MARK D. YARVIS

Portland, OR

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Education

Ph.D. in Computer Science, University of California, Los Angeles, 2001

Dissertation: *Conductor — Distributed Adaptation for Heterogeneous Networks*
Advisors: Gerald J. Popek and Peter Reiher

M.S. in Computer Science, University of California, Los Angeles, 1998

B.S. in Computer Science and Engineering, University of California, Los Angeles, 1991

Research Interests

Mobile and wireless systems, sensor networks, pervasive computing, adaptive software systems

Summary

Mark Yarvis is a seasoned technologist, with over 10 years of experience creating research visions, executing research agendas, and leading research teams. He has authored *more than two dozen peer-reviewed technical publications*. Having participated in the organization of more than 20 conferences and workshops, he has made steady investments in his research community and field. He has significant experience with *advanced development*, *prototyping*, and *trial deployments*, including Intel's Helios-award-winning shipboard sensor network deployment in conjunction with British Petroleum. With more than two dozen issued or outstanding patent applications and contributions to both products and standards, Mark has a *demonstrated ability to create technological solutions* to real problems.

Technology Expertise

- Ad hoc / mesh routing: AODV, DSR, DSDV, multi-path, multi-radio, and hierarchical routing
- Mastery of C, C#, Java, Perl, Bash, NesC; Experience with C++, Objective C, Scheme
- Embedded software development, TinyOS and Linux
- Linux kernel / driver development
- Network protocol design /development: MAC, Transport, Routing/Topology, Application layers
- TCP/IP and wireless protocols (802.11, Bluetooth, 802.15.4)
- XML, JDOC tools
- GUI development in Apple Carbon and Windows Forms (.NET FW and .NET CF)
- Linux systems administration, IP network administration

Experience

Member of Technical Staff, Trident Data Systems *1991 – 1995*

Participated in the design and management of a 3000 seat Intranet. Designed, implemented, and maintained medium-sized software projects. Developed and taught in-house technical courses. Provided consultation to the Los Angeles Sheriff's Department to develop policies and guidelines for the design and management of their computing and network facilities.

Independent Consultant *1995 – 2001*

Provided Unix and TCP/IP-based systems administration, network management, and Internet connectivity support to small businesses.

Teaching Assistant, Computer Science Department, University of California, Los Angeles *1995*

Led weekly recitations on systems programming. Prepared and graded laboratory assignments.

Research Assistant, University of California, Los Angeles *1995 – 2001*

Designed and implemented the *Conductor* distributed adaptation service, which allows automatic, reliable, and secure deployment of arbitrary adaptation modules into heterogeneous networks. Designed and implemented a kernel-level TCP interception facility for Linux. Core member of *Rumor* project: enhanced, debugged, maintained, and evaluated a peer-to-peer file replication service. 9 papers accepted and 1 book published.

Senior Staff Research Scientist, Intel Corporation *2001 – present*

Principle Investigator, Heterogeneous Sensor Network Strategic Research Project, Intel Research

- Initiated project and obtained funding from Intel Research
- Led comprehensive cross-institution evaluation of heterogeneous sensor networks
- Ad hoc networking, routing, MAC, energy management, embedded systems, TinyOS
- 8 papers accepted (INFOCOM, SECON, MONET, *et al.*) and 6 patent apps filed
- Responsible for project budgets, milestones, and deliverables

Network Protocol Architect, Communication Tech. Lab (CTL), Corporate Tech. Group (CTG)

- Led home wireless testbed project; characterized connectivity and identified key factors affecting 802.11 wireless network performance in home environments
- Participated in the development of Intel's proposal to the IEEE 802.11s Task Group, focusing on Interworking, routing, and self-configuration for layer-2 Mesh networking
- Drove development of 802.11 direct-link technology, accepted as product "Plan Of Record"
- 5 papers accepted (INFOCOM, *et. al*) and 9 patent apps filed

Lead Software Architect, Sensor Network Operations (SNO), Intel Research

- Responsible for software strategy and software architecture for SNO
- Led architecture & development of software for shipboard condition-based-maintenance sensor network; project recognized with British Petroleum "Helios Partnership Award"
- Led team of 4 R&D engineers
- 2 papers accepted (SenSys, SECON) and 5 patent apps filed

Staff Architect, Emerging Platforms Lab (EPL), Sys. Tech. Lab (STL), Corp. Tech. Group (CTG)

