Seungjoon Lee

Contact Information

Network Measurement and Engineering Research Department
AT&T Labs Research — Phone: +1 973 360 8598
180 Park Ave. Florham Park, NJ 07932 USA — Email: slee@research.att.com

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. A Generic Framework for Efficient Geographic Routing in Wireless Networks
   Seungjoon Lee, Bobby Bhattacharjee, Suman Banerjee, Bo Han
   Elsevier Computer Networks, accepted for publication

2. The Taming of The Shrew: Mitigating Low-Rate TCP-Targeted Attack

Chia-Wei Chang, Seungjoon Lee, Bill Lin, Jia Wang
IEEE Transactions on Network and Service Management, accepted for publication

3. 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

4. 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

5. Cooperative Peer Groups in NICE
Rob Sherwood, Seungjoon Lee, Bobby Bhattacharjee
Computer Networks, Vol. 50, Issue 4, Elsevier Science, March 2006

6. 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

7. A New Wireless Ad-hoc Multicast Routing Protocol
Seungjoon Lee, Chong-kwon Kim
Computer Networks, Vol. 38, No. 2, Elsevier Science, February 2002

Refereed Conference/Workshop Publications

1. Modeling User Activities in a Large IPTV System
Tongqing Qiu, Zihui Ge, Seungjoon Lee, Jia Wang, Jun Xu, and Qi Zhao
ACM/USENIX Internet Measurement Conference (IMC), Chicago, IL, Nov, 2009

2. Darkstar: Using Exploratory Data Mining to Raise the Bar on Network Reliability and Performance (invited)
C. R. Kalmanek, Z. Ge, S. Lee, C. Lund, D. Pei, J. Seidel, J. van der Merwe, J. Yates
Workshop on Design of Reliable Communication Networks, October 2009

3. Channel Access Throttling for Improving WLAN QoS
Bo Han, Lusheng Ji, Seungjoon Lee, Robert Miller, Samrat Bhattacharjee
IEEE Secon, Rome, Italy, June 2009

4. 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*

5. 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*

6. Channel Access Throttling for Overlapping BSS Management
   Bo Han, Lusheng Ji, Seungjoon Lee, Robert R. Miller, Bobby Bhattacharjee
   To appear in *IEEE ICC 2009*

7. 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*

8. 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*

9. 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*

10. Adaptive Parsing of Router Configuration Languages
    Donald Caldwell, Seungjoon Lee, Yitzhak Mandelbaum
    Internet Network Management Workshop (INM), Orlando, FL, October 2008

11. Anycast CDNs Revisited
    H. Alzoubi, Seungjoon Lee, M. Rabinovich, O. Spatscheck, J. van der Merwe
    WWW 2008, Beijing, China, April 2008

12. SDP-based Approach for Channel Assignment in Multi-radio Wireless Networks
    Hieu Dinh, Yoo-Ah Kim, Seungjoon Lee, Minho Shin, Bing Wang
    Workshop on Foundation of Mobile Computing, Portland, OR, August 2007

13. Soft Edge Coloring
    Chadi Kari, Yoo-Ah Kim, Seungjoon Lee, Alexander Russell, Minho Shin
    APPROX 2007, Princeton, NJ, Auguest 2007

14. Backbone Construction in Selfish Wireless Networks
    Seungjoon Lee, Dave Levin, Vijay Gopalakrishnan, Bobby Bhattacharjee
    ACM Sigmetrics, San Diego, California, June 2007

15. Efficient Packet Error Rate Estimation in Wireless Networks
    Bo Han, Seungjoon Lee
    IEEE/Create-Net TridentCom, Orlando, Florida, May 2007

16. Distributed Channel Assignment for Multi-radio Wireless Networks
    Minho Shin, Seungjoon Lee, Yoo-ah Kim
    IEEE MASS 2006, Vancouver, Canada, October 2006

17. 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

18. Efficient Geographic Routing in Multihop Wireless Networks
Seungjoon Lee, Bobby Bhattacharjee, Suman Banerjee
ACM MobiHoc 2005, Urbana-Champaign, Illinois, May 2005

19. Scalable Resilient Media Streaming
Suman Banerjee, Seungjoon Lee, R. Braud, Bobby Bhattacharjee, Aravind Srinivasan
ACM NOSSDAV 2004, Cork, Ireland, June 2004

20. The Case for a Multihop Wireless Local Area Network
Seungjoon Lee, Suman Banerjee, Bobby Bhattacharjee
IEEE Infocom 2004, Hong Kong, China, March 2004

21. Resilient Multicast using Overlays
Suman Banerjee, Seungjoon Lee, Bobby Bhattacharjee, Aravind Srinivasan
ACM Sigmetrics 2003, San Diego, CA, June 2003

22. Cooperative Peer Groups in NICE
Seungjoon Lee, Rob Sherwood, Bobby Bhattacharjee
IEEE Infocom 2003, San Francisco, CA, April 2003

23. Robust Routing in Wireless Ad-hoc Networks
Seungjoon Lee, Minho Shin, Bohyung Han
ICPP Workshop on Ad Hoc Networking, Vancouver, Canada, August 2002

24. Neighbor Supporting Ad-hoc Multicast Routing Protocol
Seungjoon Lee, Chong-kwon Kim
ACM MobiHoc 2000, Boston, MA, August 2000

25. 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

Honors and Awards

Dean's Fellowship Award 2005–2006
College of Computer, Mathematical and Physical Sciences
University of Maryland, College Park

Merit-based Fellowship 2000–2002
Department of Computer Science, University of Maryland, College Park

Merit-based Fellowship 1992–1996
Seoul National University

Patent

Method And Apparatus For Scheduling Data Packet Transmission Over A Multihop Wireless Backhaul Network (US Patent Pending)
Seungjoon Lee, Girija Narlikar, Gordon Wilfong, Lisa Zhang

Professional Activities

Conference Technical Program Committee:
IEEE LAN/MAN Workhop 2010
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