

# Seungjoon Lee

**Contact Information** Network Measurement and Engineering Research Department  
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**Research Interests** Computer Networks, Distributed Systems, Wireless Networks, Mobile Computing

**Education**

Ph.D., Computer Science 2006  
University of Maryland, College Park, MD  
Thesis: The WISE Abstraction Framework for Wireless Networks  
Advisor: Professor Bobby Bhattacharjee

M.S., Computer Science 2000  
Seoul National University, Seoul, Korea  
Thesis: Multicasting in Wireless Ad-hoc Networks  
Advisor: Professor Chong-kwon Kim

B.S., Computer Science 1996  
Seoul National University, Seoul, Korea

**Work Experience**

Senior Member of Technical Staff 2006–present  
AT&T Lab - Research, Florham Park, NJ

Summer Intern June–August, 2005  
Routing and Scheduling for Multihop Wireless Backhaul Networks  
Bell Labs, Lucent Technologies, Murray Hill, NJ

Research Assistant 2002–2006  
NICE project (Design of Cooperative Computing Environment)  
University of Maryland, College Park, MD

Teaching Assistant (Computer Networks, Discrete Structures) 2000–2002  
Department of Computer Science  
University of Maryland, College Park, MD

Research Assistant 1996–2000  
Information Networking and Computing Lab  
Seoul National University, Seoul, Korea

**Selected Journal Publications**

1. Efficient and Resilient Backbones for Multihop Wireless Networks  
Seungjoon Lee, Bobby Bhattacharjee, Aravind Srinivasan, Samir Khuller  
*IEEE Transactions on Mobile Computing*, Vol 7 No 11, Nov 2008
2. Resilient Multicast using Overlays

Suman Banerjee, Seungjoon Lee, Bobby Bhattacharjee, Aravind Srinivasan  
*IEEE/ACM Transactions on Networking*, Vol. 14, No. 2, pp. 237–248, April 2006

3. Cooperative Peer Groups in NICE  
Rob Sherwood, Seungjoon Lee, Bobby Bhattacharjee  
*Computer Networks*, Vol. 50, Issue 4, Elsevier Science, March 2006
4. Distribution of Path Durations in Mobile Ad-hoc Networks–Palm’s Theorem to the Rescue  
Y. Han, R. J. La, A. M. Makowski, Seungjoon Lee  
*Computer Networks*, Vol. 50, Issue 12, pp. 1887-1900, Elsevier Science, August 2006
5. A New Wireless Ad-hoc Multicast Routing Protocol  
Seungjoon Lee, Chong-kwon Kim  
*Computer Networks*, Vol. 38, No. 2, Elsevier Science, February 2002

#### **Under Submission**

6. Efficient Geographic Routing in Multihop Wireless Networks  
Seungjoon Lee, Bobby Bhattacharjee, Suman Banerjee, Bo Han  
Manuscript available upon request, January 2008

#### **Refereed Confer- ence/Workshop Publications**

1. The Taming of The Shrew: Mitigating Low-Rate TCP-Targeted Attack  
Chia-Wei Chang, Seungjoon Lee, Bill Lin, Jia Wang  
To appear in *ICDCS 2009*
2. Modeling Channel Popularity Dynamics in a Large IPTV System  
Tongqing Qiu, Zihui Ge, Seungjoon Lee, Jia Wang, Qi Zhao, Jun Xu  
To appear in *ACM Sigmetrics 2009*
3. Channel Access Throttling for Overlapping BSS Management  
Bo Han, Lusheng Ji, Seungjoon Lee, Robert R. Miller, Bobby Bhattacharjee  
To appear in *IEEE ICC 2009*
4. Anycast-Aware Transport for Content Delivery Networks  
Z. Al-Qudah, Seungjoon Lee, M. Rabinovich, O. Spatscheck, J. Van der Merwe  
To appear in *WWW 2009*
5. All Bits Are Not Equal – A Study of IEEE 802.11 Communication Bit Errors  
Bo Han, Lusheng Ji, Seungjoon Lee, Bobby Bhattacharjee, Robert R. Miller  
To appear in *IEEE Infocom 2009*
6. Approximation Algorithms for Data Broadcast in Wireless Networks  
Rajiv Gandhi, Yoo-Ah Kim, Seungjoon Lee, Jiho Ryu, Peng-Jun Wan  
To appear in *IEEE Infocom (Mini-conference) 2009*
7. Adaptive Parsing of Router Configuration Languages

