/~jain/talks/iot_ssic.htm
38. Raj Jain, "**Extending Blockchains Beyond Smart Contracts**," Keynote at Blockchain Connect Conference, San Francisco, January 11, 2019, http://www.cse.wustl.edu/~jain/talks/pbc_svi.htm
39. Raj Jain, "**Extending Blockchains for Risk Management and Decision Making**," Invited talk at Innovation and Breakthrough Forum 2018, Hong Kong, Nov. 9, 2018, http://www.cse.wustl.edu/~jain/talks/pbc_ibf.htm.
40. Raj Jain, "**Trends and Issues in Softwarization of Networks: What's In, What's Out**," Invited talk at Hong Kong University of Science and Technology, Nov. 8, 2018, http://www.cse.wustl.edu/~jain/talks/hkust18.htm

41. Raj Jain, "**Recent Advances in Networking and their Impact on Smart Cities**," Keynote at 4th IEEE International Smart Cities Conference (ISC2), Kansas City, MO, September 16-19, 2018, http://www.cse.wustl.edu/~jain/talks/smrtciti.htm

42. Raj Jain, "**Trends and Issues in Softwarization of Networks: What's In, What's Out**," Keynote at IEEE Conference on Network Softwarization, Montreal, Canada, June 26, 2018, http://www.cse.wustl.edu/~jain/talks/netsoft.htm

43. Raj Jain, "**Trends and Issues in Networking: What's In, What's Out**," Keynote at IEEE International Conference on High-Performance Switching and Routing, Bucharest, Romania, June 19, 2018, http://www.cse.wustl.edu/~jain/talks/hpsr18.htm

44. Raj Jain, "**Internet, Multi-Cloud, Wireless, and Network Security Research at Washington University in St. Louis**," A talk to CSE 131R Introduction to Computer Science I students at WUSTL, October 23, 2017, http://www.cse.wustl.edu/~jain/talks/cs13117.htm

45. Raj Jain, "**Current Trends in Networking With Applications to the Internet of Things and Smart Cities**," Keynote at 2017 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Amman, Jordan, October 12, 2017, http://www.cse.wustl.edu/~jain/talks/aeect17.htm

46. Raj Jain, "**Blockchains: Networking Applications**," An invited talk at the 38th IEEE Sarnoff Symposium, Newark, NJ, Sep 19, 2017, http://www.cse.wustl.edu/~jain/talks/blc_srnf.htm

47. Raj Jain, "**The Catch-up Game: Quest for the Impact**," Keynote at ACM SIGCOMM 2017, Los Angeles, CA, August 22, 2017, http://www.cse.wustl.edu/~jain/talks/sigcomm.htm

48. Raj Jain, "**Smart Cities: Technical Issues and Challenges**," A talk given at Smart City Meet up, University City, MO, August 10, 2017, http://www.cse.wustl.edu/~jain/talks/smrtcity.htm

49. Raj Jain, "**Multi-Cloud Global Application Delivery for Smart Cities**," International Summit on Smart World and Smart Cities, Fremont, CA, USA, Aug 5, 2017, http://www.cse.wustl.edu/~jain/talks/smrtwrld.htm

50. Raj Jain, "**Fault and Performance Management in Multi-Cloud Based NFV using Shallow and Deep Predictive Structures**," 7th Workshop on Industrial Internet of Things Communication Networks (IioTCom) at ICCCN 2017, Vancouver, Canada, August 3, 2017, http://www.cse.wustl.edu/~jain/talks/icccn17p.htm

51. Raj Jain, "**Blockchains: The Distributed Trust Technology**," Keynote at 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

52. 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

53. 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

54. 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

55. 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
56. 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
57. 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.
58. 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.
59. 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
60. 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.
61. 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
62. 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.
63. 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.
64. 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
65. 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
66. 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
67. 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

68. 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

69. 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

70. 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

71. 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

72. 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

73. 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

74. 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

75. 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

76. 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

77. 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

78. 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

79. 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

80. 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

81. 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
82. 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
83. 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
84. 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
85. 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
86. Raj Jain, "**Virtualization and Software Defined Networking (SDN) for Multi-Cloud Computing**," Invited talk at PES University, Bangaluru, September 17, 2014, http://www.cse.wustl.edu/~jain/talks/apf_pes.htm
87. 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
88. 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
89. 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
90. 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
91. 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
92. 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
93. 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

94. 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
95. 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.
96. 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
97. 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
98. 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
99. 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
100. 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.
101. 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.
102. 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
103. 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.
104. 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/slicep.htm
105. 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

106. 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
107. 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
108. 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
109. 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
110. 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
111. 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
112. 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
113. 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
114. 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
115. 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
116. 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
117. 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
118. 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

119. 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.

120. 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

121. 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

122. Raj Jain, Arjan Durresi, "**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

123. 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

124. 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

125. 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

126. 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

127. 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.

128. 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.

129. 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.

130. 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

131. 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

132. 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.htm1

133. 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

134. 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

135. 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.

