

# Sharad Jaiswal

Bell Labs Research India  
Alcatel-Lucent Technologies  
77, Koramangla Industrial Layout  
Bangalore, India 560095  
(+91-80) 3983 2082 (work)  
jsharad[AT]alcatel-lucent.com  
[http://www.bell-labs.com/org/bl-india/Sharad\\_Jaiswal.html](http://www.bell-labs.com/org/bl-india/Sharad_Jaiswal.html)

D-5-1, Oakyard  
38th Cross, East End Road  
9th Block, Jayanagar  
Bangalore, India 560069  
(+91-80) 4150 2702 (home)  
(+91) 99001 12986 (cell)  
sharad.jaiswal[AT]gmail.com

EDUCATION   ◇ **University of Massachusetts, Amherst**, Amherst, MA.  
Ph.D. in Computer Science, Sep. 2005  
Advisor: *Jim Kurose*

◇ **Boston University**, Boston, MA.  
M.S. in Computer Systems Engineering, Jan. 2000

◇ **The Regional Engineering College**  
(**now National Institute of Technology**), **Trichy**, Trichy, India.  
B.E. in Computer Science and Engineering, May, 1998

WORK EXPERIENCE   ◇ **Member of Technical Staff**, Bell Labs India, Alcatel-Lucent Technologies, Bangalore, India. (Aug. 2005 - present)

◇ **Research Assistant**, University of Massachusetts, Amherst (Aug. 2000 - Aug. 2005)

◇ **Intern**, Sprint ATL, Burlingame, CA (Jan. - May, 2003)

◇ **Intern**, Sprint ATL, Burlingame, CA (Jun. - Sep., 2001)

◇ **Research Intern**, HP Labs, Palo Alto, CA (Jun. - Sep., 2000)

◇ **Teaching Fellow**, Boston University (Sep. 1999 - May 2000)

RESEARCH INTERESTS   Low-cost networking; Wireless mesh network architecture and design; Internet traffic measurements, modeling and analysis; Internet topology.

SIGNIFICANT RESEARCH PROJECTS   ◇ Scheduling support in IEEE 802.16e WiMAX base stations for multicast based delivery of real-time video.  
*with S. Deb and K. Nagaraj*

◇ VillageNet project: architecture and design of routing, scheduling and channel allocation algorithms for long-distance wireless mesh networks.  
*with P. Dutta, K.V.M. Naidu, D. Panigrahi and R. Rastogi*

◇ Inferring characteristics of a TCP connection, and its path using passive measurements taken in the “middle” of the end-to-end path  
*with G. Iannaccone, C. Diot, J. Kurose and D. Towsley*

◇ Explore performance issues of Peer-Peer file sharing systems using analytical models  
*with Z. Ge and D. Figuiereado*

◇ Study topological and statistical properties of the Internet autonomous systems graph  
*with A. Rosenberg, Z. Ge, D. Figuiereado, L. Gao and D. Towsley*

JOURNAL PUBLICATIONS   “Measurement and Classification of out-of-sequence packets in a Tier-1 IP Backbone”  
Sharad Jaiswal, Gianluca Iannaccone, Christophe Diot, Jim Kurose, Don Towsley  
*in IEEE/ACM Transactions on Networking, Feb. 2007*

“VillageNet: a low-cost IEEE 802.11 based mesh network for rural regions”  
Partha Dutta, Sharad Jaiswal and Rajeev Rastogi  
*in Bell Labs Technial Journal, Oct. 2007*