Donald Caldwell, Seungjoon Lee, Yitzhak Mandelbaum  
*Internet Network Management Workshop (INM)*, Orlando, FL, October 2008

8. Anycast CDNs Revisited  
H. Alzoubi, Seungjoon Lee, M. Rabinovich, O. Spatscheck, J. van der Merwe  
*WWW 2008*, Beijing, China, April 2008
9. SDP-based Approach for Channel Assignment in Multi-radio Wireless Networks  
Hieu Dinh, Yoo-Ah Kim, Seungjoon Lee, Minh Shin, Bing Wang  
*Workshop on Foundation of Mobile Computing*, Portland, OR, August 2007
10. Soft Edge Coloring  
Chadi Kari, Yoo-Ah Kim, Seungjoon Lee, Alexander Russell, Minh Shin  
*APPROX 2007*, Princeton, NJ, August 2007
11. Backbone Construction in Selfish Wireless Networks  
Seungjoon Lee, Dave Levin, Vijay Gopalakrishnan, Bobby Bhattacharjee  
*ACM Sigmetrics*, San Diego, California, June 2007
12. Efficient Packet Error Rate Estimation in Wireless Networks  
Bo Han, Seungjoon Lee  
*IEEE/Create-Net TridentCom*, Orlando, Florida, May 2007
13. Distributed Channel Assignment for Multi-radio Wireless Networks  
Minh Shin, Seungjoon Lee, Yoo-ah Kim  
*IEEE MASS 2006*, Vancouver, Canada, October 2006
14. Admission Control for Multihop Wireless Backhaul Networks with QoS Support  
Seungjoon Lee, Girija Narlikar, Martin Pál, Gordon Wilfong, Lisa Zhang  
*IEEE WCNC 2006*, Las Vegas, Nevada, April 2006
15. Efficient Geographic Routing in Multihop Wireless Networks  
Seungjoon Lee, Bobby Bhattacharjee, Suman Banerjee  
*ACM MobiHoc 2005*, Urbana-Champaign, Illinois, May 2005
16. Scalable Resilient Media Streaming  
Suman Banerjee, Seungjoon Lee, R. Braud, Bobby Bhattacharjee, Aravind Srinivasan  
*ACM NOSSDAV 2004*, Cork, Ireland, June 2004
17. The Case for a Multihop Wireless Local Area Network  
Seungjoon Lee, Suman Banerjee, Bobby Bhattacharjee  
*IEEE Infocom 2004*, Hong Kong, China, March 2004
18. Resilient Multicast using Overlays  
Suman Banerjee, Seungjoon Lee, Bobby Bhattacharjee, Aravind Srinivasan

*ACM Sigmetrics 2003, San Diego, CA, June 2003*

19. Cooperative Peer Groups in NICE  
Seungjoon Lee, Rob Sherwood, Bobby Bhattacharjee  
*IEEE Infocom 2003, San Francisco, CA, April 2003*
20. Robust Routing in Wireless Ad-hoc Networks  
Seungjoon Lee, Minho Shin, Bohyung Han  
*ICPP Workshop on Ad Hoc Networking, Vancouver, Canada, August 2002*
21. Neighbor Supporting Ad-hoc Multicast Routing Protocol  
Seungjoon Lee, Chong-kwon Kim  
*ACM MobiHoc 2000, Boston, MA, August 2000*
22. New User Tracking Algorithms for a Wireless Network and Performance Analysis  
Hyojun Lim, Seungjoon Lee, Chong-kwon Kim  
*13th International Conference on Information Networking, Cheju, Korea, January 1999*

