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Education

Massachusetts Institute of Technology. *Cambridge, MA.*

Ph.D. Computer Science, 2009.

Advisor: Nancy Lynch. Thesis: *Distributed Computation on Unreliable Radio Channels.*

Massachusetts Institute of Technology. *Cambridge, MA.*

M.S. Computer Science, 2006. Advisors: Nancy Lynch and Gregory Chockler.

Thesis: *Consensus and Collision Detectors in Wireless Ad Hoc Networks.*

Dartmouth College. *Hanover, NH.*

A.B. Computer Science (High Honors in the Major), 2004, *Summa Cum Laude.*

Employment

Massachusetts Institute of Technology. *Cambridge, MA.*

Postdoctoral Associate, Networks and Mobile Systems Group. *September 2009-*

Massachusetts Institute of Technology. *Cambridge, MA.*

Research Assistant and Teaching Assistant, Theory of Distributed Systems Group. *2004 - 2009*

Journal Publications

Calvin Newport and Nancy Lynch. Modeling Radio Networks. *Distributed Computing*. Submitted, pending revisions.

Fabian Kuhn, Nancy Lynch, and Calvin Newport. The Abstract MAC Layer. *Distributed Computing*. Accepted, publication pending.

Rachid Guerraoui, Maurice Herlihy, Petr Kouznetsov, Nancy Lynch and Calvin Newport. On the Weakest Failure Detector Ever. *Distributed Computing*, 21(5): 353–366, 2009.

Seth Gilbert, Rachid Guerraoui and Calvin Newport. Of Malicious Motes and Suspicious Sensors: On the Efficiency of Malicious Interference in Wireless Networks. *Theoretical Computer Science*, 410: 546–569, 2009.

Gregory Chockler, Murat Demirbas, Seth Gilbert, Nancy Lynch, Calvin Newport and Tina Nolte. Consensus and Collision Detectors in Radio Networks. *Distributed Computing*, 21(1): 55–84, 2008.

Calvin Newport, David Kotz, Yougu Yuan, Robert Gray, Jason Liu and Chip Elliott. Experimental Evaluation of Wireless Simulation Assumptions. *Simulation*, 83(9): 643–661, 2007.

Jason Liu, Yougu Yuan, David Nicol, Robert Gray, Calvin Newport, David Kotz and Luiz Felipe Perrone. Empirical Validation of Wireless Models in Simulations of Ad Hoc Routing Protocols. *Simulation*, 81(4): 307–323, 2005.

Selected Conference & Workshop Publications

Lenin Ravindranath, Calvin Newport, Hari Balakrishnan, and Sam Madden. Improving Wireless Network Performance Using Sensor Hints. In *Proceedings of the USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, March 2011.

Lenin Ravindranath, Calvin Newport, Hari Balakrishnan, and Sam Madden. “Extra-Sensory Perception” for Wireless Networks. In *Proceedings of the ACM Workshop on Hot Topics in Networks (HOTNETS)*, October 2010.

Alex Cornejo and Calvin Newport. Prioritized Gossip in Vehicular Networks. In *Proceedings of the ACM SIGACT/SIGMOBILE International Workshop on Foundations of Mobile Computing (DIALM-POMC)*, September, 2010.

Fabian Kuhn, Nancy Lynch, Calvin Newport, Rotem Oshman, and Andrea Richa. Broadcasting in Radio Networks with Unreliable Communication. In *Proceedings of the ACM Symposium on the Principles of Distributed Computing (PODC)*, July, 2010.

Dan Alistarh, Seth Gilbert, Rachid Guerraoui, Zarko Milosevic and Calvin Newport. Securing Every Bit: Authenticated Broadcast in Radio Networks. In *Proceedings of the ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, June, 2010.

Fabian Kuhn, Nancy Lynch, and Calvin Newport. The Abstract MAC Layer. In *Proceedings of the International Symposium on Distributed Computing (DISC)*, September 2009. **Selected for Special Awards Session. Invited for journal submission.**

Calvin Newport and Nancy Lynch. Modeling Radio Networks. In *Proceedings of the International Conference on Concurrency Theory (CONCUR)*, August 2009. **Invited for journal submission.**

Shlomi Dolev, Seth Gilbert, Rachid Guerraoui, Fabian Kuhn and Calvin Newport. The Wireless Synchronization Problem. In *Proceedings of the ACM Symposium on the Principles of Distributed Computing (PODC)*, August 2009.