136. 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

137. 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

138. 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

139. 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

140. 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

141. 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

142. 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

143. Raj Jain, "**Aeronautical Datalinks: Recent Developments and Issues**," Boeing Corporation, June 4, 2010, http://www.cse.wustl.edu/~jain/talks/ldac106.htm

144. 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

145. Raj Jain, "**Aeronautical Datalinks: Recent Developments and Issues**," Boeing Corporation, April 1, 2010, http://www.cse.wustl.edu/~jain/talks/ldac104.htm
146. 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
147. 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
148. 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
149. 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
150. 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
151. 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
152. 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
153. 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
154. 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
155. 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
156. 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
157. 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
158. 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
159. 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 Franscini at Monte Verita in Ascona, Switzerland, March 15-20, 2009, http://www.cse.wustl.edu/~jain/talks/in3_na.htm

160. 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
161. 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.
162. 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
163. 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
164. Raj Jain, "**Broadband Wireless Access**," IEEE Mumbai Chapter, India, December 15, 2008, http://www.cse.wustl.edu/~jain/talks/ieeebmb.htm
165. 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
166. 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
167. 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
168. 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
169. 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
170. 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
171. 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
172. 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
173. 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

174. 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

175. 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

176. 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

177. 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

178. 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

179. 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

180. 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

181. 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

182. 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.

183. 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/mstcp.htm

184. 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

185. 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

186. Raj Jain, "**Wireless Personal Area Networks (WPANs),"** WUSTL CSE467S Class guest lecture, April 24, 2006, http://www.cse.wustl.edu/~jain/talks/wpans.htm

187. 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

188. 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

189. 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

190. 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

191. 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

192. 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

193. Raj Jain, "**Computer Networking: Recent Developments, Trends, and Issues**," Duke University, February 14, 2005, http://www.cse.wustl.edu/~jain/talks/duke0502.htm

194. 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

195. 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

196. 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

197. 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

198. 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

199. 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

200. 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

201. 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

202. 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

203. Raj Jain, "**Industry Watch Program**," International Conference on Broadband Networking, Bangalore, India, May 7, 2003

204. 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

205. 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

206. 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

207. 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

208. 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

209. 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

210. 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

211. 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

212. 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

213. 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

214. 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

215. 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.

216. 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

217. 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

218. 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

219. 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

220. Raj Jain, "**IP over DWDM Networks**," GTE, Boston, January 19, 2000, http://www.cse.wustl.edu/~jain/talks/opt_gte.htm

221. Raj Jain, "**Optical DWDM Networks**," Nortel Networks, November 5, 1999, http://www.cse.wustl.edu/~jain/talks/h_5opt.htm

222. Raj Jain, "**IP over DWDM**," Nortel Networks, November 5, 1999, http://www.cse.wustl.edu/~jain/talks/h_aipwd.htm

223. 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

224. 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

225. 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

226. 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.

227. 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

228. 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

229. 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.

230. 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

231. 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

232. 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

233. 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

234. 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.

235. 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

236. 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

237. 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

238. 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

239. 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

240. 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

241. 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

242. 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

243. 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

244. 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

245. Raj Jain, "**ABR Engineering: Guidelines for Setting ABR Parameters**," Nortel, Canada, December 10, 1998, http://www.cse.wustl.edu/~jain/talks/cng_prm.htm

246. 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

247. 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

248. Raj Jain, "**Virtual Private Networks**," Nortel, Canada, September 25, 1998, http://www.cse.wustl.edu/~jain/talks/vpn.htm
249. Raj Jain, "**A Comparison of ATM Service Categories**," Nortel, Canada, September 25, 1998, http://www.cse.wustl.edu/~jain/talks/tm_cats.htm
250. 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
251. 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
252. 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
253. 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
254. 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
255. 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
256. 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
257. 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
258. Raj Jain, "**Quality of Service in IP Networks**," Nortel, Canada, May 15, 1998, http://www.cse.wustl.edu/~jain/talks/ipqos.htm
259. 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
260. 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
261. 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
262. 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

263. 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

264. 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

265. Raj Jain, "**IP over SONET**," Nortel, Canada, March 13, 1998, http://www.cse.wustl.edu/~jain/talks/ipsonet.htm

266. 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

267. 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

268. 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

269. Raj Jain, "**Guaranteed Frame Rate (GFR) Service: Recent Issues**," Nortel, Canada, Jan 16, 1998, http://www.cse.wustl.edu/~jain/talks/gfr.htm

270. Raj Jain, "**Gigabit Ethernet: Architectural Design and Issues**," Nortel, Canada, Jan 16, 1998, http://www.cse.wustl.edu/~jain/talks/gbether.htm

271. 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

272. 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

273. 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

274. 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

275. 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

276. 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

277. 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

278. 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

279. Raj Jain, "**Recent Advances in Networking Including ATM and Its Traffic Management**," Seventh International Symposium of Computing and Electronic Systems, Instituto Tecnologico y de Estudios Superiores de Monterrey, Campus Toluca, Mexico, October 17, 1997, http://www.cse.wustl.edu/~jain/talks/atm_mx.htm

280. 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

281. Raj Jain, "**Protocols for multimedia on the Internet**," Nortel, Canada, (October 1, 1997), http://www.cse.wustl.edu/~jain/talks/ip_mult.htm

282. 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

283. 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

284. 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

285. 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

286. 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

287. 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

288. Raj Jain, "**ATM Traffic Management over Satellite Networks: Recent Issues**," TIA, July 15, 1997, http://www.cse.wustl.edu/~jain/talks/nas9707.htm

289. 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

290. 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

291. 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

292. Raj Jain, "**Multipoint Communication in Computer Networks**," Nortel, Canada, May 16, 1997, http://www.cse.wustl.edu/~jain/talks/multipt.htm

293. 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

294. 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

295. Raj Jain, "**Use of Virtual Source and Virtual Destinations in Satellite Links**," TIA/SCD/CIS ATM over Satellite Meeting, Columbus, OH, March 26, 1997

296. 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

297. 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

298. Raj Jain, "**Voice over ATM**," US ARMY, Monmouth, NJ, January 23, 1997, http://www.cse.wustl.edu/~jain/talks/systran.htm