**Other  
Technical  
Reports**

1. Efficient and Resilient Backbones for Multihop Wireless Networks  
Seungjoon Lee, Bobby Bhattacharjee, Aravind Srinivasan, Samir Khuller  
CS-TR 4726, University of Maryland, College Park, May 2005
2. The WISE Abstraction Framework for Wireless Networks  
Seungjoon Lee  
Ph.D. Proposal submitted to Graduate School  
University of Maryland, College Park, November 2004
3. Efficient Geographic Routing in Multihop Wireless Networks  
Seungjoon Lee, Bobby Bhattacharjee, Suman Banerjee  
CS-TR 4625, University of Maryland, College Park, November 2004
4. The Case for a Multihop Wireless Local Area Network  
Seungjoon Lee, Suman Banerjee, Bobby Bhattacharjee  
CS-TR 4504, University of Maryland, College Park, July 2003
5. Scalable Resilient Media Streaming  
Suman Banerjee, Seungjoon Lee, R. Braud, Bobby Bhattacharjee, Aravind Srinivasan  
CS-TR 4482, University of Maryland, College Park, May 2003

**Presentations**

- Anycast CDNs Revisited
- World Wide Web (WWW) 2008, Beijing, China, April 2008
  - 17th KSEA (Korean-American Scientists and Engineers Association) Northeast Regional Conference (NRC), Somerset, NJ, June 2008

Backbone Construction in Selfish Wireless Networks  
ACM SIGMETRICS Conference, San Diego, California, June 2007

Protocol Design under Cooperative and Selfish Settings in Wireless Networks (Invited Talk)

- Intel Research, Cambridge, United Kingdom, May 2006
- Bell Labs, Lucent Technology, Murray Hill, NJ, May 2006
- Microsoft Research, Redmond, WA, April 2006
- School of Computer Science and Engineering, Seoul National University, Seoul, Korea, April 2006
- Department of Computer Science, National University of Singapore, Singapore, April 2006
- School of Computer Science, McGill University, Montreal, Canada, April 2006

Efficient Geographic Routing in Multihop Wireless Networks  
ACM MobiHoc Conference, Urbana-Champaign, IL, May 2005

The Case for a Multi-hop Wireless Local Area Network  
IEEE Infocom Conference, Hong Kong, March 2004.

Robust Routing in Wireless Ad hoc Networks  
ICPP Workshop on Ad Hoc Networking, Vancouver, Canada, August 2002

Neighbor Supporting Ad hoc Multicast Routing Protocol  
ACM MobiHoc, Boston, MA, August 2000

<b>Honors and Awards</b>	Dean's Fellowship Award College of Computer, Mathematical and Physical Sciences University of Maryland, College Park	2005–2006
	Merit-based Fellowship Department of Computer Science, University of Maryland, College Park	2000–2002
	Merit-based Fellowship Seoul National University	1992–1996
<b>Patent</b>	<i>Method And Apparatus For Scheduling Data Packet Transmission Over A Multihop Wireless Backhaul Network</i> (US Patent Pending) Seungjoon Lee, Girija Narlikar, Gordon Wilfong, Lisa Zhang	
<b>Professional Activities</b>	Conference Technical Program Committee: IEEE SECON (Conference on Sensor, Mesh, and Ad Hoc Communications and Networks) 2008 International Conference on Embedded Software and System 2007	
	Organizing Committee: The New York Metro Area Networking Workshop (NYMAN), March 2009	
	Conference/Journal Reviewer: IEEE Infocom, IEEE ICC, ACM MobiHoc, IEEE SECON, IEEE ICDCS, IEEE/IFIP DSN (Dependable Systems and Networks), IEEE Journal on Selected Areas in Communications, IEEE Transactions on Mobile Computing, IEEE/ACM Transactions on	

Networking, IEEE Transactions on Wireless Communications, Elsevier Computer Networks