- Led development of end-to-end software architectures and applications for telemedicine, mobile health monitoring, and pervasive computing
- Oversight of research projects in data replication, service architectures, biometric authentication, data privacy and trust, and data representation (HL7)
- Led team of 7 researchers
- 3 papers accepted (INFOCOM, *et. al*) and 5 patent apps filed

Books and Chapters

1. Peter Reiher, Richard Guy, Kevin Eustice, Vincent Ferreria, and **Mark Yarvis**, "Co-Operative Adaptation Between End Points," In *Active Middleware Services*, Salim Hariri, Craig A. Lee, and Cauligi Raghavendra *(eds.)*, Kluwer Academic Publishers, Boston, October 2000.
2. **Mark D. Yarvis**, Peter Reiher, and Gerald Popek, *Conductor: Distributed Adaptation for Heterogeneous Networks*, Kluwer Academic Publishers, Boston, May 2002.
3. **Mark Yarvis** and Wei Ye, "Tiered Architectures in Sensor Networks," In *Handbook of Sensor Networks: Compact Wireless and Wired Sensing Systems*, Mohammad Ilyas and Imad Mahgoub (eds.), CRC Press, July 2004, pp. 13:1-13:22.
4. W. Steven Conner, John Heidemann, Lakshman Krishnamurthy, Xi Wang, and **Mark Yarvis**, "Workplace Applications of Sensor Networks," In *Wireless Sensor Networks: A Systems Perspective*, Nirupama Bulusu and Sanjay Jha *(eds.)*, Artech House, August 2005, pp. 289-308.

Journal Articles and Special Issues

1. Jun Li, **Mark Yarvis**, and Peter Reiher, "Securing Distributed Adaptation," In *Computer Networks: Special Issue on Programmable Networks*, A.T. Campbell, David Wetherall, and Raj Yavatkar *(eds.)*, 38(3):347-371, February 2002. *(invited, extended version)*
2. Lakshman Krishnamurthy, Steven Conner, **Mark Yarvis**, Jasmeet Chhabra, Carl Ellison, Chuck Brabenac, and Ernest Tsui, "Meeting the Demands of the Digital Home with High-Speed Multi-Hop Wireless Networks," In *Intel Technology Journal: Special Issue on Interoperable Home Infrastructure*, 6(4):57-68, November 2002.
3. W. Steven Conner, Jasmeet Chhabra, **Mark Yarvis**, and Lakshman Krishnamurthy, "Experimental Evaluation of Synchronization and Topology Control for In-Building Sensor Network Applications," In *Mobile Networks and Applications (MONET): Special Issue on Wireless Sensor Networks*, Parmesh Ramanathan, Ramesh Govindan, and Krishna Sivalingam *(eds.)*, 10(4):545-562, August 2005. *(invited, extended version)*

4. Changwen Liu, **Mark Yarvis**, W. Steven Conner, and Xingang Guo, "Guaranteed On-Demand Discovery of Node-Disjoint Paths in Ad Hoc Networks," In *Computer Communications Journal Special Issue on Network Coverage and Routing Schemes for Wireless Sensor Networks*, Hsiao-Hwa Chen and Yang Yang *(eds.)*, Volume 30, Issue 14-15, October 2007, pp. 2917-2930.
5. **Mark Yarvis** and Michele Zorzi *(eds.)*, Special Issue on Energy Efficient Design in Wireless Ad Hoc and Sensor Networks, *Ad Hoc Networks Journal*, Vol. 6, Issue 8, Elsevier, November 2008.