Jiang Wu, Nancy Griffeth, Nancy Lynch, Calvin Newport, and Ralph Droms. Using Virtual Infrastructure to Adapt Wireline Protocols to MANET. In *Proceedings of the International Symposium on Network Computing and Applications (NCA)*, July 2009. **Winner of Best Paper award.**

Seth Gilbert, Rachid Guerraoui, Darek Kowalski and Calvin Newport. Interference-Resilient Information Exchange. In *Proceedings of the IEEE Conference on Computer Communications (INFOCOM)*, April 2009.

Shlomi Dolev, Seth Gilbert, Rachid Guerraoui and Calvin Newport. Secure Communication Over Radio Channels. In *Proceedings of the ACM Symposium on the Principles of Distributed Computing (PODC)*, August 2008.

Ling Cheung and Calvin Newport. Provably Secure Ciphertext Policy ABE. In *Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, October 2007.

Shlomi Dolev, Seth Gilbert, Rachid Guerraoui and Calvin Newport. Gossiping in a Multi-Channel Radio Network: An Oblivious Approach to Coping with Malicious Interference. In *Proceedings of the International Symposium on Distributed Computing (DISC)*, September 2007.

Rachid Guerraoui, Maurice Herlihy, Petr Kouznetsov, Nancy Lynch and Calvin Newport. On the Weakest Failure Detector Ever. In *Proceedings of the ACM Symposium on the Principles of Distributed Computing (PODC)*, August 2007. **Invited for journal submission.**

Ling Cheung, Joseph A. Cooley, Roger Khazan, and Calvin Newport. Collusion-Resistant Group Key Management Using Attribute-Based Encryption. In *Proceedings of the International Workshop on Group-Oriented Cryptographic Protocols*, July, 2007.

Matthew Brown, Seth Gilbert, Nancy Lynch, Calvin Newport, Tina Nolte, and Michael Spindel. The Virtual Node Layer: A Programming Abstraction for Wireless Sensor Networks. In *Proceedings of the International Workshop on Sensor Network Architecture (WWSNA)*, April, 2007.

Seth Gilbert, Rachid Guerraoui and Calvin Newport. Of Malicious Motes and Suspicious Sensors: On the Efficiency of Malicious Interference in Wireless Networks. In *Proceedings of the International Conference On Principles Of Distributed Systems (OPODIS)*, December 2006. **Invited for journal submission.**

Gregory Chockler, Murat Demirbas, Seth Gilbert and Calvin Newport. A Middleware Framework for Robust Applications in Wireless Ad Hoc Networks. In *Proceedings of the Allerton Conference on Communication, Control, and Computing*, September 2005.

Gregory Chockler, Murat Demirbas, Seth Gilbert, Calvin Newport and Tina Nolte. Consensus and Collision Detectors in Wireless Ad Hoc Networks. In *Proceedings of the ACM Symposium on the Principles of Distributed Computing (PODC)*, July 2005.

Gregory Chockler, Murat Demirbas, Seth Gilbert, Nancy A. Lynch, Calvin Newport, and Tina Nolte. Reconciling the Theory and Practice of (Un)Reliable Wireless Broadcast. In *Proceedings of the International Workshop on Assurance in Distributed Systems and Networks (ADSN)*, June, 2005

David Kotz, Calvin Newport, Robert Gray, Jason Liu, Yougu Yuan and Chip Elliott. Experimental Evaluation of Wireless Simulation Assumptions. In *Proceedings of the ACM International Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems*, October 2004.

Robert Gray, David Kotz, Calvin Newport, Nikita Dubrovsky, Aaron Fiske, Jason Liu, Christopher Masone, Susan McGrath and Yougu Yuan. Outdoor Experimental Comparison of Four Ad Hoc Routing Algorithms. In *Proceedings of the ACM International Symposium on Modeling, Analysis and Simulation of Wireless and Mobile Systems*, October 2004.