299. Raj Jain, "**Performance and Traffic Management of Internet Protocols on ATM Networks**," Digital Equipment Corporation, Littleton, MA, November 22, 1996

300. Raj Jain, "**Networking Research at OSU**," To students of CIS885, November 20, 1996

301. 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

302. Raj Jain, "**Virtual Source/Virtual Destination: Design Issues**," Bell-Northern Research/Northern Telecom, Ottawa, Canada, November 11, 1996

303. 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

304. Raj Jain, "**TCP/IP over UBR**," Cascade Communications, Boston, MA, October 28, 1996

305. Raj Jain, "**ATM Performance Benchmarking**," Ascom Timeplex, Boston, MA, October 28, 1996

306. Raj Jain, "**Performance and Traffic Management of Internet Protocols on ATM Networks**," Naval Research Laboratory, October 21, 1996

307. 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.

308. Raj Jain, "**ATM Traffic Management: Unresolved Issues**," Rome Labs, Rome, NY, October 4, 1996, http://www.cse.wustl.edu/~jain/talks/ssci.htm

309. Raj Jain, "**Scheduling Algorithms**," Bell-Northern Research/Northern Telecom, Ottawa, Canada, October 2, 1996

310. Raj Jain, "**Performance and Traffic Management of Internet Protocols Over ATM Networks**," South-Western Bell, Austin, TX, September 30, 1996

311. 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

312. Raj Jain, "**ATM Traffic Management**," BellSouth, Atlanta, GA, September 18, 1996

313. 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

314. Raj Jain, "**Recent Advances in 100 Mbps Networking Technologies**," NASA Lewis Research Center, Cleveland, OH, August 28, 1996

315. Raj Jain, "**Virtual Local Area Networks**," NSF Computer Networking Workshop, Michigan State University, August 7, 1996

316. Raj Jain, "**Traffic Management in ATM Networks**," NSF Computer Networking Workshop, Michigan State University, August 7, 1996

317. 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

318. 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

319. 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

320. Raj Jain, "**TCP/IP over ATM**," TIA/SCD/CIS meeting, NASA Lewis Research Center, Cleveland, OH, May 29, 1996

321. Raj Jain, "**Traffic Management in ATM Networks**," Motorola, Phoenix, AZ, May 17, 1996, http://www.cse.wustl.edu/~jain/talks/cng_tut.htm

322. 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

323. 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

324. Raj Jain, "**ATM Research at OSU**," invited seminar at Zeitnet, Santa Clara, CA, March 27, 1996

325. Raj Jain, "**High-Speed Networking: Issues and Trends**," IEEE Distinguished Visitor Lecture, University of Southern Florida, Tampa, FL, March 19, 1996

326. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," IEEE Distinguished Visitor Lecture, the University of Central Florida, Orlando, FL, March 19, 1996

327. Raj Jain, "**Common Mistakes and Games of Performance Analysis**," ACM Lecture, University of Tennessee, Knoxville, TN, February 28, 1996
328. Raj Jain, "**High-Speed Networking: Issues and Trends**," ACM Lecture, Vanderbilt University, Nashville, TN, February 28, 1996
329. 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
330. 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
331. 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
332. 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
333. 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
334. Raj Jain, "**Traffic Management in ATM Networks**," 6th Maryland Workshop on Very High-Speed Networks, Baltimore, MD, October 30-31, 1995
335. 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
336. Raj Jain, "**Performance Benchmarking of ATM Switches**," Presentation at NetWorld+InterOp, Atlanta, GA, September 28, 1995
337. Raj Jain, "**Congestion Control in ATM Networks**," Presentation at NetWorld+InterOp, Atlanta, GA, September 28, 1995
338. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," Invited Seminar at Business School, Georgia State University, Atlanta, GA, September 27, 1995
339. Raj Jain, "**Congestion Control in ATM Networks**," Invited Seminar at School of Computer Science, Georgia Tech, Atlanta, GA, September 27, 1995
340. 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
341. Raj Jain, "**Congestion Control in ATM Networks**," Invited Seminar at NASA Lewis Research Center, Cleveland, OH, September 15, 1995
342. Raj Jain, "**Congestion Control in ATM Networks**," Satellite Interoperability Subcommittee Meeting, Cleveland, OH, September 14, 1995
343. Raj Jain, "**Congestion Control in ATM Networks: Recent Advances**," Invited Lecture at Bell Northern Research, Ottawa, Ontario, September 11, 1995

344. 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

345. 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.

346. 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

347. 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

348. 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

349. 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

350. Raj Jain, "**ATM Networking**," Departmental Presentation in OSU's Annual Conference for Engineers and Architects, Columbus, OH, May 19, 1995

351. 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

352. 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

353. Raj Jain, "**Congestion Control in ATM Networks**," Networld+Interop'95 General Conference, Las Vegas, NV, March 27-31, 1995

354. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," IEEE Chapter, Rochester, NY, March 15, 1995

355. Raj Jain, "**Common Mistakes and Games of Performance Analysis**," Rochester Institute of Technology, Rochester, NY, March 15, 1995

356. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," NASA Lewis Research Center, Cleveland, OH, March 13, 1995

357. 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

358. Raj Jain, "**Congestion Control in High-Speed Networks**," Mitsubishi Electric Research Labs, Cambridge, Mass, February 1, 1995

359. 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

360. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," Bell Northern Research, Ottawa, Canada, Distinguished Lecture, September 21, 1994

361. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," AT&T Columbus, Ohio, August 26, 1994

362. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," National Institute of Science and Technology (NIST), Gaithersburg, MD, August 12, 1994

363. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," NSF Workshop on Networking, Michigan State University, East Lansing, Mich., August 5, 1994

364. 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

365. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," University of Irvine, CA, July 18, 1994

366. Raj Jain, "**ATM Networks: Issues and Challenges Ahead**," IEEE Chapter, Dallas, TX, IEEE Distinguished Visitor, May 19th, 1994

367. Raj Jain, "**Congestion Control in ATM Networks**," Professor Y.C. Who's 60th Birth Anniversary Symposium, Harvard University, Cambridge, Mass., April 23, 1994

368. Raj Jain, "**Common Mistakes and Games of Performance Analysis**," Wayne State University, Detroit, Mich., ACM Lecture, April 6, 1994

369. 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

370. Raj Jain, "**Myths about Congestion Control in High-Speed Networks**," ACM Chapter, Detroit, Mich., ACM Lecture, April 6, 1994

371. Raj Jain, "**ATM or FDDI?**," 4th Maryland Workshop on Very High-Speed Network, Baltimore, MD, March 15-17, 1993

372. 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

373. Raj Jain, "**High-Speed Networking: Issues and Trends**," Keynote speech, 1992 IEEE Local Computer Networking Conference (LCN'92), Minneapolis, MN, September 15, 1992

374. 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

375. Raj Jain, "**Computer Benchmarking: Issues and Pitfalls**," Dinner speech, Joint meeting of SPEC and GPC benchmarking groups, Littleton, MA, May 1992

376. Raj Jain, "**Computer Benchmarking: Games People Play**," Boston Computer Society, PC Technical User's Group meeting, January 8, 1992

377. 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.

378. Raj Jain, "**Myths About Congestion Control in High-Speed Networks**," Workshop on Very High-Speed Networking Workshop, Greenbelt, MD, March 5, 1990

379. 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.

380. Raj Jain, "**Congestion Control-Trends _& Issues**," an invited seminar at AT_&T Bell Laboratories, Murray Hill, NJ, July 1989

381. Raj Jain, "**Congestion Control: Trends _& Issues**," 2nd IEEE Workshop on CAMAD of Communication Links and Networks, University of Massachusetts, Amherst, MA, October 14, 1988

382. Raj Jain, "**Networking Performance Issues and Trends**," Interop'88, Santa Clara, CA, September 30, 1988

383. Raj Jain, "**FDDI Performance: A Tutorial**," Networks and Communications Seminar Series, DEC/LKG, May 11, 1988

384. Raj Jain, "**Congestion Control: Trends _& Issues**," TIMS/ORSA Joint National Meeting, Washington, D.C., April 26, 1988
385. Raj Jain, "**Panel Session on Congestion Control**," Panel Organizer, 10th Data Communications Symposium, October 1987
386. 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
387. Raj Jain, "**Networking Performance Issues and Trends**," George Washington University, October 10, 1987
388. Raj Jain, "**FDDI Error Analysis**," ANSI X3T9 SMT meeting, June 23, 1987
389. 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
390. 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
391. Raj Jain, "**Performance Modeling of DNA**," Digital Networking Team Training, Westford, Mass., August 6, 1986
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IEEE Standards Activities

1. Member of the Sponsor Ballot, 8023dg/D3.0, "**Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 100 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of Conductors**," December 10, 2025.
2. Member of the Sponsor Ballot, 802-1AB-2016-Rev/D2.0, "**Station and Media Access Control Connectivity Discovery**," December 8, 2025.
3. Member of the Sponsor Ballot, 8023dk/D3.2, "**Draft Standard for Ethernet Amendment 11: Bidirectional 100Gb/s Optical Access PHYs**," November 14, 2025.
4. Member of the Sponsor Ballot, IEEE P802.1CB-2017/Cor1/D2.1, "**Frame Replication and Elimination for Reliability Corrigendum 1: Technical and Editorial Corrections**," November 12, 2025.
5. Member of the Sponsor Ballot, P802.1ASds/D2.0, "**Timing and Synchronization for Time-Sensitive Applications Amendment: Support for the IEEE Std 802.3 Clause 4 Media Access Control (MAC) operating in half-duplex**," October 31, 2025.
6. Member of the Sponsor Ballot, P802.1ASed/D3.2, "**Timing and Synchronization for Time-Sensitive Applications, Amendment: Fault-Tolerant Timing with Time Integrity**," October 28, 2025.
7. Member of the Sponsor Ballot, P1722-2016-Rev/D9, "**Standard for a Transport Protocol for Time-Sensitive Applications in a Bridged Local Area Network**," October 2025.
8. Member of the Sponsor Ballot, P802.1AS-2020-Rev/D2.1, "**Timing and Synchronization for Time-Sensitive Applications**," September 18, 2025.
9. Member of the Sponsor Ballot, P802.15.9a/D03, "**Draft Standard for Transport of Key Management Protocol Datagrams Amendment: Additional Key Management Protocol**," September 2025.
10. Member of the Sponsor Ballot, IEEE P802.15.4ae/D02, "**Draft Standard for Low-Rate Wireless Networks Amendment: Ascon cryptographic algorithms**," September 2025.
11. Member of the Sponsor Ballot, P802.15.4ac/D03, "**Draft Standard for Low-Rate Wireless Networks Amendment: Privacy Enhancements**," July 2025.
12. Member of the Sponsor Ballot, P802.15.9a/D02, "**Draft Standard for Transport of Key Management Protocol Datagrams Amendment: Additional Key Management Protocol**," July 2025.
13. Member of the Sponsor Ballot, P802.1DP/SAE AS6675™-2025/D3.3, "**Draft Standard for Local and metropolitan area networks—Time-Sensitive Networking for Aerospace Onboard Ethernet Communications**," June 26, 2025.