Peer-Reviewed Publications

1. **Mark Yarvis**, Peter Reiher, and Gerald J. Popek, "Conductor: A Framework for Distributed Adaptation", In *Proceedings of the Seventh Workshop on Hot Topics in Operating Systems (HotOS VII)*, Rio Rico, Arizona, March 1999, pp. 44-49.
2. **Mark Yarvis**, Peter Reiher, and Gerald J. Popek, "A Reliability Model for Distributed Adaptation," In *Proceedings of the Third IEEE Conference on Open Architectures and Network Programming (OPENARCH 2000)*, Tel-Aviv, Israel, March 2000, pp. 88-97.
3. Peter Reiher, Richard Guy, **Mark Yarvis**, and Alexey Rudenko, "Automated Planning for Open Architectures," short paper presented at OPENARCH 2000, Tel-Aviv, Israel, March 2000.
4. Peter Reiher, Richard Guy, Kevin Eustice, Vincent Ferreria, and **Mark Yarvis**, "Co-operative Adaptation Between End Points," In *Proceedings of the 2nd Annual Workshop on Active Middleware Services (AMS 2000)*, Pittsburgh, Pennsylvania, August 2000.
5. Jun Li, **Mark Yarvis**, and Peter Reiher, "Securing Distributed Adaptation," In *Proceedings of the Fourth IEEE Conference on Open Architectures and Network Programming (OPENARCH 2001)*, Anchorage, Alaska, April 2001, pp. 71-82.
6. Jun Li, Peter Reiher, Gerald Popek, **Mark Yarvis**, and Geoff Kuenning, "An Approach to Measuring Large-Scale Distributed Systems (position paper)," In *Proceedings of the IFIP 14th International Conference on Testing Communicating Systems (TestCom 2002)*, Berlin, Germany, March 2002.
7. **Mark D. Yarvis**, W. Steven Conner, Lakshman Krishnamurthy, Jasmeet Chhabra, Brent Elliott, and Alan Mainwaring, "Real-World Experiences with an Interactive Ad Hoc Sensor Network," In *Proceedings of the International Workshop on Ad Hoc Networking (IWAHN 2002)*, Vancouver, British Columbia, Canada, August 2002, pp. 143-151.
8. W. Steven Conner, Jasmeet Chhabra, **Mark Yarvis**, and Lakshman Krishnamurthy, "Experimental Evaluation of Synchronization and Topology Control for In-Building Sensor Network Applications," In *Proceedings of the Second ACM International Workshop on Wireless Sensor Networks and Applications (WSNA 2003)*, San Diego, California, September 2003, pp. 38-49.
9. Omprakash Gnawali, **Mark Yarvis**, John Heidemann, and Ramesh Govindan, "Interaction of Retransmission, Blacklisting, and Routing Metrics for Reliability in Sensor Network Routing," In *Proceedings of the First International Conference on Sensor and Ad Hoc Communications and Networks (SECON 2004)*, Santa Clara, California, October 2004, pp. 34-43. (acceptance rate: 19%)
10. **Mark Yarvis**, Nandakishore Kushalnagar, Harkirat Singh, Anand Rangarajan, York Liu, and Suresh Singh, "Exploiting Heterogeneity in Sensor Networks," In *Proceedings of the IEEE International Conference on Computer Communication (INFOCOM 2005)*, Miami, Florida, March 2005, pp. 878-890. (acceptance rate: 17%)
11. **Mark Yarvis**, Konstantina Papagiannaki, and W. Steven Conner, "Characterization of 802.11 Wireless Networks in the Home," In *Proceedings of the First Workshop on Wireless Network Measurements (WiNMee 2005)*, Trentino, Italy, April 2005.
12. Mustafa Demirhan, Mousumi Hazra, **Mark Yarvis**, and Nandakishore Kushalnagar, "Self Configuring Transmission Channel for Wireless Mesh Networks," In *Proceedings of ACM SIGCOMM Asia Workshop 2005*, Beijing, China, April 2005.
13. Nithya Ramanathan, **Mark Yarvis**, Jasmeet Chhabra, Nandakishore Kushalnagar, Lakshman Krishnamurthy, and Deobrah Estrin, "A Stream-Oriented Power Management Protocol for Low Duty Cycle Sensor Network Applications," In *Proceedings of the Second IEEE Workshop on Embedded Networked Sensors (EmNetS-II)*, Sydney, Australia, May 2005, pp. 53-62.