- CONFERENCE/  
WORKSHOP  
PUBLICA-  
TIONS
- “Real-Time Video Multicast in WiMax Networks”  
Supratim Deb, Sharad Jaiswal, Kanthi Nagaraj  
*in Proceedings of Infocom, 2008*
- “Minimum Cost Topology Construction for Rural Wireless Mesh Networks”  
Debmalya Panigrahi, Partha Dutta, Sharad Jaiswal, K V M Naidu, Rajeev Rastogi  
*in Proceedings of Infocom, 2008*
- “A New Channel Assignment Mechanism for Rural Wireless Mesh Networks”  
Partha Dutta, Sharad Jaiswal, Debmalya Panigrahi, Rajeev Rastogi  
*in Proceedings of Infocom Mini Symposium, 2008*
- “Routing and Channel Allocation Algorithms for Rural Wireless Mesh Networks”  
Partha Dutta, Sharad Jaiswal, Rajeev Rastogi  
*in Proceedings of Infocom, 2007*
- “Formal Analysis of Passive Measurements Based Techniques”  
Sharad Jaiswal, Gianluca Iannaccone, Christophe Diot, Jim Kurose, Don Towsley  
*in Proceedings of Infocom, 2006*
- “Identifying 802.11 Traffic from Passive Measurements Using Iterative Bayesian Inference”  
Wei Wei, Sharad Jaiswal, Jim Kurose, Don Towsley  
*in Proceedings of Infocom, 2006*
- “Comparing the structure of power-law graphs and the Internet-AS graph”  
Sharad Jaiswal, Arnold L. Rosenberg, Don Towsley  
*in Proceedings of ICNP 2004*
- “Inferring TCP Connection Characteristics through Passive Measurements”  
Sharad Jaiswal, Gianluca Iannaccone, Christophe Diot, Jim Kurose, Don Towsley  
*in Proceedings of Infocom 2004*
- “Measurement and Classification of out-of-sequence packets in a Tier-1 IP Backbone”  
Sharad Jaiswal, Gianluca Iannaccone, Christophe Diot, Jim Kurose, Don Towsley  
*in Proceedings of Infocom 2003*  
*and as a short paper in Proceedings of IMW, 2002*
- “Modeling Peer-Peer File Sharing Systems”  
Zihui Ge, Daniel Figuieredo, Sharad Jaiswal, Jim Kurose, Don Towsley  
*in Proceedings of Infocom 2003*
- “On the Hierarchical Structure of the Logical Internet Graph”  
Zihui Ge, Daniel Figuieredo, Sharad Jaiswal, Lixin Gao  
*Proceedings of the SPIE ITCOM, July 2001*
- “Unicast wormhole message routing in irregular computer networks”  
Sharad Jaiswal, Lev Zakrevski, Mehmet Mustafa and Mark Karpovsky  
*Proceedings of PDCS, 2000*
- “A new method for deadlock elimination in computer networks with irregular topologies”  
Lev Zakrevski, Sharad Jaiswal, Lev Levitin and Mark Karpovsky  
*in Proceedings of PDCS, 1999*
- PATENTS  
FILED
- “A method for channel assignment in rural wireless mesh networks”  
*Alcatel-Lucent docket no. 801982*
- “Channel assignment for wireless mesh networks”  
*US Patent Office serial no. 11/797,562*

“A method and system for measuring round-trip time of packets in a communication network”

*US Patent Office serial no. 10/435,800 and Sprint docket no. 2326/SPRI.104354*

“Related packet identification”

*US Patent Office serial no. 10/435,808 and Sprint docket no. 2371/SPRI.105608*

INVITED  
TALKS

“*VillageNet: An IEEE 802.11 based low-cost mesh network for rural regions*” at

- Wireless World Research Forum Meeting, Chennai, Nov. 6th, 2007

- Convergence 2007, KReSIT, IIT Bombay, March. 9th, 2007

“*Measurements-in-the-middle: Inferring end-end path characteristics using passive measurements*” at Bell Labs, Holmdel, NJ, Dec. 2004.

SOFTWARE  
TOOLS

***tcpflows***: A tool to infer the performance (loss, round trip delay, packet reordering, window size etc.) of TCP connections using measurements taken passively, anywhere in the end-end path.

Available at: <http://www-net.cs.umass.edu/dag/tcpflows.html>

PRIZES  
SCHOLARSHIPS

Best Paper Award, for “*VillageNet: An IEEE 802.11 based low-cost mesh network for rural regions*” in *WISARD* workshop held in conjunction with the *IEEE Comsware* conference, 2007.

Graduate Research Assistant, UMass, Amherst, Sep. 2000 - Sep. 2005.

Graduate Teaching Fellow, Boston University, Sep. 2000 - May 2001

Presidential University Graduate Fellowship, Boston University, Sep. 1998 - May. 1999

National Talent Search Scholarship, Govt. of India, 1992 - 98.

REFERENCES

Available on request.