14. Member of the Sponsor Ballot, 8023da/D3.0, "**Draft Standard for Ethernet Amendment 10:Physical Layer Specifications and Management Parameters for Enhancement of 10 Mb/s Operation over Single Balanced Pair Multidrop Segments**," June 26, 2025.
15. Member of the Sponsor Ballot, P802.1DP/D3.3, " **Time-Sensitive Networking for Aerospace Onboard Ethernet Communications**," June 26, 2025.
16. Member of the Sponsor Ballot, P802.3.2/D3.4, "**Draft Standard for Ethernet YANG Data Model Definition**," June 16, 2025.
17. Member of the Sponsor Ballot, IEC/IEEE 60802/D3.4, "**Time-Sensitive Networking Profile for Industrial Automation**," May 31, 2025.
18. Member of the Sponsor Ballot, IEEE.P802.15.6/D06, "**Draft Standard for Wireless Body Area Networks**," May 31, 2025.
19. Member of the Sponsor Ballot, P802.1AXdz/D2.1, "**Link Aggregation Amendment 1: YANG for Link Aggregation**," May 22, 2025.
20. Member of the Sponsor Ballot, P145/D2.9, "**Draft Standard for Definitions of Terms for Antennas**," April 2025.
21. Member of the Sponsor Ballot, P3536/D12, "**Draft Standard for Space System Cybersecurity Design**," March 2025.
22. Member of the Sponsor Ballot, 802-1DG/D4.2, "**Draft Standard for Local and metropolitan area networks — Time-Sensitive Networking Profile for Automotive In-Vehicle Ethernet Communications**," February 6, 2025.
23. Member of the Sponsor Ballot, P802.11bk/D4.0, "**Draft Standard for Information technology— Telecommunications and information exchange between systems Local and metropolitan area networks— Specific requirements**," January 2025.
24. Member of the Sponsor Ballot, P802.11bf/D7.0, " **Draft Standard for Information technology— Telecommunications and information exchange between systems Local and metropolitan area networks— Specific requirements**," January 2025.
25. Member of the Sponsor Ballot, P802.16t/D5.0, "**IEEE Draft Standard for Air Interface for Broadband Wireless Access Systems Amendment t: Fixed and Mobile Wireless Access in Narrowband Channels**," November 2024.
26. Member of the Sponsor Ballot, P802.1Qdy/D2.2, "**Standard for Ethernet Structure of Management Information version 2 (SMIv2) Data Model Definitions**," October 8, 2024,"
27. Member of the Sponsor Ballot, P802/D2.2, "**Standard for Local and Metropolitan Area Networks: Overview and Architecture - Time-Sensitive Networking Profile for Industrial Automation**," September 28, 2024
28. Member of the Sponsor Ballot, P60802/D3.0, "**IEC/IEEE 60802 TSN Profile for Industrial Automation**," August 8, 2024.
29. Member of the Sponsor Ballot, P802.11bh**, "Standard for Local and Metropolitan Area Networks--Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Operation with Randomized and Changing MAC Addresses,**" August 15, 2024

30. Member of the Sponsor Ballot, P802.11bh/D6.0, "**Standard for Local and metropolitan area networks--Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Enhancements for Extremely High Throughput (EHT)**," August 10, 2024
31. Member of the Sponsor Ballot, P802.11be/D7.0, "**Quality of Service Provision by Network Systems**," August 9, 2024"
32. Member of the Sponsor Ballot, P802.1DC/D3.4, "**Standard for Information Technology -- Telecommunications an... [+]Standard for Information Technology -- Telecommunications and Information Exchange Between Systems Local and Metropolitan Area Networks -- Specific Requirements - Part 11: Wireless Local Area Network (LAN) Medium Access Control (MAC) and Physical Layer (PHY) Specifications**," August 8, 2024
33. Member of the Sponsor Ballot, P802.11/D7.0, "**IEEE Standard for Ethernet - Corrigendum 1 - Multi-Gigabit Automotive Medium Dependent Interface (MDI) Return Loss**," August 7, 2024
34. Member of the Sponsor Ballot, P802.3-2022/Cor 1/D3, **"Standard for Local and Metropolitan Area Networks - Part 15.7: Short-Range Optical Wireless Communications Amendment: Higher Speed, Longer Range Optical Camera Communication (OCC),"** July 27, 2024
35. Member of the Sponsor Ballot, P802.15.7a/D8, "**Standard for Low-Rate Wireless Networks**," July 27, 2024
36. Member of the Sponsor Ballot, P802.15.4/D7, **"Tactile Internet: Application Scenarios, Definitions and Terminology, Architecture, Functions, and Technical Assumptions"**," July 19, 2024
37. Member of the Sponsor Ballot, P1918.1/D4, "**Standard for Local and Metropolitan Area Networks - Timing and Synchronization for Time-Sensitive Applications Amendment: Hot Standby and Clock Drift Error Reduction**," July 18, 2024
38. Member of the Sponsor Ballot, P802.1ASdm/D2.5, "**for Local and Metropolitan Area Networks - Timing and Synchronization for Time-Sensitive Applications Amendment: YANG Data Model**," July 5, 2024
39. Member of the Sponsor Ballot, P802.1ASdn/D2.2, "**Standard for Local and Metropolitan Area Networks--Bridges and Bridged Networks Amendment: YANG Data Models for the Credit-Based Shaper**," April 5, 2024
40. Member of the Sponsor Ballot, P802.1Qdx, "**Standard for Local and Metropolitan Area Networks--Bridges and Bridged Networks Amendment: YANG Data Models for the Credit-Based Shaper**," April 5, 2024
41. Member of the Sponsor Ballot, P802.1Qdx/D2.1, "**Standard for Definitions of Terms for Antennas**," April 4, 2024
42. Member of the Sponsor Ballot, "**Standard for Local and Metropolitan Area Networks--Bridges and Bridged Networks Amendment: Configuration Enhancements for Time-Sensitive Networking**," March 9, 2024