14. Lakshman Krishnamurthy, Robert Adler, Phil Buonadonna, Jasmeet Chhabra, Mick Flanigan, Nandakishore Kushalnagar, Lama Nachman, and **Mark Yarvis**, "Design and Deployment of Industrial Sensor Networks: Experiences from a Semiconductor Plant and the North Sea," In *Proceedings of the Third ACM Conference on Embedded Networked Sensor Systems (SenSys 2005)*, San Diego, California, November 2005, pp. 64-75. (acceptance rate: 17%)
15. Konstantina Papagiannaki, **Mark Yarvis**, and W. Steven Conner, "Experimental Characterization of Home Wireless Networks and Design Implications," In *Proceedings of the Twenty-Fifth Annual IEEE Conference on Computer Communications (INFOCOM 2006)*, Barcelona, Spain, April 2006. (acceptance rate: 18%)
16. Robert P. Adler, Jonathan Huang, Raymond Kong, Philip Muse, Lama Nachman, Rahul C. Shah, Chieh-yih Wan, and **Mark Yarvis**, "Edge Processing and Enterprise Integration: Closing the Gap on Deployable Industrial Sensor Networks," In *Proceedings of the Fourth Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2007)*, San Diego, California, June 2007, pp. 620-630. (acceptance rate: 20%)
17. Lama Nachman, Jonathan Huang, Raymond Kong, Rahul Shah, Junaith Shahabdeen, Chieh-Yih Wan, and **Mark Yarvis**, "On-Body Health Data Aggregation Using Mobile Phones," *ACM SenSys 2007 Workshop on Sensing on Everyday Mobile Phones in Support of Participatory Research*, University of New South Wales, Australia, November 2007.
18. Gang Zhou, Jian Lu, Chieh-Yih Wan, **Mark D. Yarvis**, and John A. Stankovic, "BodyQoS: Adaptive and Radio-Agnostic QoS for Body Sensor Networks," In *Proceedings of the 27th IEEE International Conference on Computer Communications (INFOCOM 2008)*, Phoenix, Arizona, April 2008. (acceptance rate: 21%) *(to appear)*
19. Janani Sriram, Minho Shin, David Kotz, Anand Rajan, Manoj Sastry, and **Mark Yarvis**, "Challenges in Data Quality Assurance in Pervasive Health Monitoring Systems," *Future of Trust In Computing Conference*, Berlin, Germany, June/July 2008. *(to appear)*

Invited Talks

1. **Mark Yarvis**, "Challenges in Distributed Adaptation," Colloquium Lecture, Computer Science Department, Harvey Mudd College, Claremont, California, March 2, 2000.
2. **Mark Yarvis**, "Ad Hoc LANs and Sensor Networks: Prime Time, Half Time, or Game Over?" Panel presentation, First IEEE International Conference on Sensor and Ad Hoc Communications and Networks (SECON 2004), Santa Clara, California, October 4, 2004.
3. Ralph Kling, Lama Nachman, and **Mark Yarvis**, "Advanced Platforms for High Performance Sensor Networks," Intel Developer Forum (IDF), San Francisco, California, August 23, 2005.
4. **Mark Yarvis**, "'Killer Apps' for Sensor Networks: Tales from the North Sea and Elsewhere," Colloquium Lecture, Computer Science Department, Portland State University, Portland, Oregon, January 23, 2006.

Standards

1. Technical contributor to proposal: 802.11s Working Group, "802.11 TGs Simple Efficient Extensible Mesh (SEE-Mesh) Proposal," doc.: IEEE 802.11-05/0562r0, June 2005.
2. Technical contributor to draft: IEEE P802.11s/D0.01, "Draft Amendment to Standard for Information Technology – Telecommunications and Information Exchange Between Systems – LAN/MAN Specific Requirements – Part 11: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications: Amendment: ESS Mesh Networking," March 2006.

Issued Patents

1. U.S. Patent No. 7,395,064: Mustafa Demirhan, Mousumi Hazra, Nandakishore Kushalnagar, and **Mark Yarvis**, "Systems and Methods of Distributed Self-Configuration for Wireless Networks," Issued July 1, 2008, assigned to Intel Corp.
2. U.S. Patent No. 7,400,248: **Mark Yarvis**, "Sensor Devices with RFID Communications," Issued July 15, 2008, assigned to Intel Corp.