Teaching Experience

Teaching Assistant, **Distributed Algorithms**, Massachusetts Institute of Technology, Spring 2008.

Teaching Assistant, **Computer & Network Security**, Massachusetts Institute of Technology, Fall 2006.

Professional Activities

Program Committees. International Conference on Distributed Computing in Sensor Systems (DCOSS), 2011. ACM Workshop on Foundations of Mobile Computing (FOMC, previously DIALM-POMC), 2011. International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), 2010. International Workshop on Algorithmic Aspects of Wireless Sensor Networks (ALGOSENSOR), 2009.

Journal Reviews. Theoretical Computer Science, IEEE Transactions on Mobile Computing, IEEE Journal on Selected Areas in Communications, Information Processing Letters, IEEE Journal of Security and Communication Networks, IEEE Transactions on Computers, ACM Transactions on Sensor Networks, Journal of Systems and Software.

Conference Reviews. Symposium on the Principles of Distributed Computing (PODC), Symposium on Distributed Computing (DISC), Symposium on Mathematical Foundations of Computer Science (MFCS), International Conference on Distributed Computing Systems (ICDCS), International Parallel & Distributed Processing Symposium (IPDPS), International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), International Conference on Distributed Computing in Sensor Systems (DCOSS), International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), International Conference on Concurrency Theory (CONCUR), International Workshop on Algorithmic Aspects of Wireless Sensor Networks (ALGOSENSOR).

Presentations

Broadcasting in Radio Networks with Unreliable Communication. The ACM Symposium on the Principles of Distributed Computing (PODC). Zurich, Switzerland. July 2010.

Vehicular Networking: From Theory to Practice. Ford Motor Company. Dearborn, MI. April 2010.

Distributed Computing in the Age of Open Airwaves. The Dartmouth College Computer Science Colloquium. Hanover, NH. October 2009.

Distributed Computing in the Age of Open Airwaves. The MIT Theoretical Computer Science Colloquium. Cambridge, MA. September 2009.

Modeling Radio Networks. The International Conference on Concurrency Theory (CONCUR). Bologna, Italy. August 2009.

The Wireless Synchronization Problem. The ACM Symposium on the Principles of Distributed Computing (PODC). Calgary, Canada. August 2009.

Hardness of Broadcasting in Wireless Networks with Unreliable Communication. The ACM Symposium on the Principles of Distributed Computing (PODC). Calgary, Canada. August 2009.

Reliable Distributed Computing on Unreliable Radio Channels. The S^3 Workshop at the ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc). New Orleans, LA. May 2009.

Interference-Resilient Information Exchange. The IEEE Conference on Computer Communications (INFOCOM). Rio de Janeiro, Brazil. April 2009.

Distributed Computing in the Age of Open Airwaves. Boston University. Boston, MA. April 2009.

Distributed Computing in the Age of Open Airwaves. The Brown University Theory Lunch. Providence, RI. January 2009.

Secure Communication Over Radio Channels. The ACM Symposium on the Principles of Distributed Computing (PODC). Toronto, Canada. August 2008.

Collusion-Resistant Group Key Management Using Attribute-Based Encryption. The International Workshop on Group-Oriented Cryptographic Protocols. Wroclaw, Poland. July 2007.

A Middleware Framework for Robust Applications in Wireless Ad Hoc Networks. The Allerton Conference on Communication, Control, and Computing. Allerton, IL. September 2005.

Non-Technical Books

How to Be a High School Superstar: A Revolutionary Plan to Get into College by Standing Out (Without Burning Out). Broadway/Random House, July 2010.

How to Become a Straight-A Student: The Unconventional Strategies Real College Students Use to Score High While Studying Less. Broadway/Random House, December 2006. (3rd printing.)

How To Win at College: Surprising Secrets for Success from the Country's Top Students. Broadway/Random House. April 2005. (7th printing.) Selected for the New York Public Library's *Best Books for the Teen Age, 2006.*