43. Member of the Sponsor Ballot, P802.1Qdj/D2.2, " **Standard for Local and Metropolitan Area Networks--Link-local Registration Protocol - Corrigendum 1 Corrections to Management Modules and Protocol Encoding**," January 4, 2024

44. Member of the Sponsor Ballot, P802.1Qdj/D2.2, "**Standard for Local and Metropolitan Area Networks--Link-local Registration Protocol - Corrigendum 1 Corrections to Management Modules and Protocol Encoding**," January 4, 2024

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49. Member of Sponsor Ballot, P802.3cw/D3, "**Draft Standard for Ethernet Amendment: Physical Layers and Management Parameters for 400 Gb/s Operation over DWDM systems**," December 19, 2023

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53. Member of Sponsor Ballot, 802.1DC/D3, "**Draft Standard for Local and metropolitan area networks— Quality of Service Provision by Network System**," November 1, 2023

54. Member of Sponsor Ballot, 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

55. Member of Sponsor Ballot, 802.3df/D3.2, "**Draft Standard for Ethernet Amendment 9: Media Access Control Parameters for 800 Gb/s and Physical Layers and Management**," October 13, 2023

56. Member of Sponsor Ballot, P1914.3/D2.1, "**Standard for Radio over Ethernet Encapsulations and Mappings**," August 23, 2023

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58. Member of Sponsor Ballot, P802.1ASdr/D1.2, "**Draft Standard for Local and Metropolitan Area Networks— Timing and Synchronization for Time-Sensitive Applications Amendment: Inclusive Terminology**," April 17, 2023

59. Member of Sponsor Ballot, P802.15.3-RevB/D6, "**Draft Standard for Wireless Multimedia Wireless Networks**," June 26, 2023

60. Member of Sponsor Ballot, P1918.1/d3, "**Draft Standard for Tactile Internet: Application Scenarios, Definitions and Terminology, Architecture, Functions, and Technical Assumptions**," February 23, 2023

61. Member of Sponsor Ballot, 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

62. Member of Sponsor Ballot, P11073-10471/D6r1, "**DRAFT Standard for Health informatics - Device Interoperability - Part 10471: Personal health device communication – Device specialization - Independent living activity hub**," February 1, 2023

63. Member of Sponsor Ballot, P802.11bb/D6.0, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Light Communications,"** January 14, 2023

64. 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

65. Member of Sponsor Ballot, P802.3cx/D3.3, "**Standard for Ethernet Amendment: Media Access Control (MAC) service interface and management parameters to support improved Precision Time Protocol (PTP) timestamping accuracy,"** December 27, 2022

66. Member of Sponsor Ballot, P802.3cz/D3.2, "**Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for multi-gigabit optical**

Ethernet using graded-index glass optical fiber for application in the automotive environment," December 20, 2022

67. Member of Sponsor Ballot, P11073-10471/D4, "**Health Informatics -- Device Interoperability -- Part 10471: Personal Health Device Communication -- Device Specialization--Independent Living Activity Hub,"** December 11, 2022

68. Member of Sponsor Ballot, P802.1Qcz/D2.4, "**Standard for Local and Metropolitan Area Networks--Bridges and Bridged Networks Amendment: Congestion Isolation,"** December 9, 2022

69. Member of Sponsor Ballot, P802.1AEdk/D2.2, "**Standard for Local and metropolitan area networks - Media Access Control (MAC) Security Amendment 4: MAC Privacy protection,"** November 13, 2022

70. 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

71. Member of Sponsor Ballot, P802.11az/D7.0, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - Enhancements for Positioning,"** September 29, 2022

72. 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

73. Member of Sponsor Ballot, P802.15.4-2020/Cor 1/D6, "**Standard for Low-Rate Wireless Networks - Corrigendum 1 Correction of errors preventing backward compatibility,"** July 11, 2022

74. Member of Sponsor Ballot, P802.11-2020/Cor 1/D2.1, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - Corrigendum 1 -- Correct IEEE 802.11ay Assignment of Protected Announce Support bit,"** July 8, 2022

75. Member of Sponsor Ballot, P802.3de/D3.1, "**Standard for Ethernet Amendment: Enhancements to the MAC Merge function and the Time Synchronization Service Interface (TSSI) to Include Point-to-Point 10 Mb/s Single Pair Ethernet,"** July 1, 2022

76. Member of Sponsor Ballot, P802.3ck/D3.3, "**Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 100 Gb/s,200 Gb/s, and 400 Gb/s Electrical Interfaces Based on 100 Gb/s Signaling [-]"**, June 25, 2022

77. Member of Sponsor Ballot, P802.3cs/D3.4, "**Standard for Ethernet Amendment: Physical Layers and management parameters for increased-reach point-to-multipoint Ethernet optical subscriber access (Super-PON),"** June 9, 2022

78. Member of Sponsor Ballot, P802.1Q/D1.2, "**Standard for Local and Metropolitan Area Networks--Bridges and Bridged Networks,"** June 9, 2022

79. Member of Sponsor Ballot, P11073-10206/D6, "**Health informatics -- Device Interoperability -- Part 10206: Personal health device communication -- Abstract information content model,"** June 2, 2022