Patent Applications

1. **Mark Yarvis**, "Radio Frequency Identification Tag Lock and Key," patent pending, filed March 2004, pub. app. 20060059367, assigned to Intel Corp.
2. Xiangping Qin, Mousumi Hazra, Mustafa Demirhan, and **Mark Yarvis**, "Method and Apparatus for Implementing All-to-All Communication in a Wireless Mesh Network," patent pending, filed August 2004, pub. app. 20060045064, int'l. app. PCT/US2005/027633, assigned to Intel Corp.
3. **Mark Yarvis**, "Mesh Networking with RFID Communications," patent pending, filed November 2004, pub. app. 20060109084, int'l. app. PCT/US2005/041390, assigned to Intel Corp.
4. **Mark Yarvis**, Jasmeet Chhabra, and Nandakishore Kushalnagar, "Apparatus, System and Method Capable of Low Duty Cycle Hierarchical Ad Hoc Networks," patent pending, filed December 2004, pub. app. 20060120303, assigned to Intel Corp.
5. W. Steven Conner, **Mark Yarvis**, and Anand Rangarajan, "Multichannel Mesh Network, Multichannel Mesh Router and Methods for Routing Using Bottleneck Channel Identifiers," patent pending, filed January 2005, pub. app. 20060146712, int'l. app. PCT/US2006/000485, assigned to Intel Corp.
6. **Mark Yarvis**, W. Steven Conner, and Anand Rangarajan, "Multichannel Mesh Router and Methods for Path Selection in a Multichannel Mesh Network," patent pending, filed January 2005, pub. app. 20060146718, int'l. app. PCT/US2006/000377, assigned to Intel Corp.
7. W. Steven Conner, **Mark Yarvis**, Anand Rangarajan, and Harkirat Singh, "Methods and Apparatus for Identifying a Distance-Vector Route Associated with a Wireless Mesh Network," patent pending, filed January 2005, pub. app. 20060146717, int'l. app. PCT/US2006/000752, assigned to Intel Corp.
8. **Mark Yarvis**, W. Steven Conner, Anand Rangarajan, and Harkirat Singh, "Methods and Apparatus for Providing a Transparent Data-Link Bridge Associated with a Wireless Mesh Network," patent pending, filed January 2005, pub. app. 20060146846, int'l. app. PCT/US2006/000486, assigned to Intel Corp.
9. Nandakishore Kushalnagar, Jasmeet Chhabra, and **Mark Yarvis**, "Apparatus, System and Method Capable of Node Adaptive Sleep Scheduling in Wireless Ad Hoc Networks," patent pending, filed February 2005, pub. app. 20060209715, assigned to Intel Corp.
10. Jasmeet Chhabra, Nandakishore Kushalnagar, Lama Nachman, and **Mark Yarvis**, "Mechanism for Transferring Data Between Network Nodes," patent pending, filed March 2005, pub. app. 20060242316, assigned to Intel Corp.
11. Anand Rangarajan, W. Steven Conner, and **Mark Yarvis**, "Methods and Apparatus for Providing a Dynamic On-Demand Routing Protocol," patent pending, filed May 2005, pub. app. 20060268727, int'l. app. PCT/US2006/016672, assigned to Intel Corp.
12. **Mark Yarvis**, Sumeet Sandhu, and W. Steven Conner, "Methods and Apparatus for Providing an Integrated Multi-Hop Routing and Cooperative Diversity System," patent pending, filed August 2005, pub. app. 20070041345, int'l. app. PCT/US2006/030522, assigned to Intel Corp.
13. Mousumi Hazra, W. Steven Conner, and **Mark Yarvis**, "Method and System Effecting Communications in a Wireless Communication Network," patent pending, filed August 2005, pub. app. 20070041351, assigned to Intel Corp.
14. Sumeet Sandhu, **Mark Yarvis**, Xintian Eddie Lin, and Prasanna Mulgaonka, "Apparatus, System and Method Capable of Cooperating in a Distributed Communication Wireless Network," patent pending, filed September 2005, pub. app. 20070053338, assigned to Intel Corp.
15. Nandakishore Kushalnagar, Jasmeet Chhabra, and **Mark Yarvis**, "Methodology for Scheduling Data Transfers form Nodes Using Path Information," patent pending, filed March 2006, pub. app. 20070233835, assigned to Intel Corp.
16. Rahul Shah, Nandakishore Kushalnagar, and **Mark Yarvis**, "Reduced Power Network Association in a Wireless Sensor Network," patent pending, filed August 2006, pub. app. 20080049700, assigned to Intel Corp.
17. **Mark Yarvis**, Sumeet Sandhu, and W. Steven Conner, "Device Interfaces to Integrate Cooperative Diversity and Mesh Networking," patent pending, filed September 2006, pub. app. 20080080440, assigned to Intel Corp.

18. **Mark Yarvis**, Rahul C. Shah, Chieh-Yih Wan, and Yong Wang, "Interface for a Delay-Tolerant Network," patent pending, filed March 2006, pub. app. 20080244089, assigned to Intel Corp.
19. Chieh-Yih Wan, **Mark Yarvis**, and Jens Mache, "A Lightweight Key Distribution and Management Method for Sensor Networks," patent pending, filed May 2007, pub. app. 20080292105, assigned to Intel Corp.
20. Rahul Shah and **Mark Yarvis**, "System and Method for Physiological Data Authentication and Bundling with Delayed Binding of Individual Identification," patent pending, filed September 2007, assigned to Intel Corp.
21. Rahul Shah and **Mark Yarvis**, "Secure Association Between Devices," patent pending, filed December 2007, assigned to Intel Corp.
22. Chieh-Yih Wan, Manoj Sastry, **Mark Yarvis**, and Rahul Shah, "Techniques for Routing Privacy Sensitive Information to an Output Device," patent pending, filed June 2008, assigned to Intel Corp.
23. Rahul C. Shah and **Mark D. Yarvis**, "Two-Way Authentication Between Two Communication Endpoints Using a One-Way Out-of-Band (OOB) Channel," patent pending, filed June 2008, assigned to Intel Corp.
24. David Graumann and **Mark Yarvis**, "Method and Apparatus for Scanning a Textile," patent pending, filed September 2008, assigned to Intel Corp.

