

## Biography of Dr. Raj Jain



Professor Raj Jain is a Fellow of IEEE, a Fellow of ACM, a winner of ACM SIGCOMM Test of Time award, CDAC-ACCS Foundation Award 2009, [Hind Rattan Award 2011](#), and ranks among the top 70 in CiteSeerX's list of [Most Cited Authors in Computer Science](#). Dr. Jain is currently a Professor of Computer Science and Engineering at Washington University in St. Louis. Previously, he was the CTO and one of the Co-founders of Nayna Networks, Inc - 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 professor of Computer and Information Sciences at Ohio State University in Columbus, Ohio.

He is the author or editor of 10 books including ``[Art of Computer Systems Performance Analysis](#)," which won the 1991 ``Best-Advanced How-to Book, Systems" award from Computer Press Association and "[High-Performance TCP/IP: Concepts, Issues, and Solutions](#)," 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.

Prof. Jain has 14 patents, and has written 15 book chapters, 55+ journal and magazine papers and 95+ conference papers. His papers have been widely referenced and he is known for his research on congestion control and avoidance, traffic modeling, performance analysis, and error analysis. Google Scholar lists over 15000+ citations to his publications. He is a co-inventor of the DECbit scheme, which has been 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.

A distinguishing factor of his research is its relevance to the Industry. As a faculty member, Dr. Jain actively participates in industry forums like WiMAX Forum, IEEE Standards group, ATM Forum and Internet Engineering Task Force and has made over 200 contributions that ensured that his research was implemented and not just published as papers. Based on his active participation in the computer industry, Dr. Jain was awarded 1999 siliconindia Leadership Awards for Excellence and Promise in Business and Technology.

Raj Jain serves on the advisory boards of [DOCOMO Innovations, Inc.](#), San Jose, CA and [InBay Technology Solutions, Inc.](#), San Jose, CA. In the past, he has served on the Board of Technical Advisors to a dozen Silicon Valley start ups including Nexabit Networks, Westborough, MA acquired by Lucent Corporation. (March 1997-1999), Amber Networks, Fremont, CA acquired by Nokia (1999-2001).

He is one of the keynote speakers at upcoming [ICC 2012](#). In the past, he was the keynote speaker at [ADCONS 2012](#), [SBRC 2011](#), COMSNETS 2011, ANTS 2010, [MICS 2010](#), [ADCOM 2009](#), [NBiS 2009](#), [NetArch 2009](#), ICON 2008, ACM Multimedia 2008, ICCBN 2008, ICCCE 2008, [AccessNets 2007](#), and a dozen other conferences. He has served in the program committees of over 180+ conferences.

He is on the Editorial Boards of [Recent Patents on Telecommunications](#), [Journal of High Speed Networks \(USA\)](#), [Mobile Networks and Applications \(MONET\)](#), [International Journal of Virtual Technology and Multimedia \(IJVTM\) \(UK\)](#), [International Journal of Wireless and Optical Communications \(IJWOC\)](#), and [International Journal of Communication Networks and Distributed Systems \(IJCNDs\)](#), [ICST Transactions on Mobile Communications and Applications](#), [Journal of Telecommunication System and Management \(JTSM\)](#), and on the advisory boards of [Global Science and Technology Forum \(GSTF\)](#), Singapore, [Central European Journal of Computer Science \(Poland\)](#) and [Journal of Communications \(Finland\)](#).

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 Forum System Evaluation Methodology (2005-2008), Editor of ATM Forum Performance Testing Specification (1996-1998).

## Appointments

- August 2005 - Present, 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-Present, 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. Sci), Harvard University, Cambridge, MA. Thesis published as distinguished dissertations in Computer Science. GPA 4.0/4.0, 1978
- M. E. (Comp. Sc. & Controls), Indian Institute of Science, Bangalore, India, GPA: 4.0/4.0, 1974
- B. E. (Electrical. Engineering), A. P. S. University, Rewa, India, Marks 92%. Record not yet broken, 1972

## Selected Publications:

1. Jianli Pan, Subharthi Paul, and Raj Jain, "A Survey of Research on Future Internet Architectures," IEEE Communications Magazine, Vol. 49, No. 7, July 2011, pp. 26-36, <http://www.cse.wustl.edu/~jain/papers/internet.htm> .
2. Chakchai So-In, Raj Jain, Subharthi Paul, and Jianli Pan, "Virtualization Architecture using the ID/Locator Split Concept for Future Wireless Networks (FWNs)," Computer Networks, Special Issue on Wireless for the Future Internet, Vol. 55, Issue 2, February 2011, pp. 415-430, <http://www.cse.wustl.edu/~jain/papers/ilswrl.htm>
3. Abdel Karim Al Tamimi, Chakchai So-In, Raj Jain, "Modeling and Resource Allocation for Mobile Video over WiMAX Broadband Wireless Networks," IEEE Journal on Selected Areas in Communications, Special issue on Wireless Video Transmission, April 2010, Vol. 28, No. 3, pp.354-365, [http://www.cse.wustl.edu/~jain/papers/vid\\_jsac.htm](http://www.cse.wustl.edu/~jain/papers/vid_jsac.htm)
4. Jianli Pan, Raj Jain, Subharthi Paul, Mic Bowman, Shanzhi Chen, "Enhanced MILSA Architecture for Naming, Addressing, Routing and Security Issues in the Next Generation Internet," Proceedings of IEEE International Conference in Communications (ICC) 2009, Dresden, Germany, June 14-18, 2009, <http://www1.cse.wustl.edu/~jain/papers/emilsa.htm>
5. Raj Jain, "Internet 3.0: Ten Problems with Current Internet Architecture and Solutions for the Next Generation," in Proceedings of Military Communications Conference (MILCOM 2006), Washington, DC, October 23-25, 2006, <http://www.cse.wustl.edu/~jain/papers/gina.htm>
6. D. Chiu and Raj Jain, "Analysis of the Increase/Decrease Algorithms for Congestion Avoidance in Computer Networks," Journal of Computer Networks and ISDN, Vol. 17, No. 1, June 1989, pp. 1-14, [http://www.cse.wustl.edu/~jain/papers/cong\\_av.htm](http://www.cse.wustl.edu/~jain/papers/cong_av.htm) [Cited by 1575+ papers]
7. K. Ramakrishnan and Raj Jain, "A Binary Feedback Scheme for Congestion Avoidance in Computer Networks with Connectionless Network Layer," Proc. SIGCOMM'88, August 1988, pp. 303-313. Selected as the best paper and published in ACM Transactions on Computer Systems, Vol. 8, No. 2, May 1990, pp. 158-181, Reprinted in 25th Anniversary Special Issue of Computer Communication Review, Vol. 25, No. 1, Jan 1995, pp. 138-156, Winner of ACM SIGCOMM Test of Time Paper Award, <http://www.cse.wustl.edu/~jain/papers/cr2.htm> [Cited by 575+ papers]

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Further information about Dr. Jain including all his publications can be found at <http://www.cse.wustl.edu/~jain/index.html>. In particular, a detailed CV is at [http://www.cse.wustl.edu/~jain/cv\\_jain.htm](http://www.cse.wustl.edu/~jain/cv_jain.htm)