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81. Member of Sponsor Ballot, P802.3dd/D3.1, "**Standard for Ethernet Amendment: Maintenance #17: Power over Data Lines of Single Pair Ethernet,"** March 29, 2022

82. Member of Sponsor Ballot, P63195-1/D7, "**Measurement procedure for the assessment of power density of human exposure to radiofrequency fields from wireless devices operating in close proximity to the head and body - Frequency range of 6 GHz to 300 GHz,"** December 13, 2021

83. Member of Sponsor Ballot, P63195-2/D9, "**The assessment of power density of human exposure to radiofrequency fields from wireless devices in close proximity to the head and body, part 2: Computational procedure (frequency range of 6 GHz to 300 GHz) [-]"**, December 13, 2021

84. ember of Sponsor Ballot, P802.1BA/D2.2, "**Standard for Local and Metropolitan Area Networks--Audio Video Bridging (AVB) Systems,"** October 25, 2021

85. Member of Sponsor Ballot, P802.1ACct/D2.0, "**Standard for Local and Metropolitan Area Networks -- Media Access Control (MAC) Service Definition Amendment Support for IEEE Std 802.15.3,"** October 8, 2021

86. Member of Sponsor Ballot, P802.1ABcu/D2.3, "**Standard for Local and Metropolitan Area Networks - Station and Media Access Control Connectivity Discovery Amendment: YANG Data Model,"** October 1, 2021

87. Member of Sponsor Ballot, P1722.1/D13, "**Standard for Device Discovery, Connection Management, and Control Protocol for Time-Sensitive Networking Systems [-],"** September 18, 2021

88. ember of Sponsor Ballot, P802.3cp/D3.2, "**Standard for Ethernet Amendment: Bidirectional 10 Gb/s,25 Gb/s,and 50 Gb/s Optical Access PHYs [-]"**, May 20, 2021

89. Member of Sponsor Ballot, P802.15.9/D06, "**Standard for Transport of Key Management Protocol (KMP) Datagrams,"** April 11, 2021

90. ember of Sponsor Ballot, P2410/D10, "**Standard for Biometric Privacy**, February 20, 2021

91. Member of Sponsor Ballot, P1619.2/D2, "**Standard for Wide-Block Encryption for Shared Storage Media**, February 18, 2021

92. Member of Sponsor Ballot, P802.11ba/D8.0, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment: Wake-up Radio Operation,"** December 21, 2020

93. Member of Sponsor Ballot, P802.11ay/D7.0, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications--Amendment: Enhanced Throughput for Operation in License-Exempt Bands Above 45 GHz,"** December 20, 2020

94. Member of Sponsor Ballot, P802.11ax/D8.0, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment Enhancements for High-Efficiency WLAN,"** November 27, 2020

95. Member of Sponsor Ballot, P802.11/D5.0, "**Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications,"** October 4, 2020

96. Member of Sponsor Ballot, P802.1CS/D3.1, "**Standard for Local and Metropolitan Area Networks -- Link-local Registration Protocol,"** August 20, 2020

97. Member of Sponsor Ballot, P802.15.22.3/D8, "**Standard for Spectrum Characterization and Occupancy Sensing**, August 15, 2020

98. Member of Sponsor Ballot, P1910.1/D3, "**Standard for Meshed Tree Bridging with Loop-Free Forwarding**, August 10, 2020

99. Member of Sponsor Ballot, P11073-40101/D5, "**Health Informatics -- Device Interoperability -- Part 40101: Foundational -- Cybersecurity - Processes for Vulnerability Assessment,"** August 9, 2020

100. Member of Sponsor Ballot, P11073-40102/D4, "**Health Informatics -- Device Interoperability -- Part 40102: Foundational -- Cybersecurity - Capabilities for Mitigation,"** July 27, 2020

101. Member of Sponsor Ballot, P802E/D2.0, "**Recommended Practice for Privacy Considerations for IEEE 802 Technologies,"** June 13, 2020

102. Member of Sponsor Ballot, P802.1Qcr/D2.3, "**Standard for Local and metropolitan area networks--Bridges and Bridged Networks Amendment: Asynchronous Traffic Shaping,"** May 29, 2020

103. Member of Sponsor Ballot, P62704-4/D4, "**Standard for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body from Wireless Communications Devices,30 MHz - 6 GHz: General Requirements for Using the Finite Element Method (FEM) for SAR Calculations and Specific Requirements for Modeling Vehicle-Mounted Antennas and Personal Wireless Devices [-]"**, May 23, 2020

104. Member of Sponsor Ballot, P802.15.4z/D8, "**Standard for Low-Rate Wireless Networks Amendment: Enhanced Ultra Wide-Band (UWB) Physical Layers (PHYs) and Associated Ranging Techniques,"** April 17, 2020

105. Member of Sponsor Ballot, P11073-10420/D5, "**Health Informatics -- Device Interoperability -- Part 10420: Personal Health Device Communication -- Device Specialization - Body Composition Analyzer,"** April 10, 2020

106. ember of Sponsor Ballot, P802.15.4/D06, "**Standard for Low-Rate Wireless Networks**, March 19, 2020

107. Member of Sponsor Ballot, P802.3ch/D3.2, "**Standard for Ethernet Physical Layer Specifications and Management Parameters for Greater Than 1 Gb/s Automotive Ethernet,"** March 13, 2020

108. Member of Sponsor Ballot, P802.3ca/D3.1, "**Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 25 Gb/s and 50 Gb/s Passive Optical Networks,"** March 12, 2020