Open Source Contributions

1. *BOL Authentication Library*, **Mark Yarvis**, http://lever.cs.ucla.edu/yarvis/Projects/index.html
2. *IPCept TCP Connection Interception Linux Kernel Module*, **Mark Yarvis**, http://lever.cs.ucla.edu/yarvis/Conductor/
3. *Conductor Adaptive Agent Framework*, **Mark Yarvis**, Jun Li, http://lever.cs.ucla.edu/yarvis/Conductor/
4. *Ad Hoc Routing Stack for Heterogeneous Sensor Networks*, **Mark Yarvis**, Nandakishore Kushalnagar, York Liu, Anand Rangarajan, W. Steven Conner, Lakshman Krishnamurthy, Wei Hong, http://cvs.sourceforge.net/viewcvs.py/tinyos/tinyos-1.x/contrib/hsn/
5. *CRAWDAD Data Set: Intel Home*, Konstantina Papagiannaki, **Mark Yarvis**, W. Steven Conner, April 16, 2006, http://crawdad.cs.dartmouth.edu/meta.php?name=intel/home

Professional Service

Exhibits Co-Chair, Second ACM Conference on Embedded Networked Sensor Systems (SenSys 2004)

Technical Program Committee Co-Chair, Third Annual IEEE Communications Society Conference on Sensor Communications and Networks (SECON 2006)

Member, Intel Research Council, Communications Committee, Logical Layer Subcommittee, Q4'06-present

Editorial Board Member, Ad Hoc Networks Journal, Elsevier, Q4'06-Q2'08

Technical Program Committee Co-Chair, Fourth International Conference on Body Area Networks (BodyNets 2009), March 2009

Technical Program Committee Member

- First Annual IEEE Communications Society Conference on Sensor Communications and Networks (SECON 2004)
- First IEEE Workshop on Embedded Networked Sensors (EmNetS-I, 2004)
- First International Workshop on Heterogeneous Wireless Sensor Networks (HWISE 2005)
- First International Workshop on Wireless Traffic Measurements and Modeling (WiTMeMo 2005)
- Second Annual IEEE Communications Society Conference on Sensor and Ad Hoc Communications and Networks (SECON 2005)
- Third IEEE Workshop on Embedded Networked Sensors (EmNets 2006)
- Second International Workshop on Wireless Traffic Measurements and Modeling (WiTMeMo 2006)
- IEEE/ACM International Conference on Information Processing in Sensor Networks, track on Sensor Platforms, Tools, and Design Methods (IPSN/SPOTS 2007)

- International Workshop on Wireless Network Measurement (WiNMee/WiTMeMo 2007)
- International Conference on Distributed Computing Systems (ICDCS 2007)
- Fourth Annual IEEE Communications Society Conference on Sensor, Mesh, and Ad Hoc Communications and Networks (SECON 2007)
- Eighth ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc 2007)
- The 27th Annual Conference of the IEEE Communications Society (INFOCOM 2008)
- Fifth Annual IEEE Communications Society Conference on Sensor, Mesh, and Ad Hoc Communications and Networks (SECON 2008)
- Fifth Workshop on Embedded Networked Sensors (HotEmNets 2008)
- First International Workshop on Social Aspects of Ubiquitous Computing Environments (SAUCE 2008)
- The 28th Annual Conference of the IEEE Communications Society (INFOCOM 2009)

Member, ACM, ACM SIGCOMM

Member, IEEE, IEEE Communications Society

Honors

Dean's Honors List, UCLA School of Engineering — 1988/1989

Dean's Fellowship, UCLA School of Engineering — Winter 2000, Spring 2001

Malcolm R. Stacey Memorial Fellowship (declined) — April 2001

Intel Corporate Technology Group (CTG), Communications Technology Lab (CTL), Division Recognition Award (DRA) — Q2'04

Intel Corporate Technology Group (CTG), Division Recognition Award (DRA) — Q4'04

Intel Corporate Technology Group (CTG), Systems Technology Lab (STL), Team Award — Q1'07

Intel Corporate Technology Group (CTG), Division Recognition Award (DRA) — Q3'07