109. Member of Sponsor Ballot, P802.1CMde/D2.1, "**Standard for Local and metropolitan area networks -- Time-Sensitive Networking for Fronthaul Amendment: Enhancements to Fronthaul Profiles to Support New Fronthaul Interface, Synchronization, and Syntonization Standards [-],"** February 28, 2020

110. Member of Sponsor Ballot, P802.1Qcx/D2.1, "**Standard for Local and Metropolitan Area Networks--Bridges and Bridged Networks Amendment: YANG Data Model for Connectivity Fault Management,"** February 28, 2020
111. Member of Sponsor Ballot, P802.1AE-2018/Cor 1/D1.0, "**Standard for Local and Metropolitan Area Networks-Media Access Control (MAC) Security - Corrigendum 1: Tag Control Information Figure,"** January 11, 2020
112. Member of Sponsor Ballot, P802.3ca/D3.0, "**Physical Layer Specifications and Management Parameters for 25?Gb/s and 50?Gb/s Passive Optical Networks**," December 20, 2019
113. Member of Sponsor Ballot, P802.3ch/D3.0, "**Multi-Gig Automotive Ethernet PHY**," December 20, 2019
114. Member of Sponsor Ballot, P802.11REVmd D3.0, "," December 15, 2019
115. Member of Sponsor Ballot, P802.3cq/D3.2, "**IEEE Draft Standard for Ethernet Amendment: Maintenance #13: Power over Ethernet over 2 pairs**," December 7, 2019
116. Member of Sponsor Ballot, P802.1AS/D8.3, "**Timing and Synchronization for Time-Sensitive Applications**," November 1, 2019
117. Member of Sponsor Ballot, P11073-10407/D12, "**Health Informatics - Personal Health Device Communication - Device Specialization - Blood Pressure Monitor**," October 27, 2019
118. Member of Sponsor Ballot, P802.1X/D1.5, "**IEEE Draft Standard for Local and metropolitan area networks--Port-Based Network Access Control**," October 20, 2019
119. Member of Sponsor Ballot, P802.15.4w/D6, "**IEEE Draft Standard for Low-Rate Wireless Networks Amendment for a Low Power Wide Area Network (LPWAN) extension to the Low Energy Critical Infrastructure Monitoring (LECIM) Physical layer (PHY)**," October 18, 2019
120. Member of Sponsor Ballot, P11073-10404/D10, "**IEEE Draft Standard - Health Informatics - Personal Health Device Communication - Part 10404: Device Specialization - Pulse Oximeter**," October 14, 2019
121. Member of Sponsor Ballot, P802.3cm/D3.1, "**P802.3cm - IEEE Draft Standard for Ethernet Amendment Physical Layer and Management Parameters for 400 Gb/s over Multimode Fiber**," October 11, 2019
122. Member of Sponsor Ballot, P1914.1/D5.3, "**P1914.1 - IEEE Draft Standard for Packet-based Fronthaul Transport Networks**," September 27, 2019
123. Member of Sponsor Ballot, P802.3cg/D3.4, "**IEEE P802.3cg 10 Mb/s Single Pair Ethernet Task Force**," September 27, 2019
124. Member of Sponsor Ballot, P62704-4/D3, "**P62704-4 - IEC/IEEE International Draft Standard - Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body from Wireless Communications Devices, 30 MHz - 6 GHz: Part 4: General Requirements for Using the finite element method (FEM) for SAR Calculations**," September 19, 2019

125. Member of Sponsor Ballot, P1711.2/D4, "**IEEE Standard for Secure SCADA Communications Protocol (SSCP)**," September 14, 2019
126. Member of Sponsor Ballot, P11073-10415/D9, "**11073-10415-2019 - IEEE Standard - Health informatics--Personal health device communication Part 10415: Device specialization--Weighing scale**," September 13, 2019
127. Member of Sponsor Ballot, P11073-10408/D9, "**Health Informatics -- Personal Health Device Communication Part 10408: Device Specialization -- Thermometer**," September 9, 2019
128. Member of Sponsor Ballot, P802.3cn/D3.1, "**IEEE P802.3cn 50 Gb/s, 200 Gb/s, and 400 Gb/s over greater than 10km of SMF**," September 5, 2019
129. Member of Sponsor Ballot, P802.1AX/D2.1, "**P802.1AX - IEEE Draft Standard for Local and Metropolitan Area Networks -- Link Aggregation**," September 2, 2019
130. Member of Sponsor Ballot, P802.15.22.3/D05, "**Standard for Spectrum Characterization and Occupancy Sensing**," August 18, 2019
131. Member of Sponsor Ballot, P802.22/D8, "**Standard for Information Technology -- Local and Metropolitan Area Networks -- Specific Requirements -- Part 22: Cognitive Radio Wireless Regional Area Networks (WRAN) Medium Access Control (MAC) and Physical Layer (PHY) Specifications: Policies and Procedures for Operation in the Bands that Allow Spectrum Sharing where the Communications Devices may Opportunistically Operate in the Spectrum of the Primary Service**," July 21, 2019
132. Member of Sponsor Ballot, P62704-5, V105, "**P62704-4 - IEC/IEEE International Draft Standard - Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body from Wireless Communications Devices, 30 MHz - 6 GHz: Part 4: General Requirements for Using the finite element method (FEM) for SAR Calculations**," May 23, 2019
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Citizenship

- US Citizen, Married, Two children.

Further information about Dr. Jain, including all his publications, can be found at http://www.cse.wustl.edu/~jain/index.html. In particular, a shorter version of this CV is at http://www.cse.wustl.edu/~jain/bio_jain.htm.