

CURRICULUM VITAE

Nitin H. Vaidya
Professor and Associate Head
Department of Electrical and Computer Engineering
University of Illinois at Urbana-Champaign

Mailing address:

Coordinated Science Laboratory
1308 West Main Street, Urbana, IL 61801

E-mail: nhv@illinois.edu

Office: 217-265-5414

Web: <http://disc.ece.illinois.edu>

Employment

- 2016 – present Associate Head for Graduate Affairs, Dept. of Electrical and Computer Eng.
University of Illinois at Urbana-Champaign
- 2006 – present Professor, Department of Electrical and Computer Engineering
Affiliate Professor, Department of Computer Science
University of Illinois at Urbana-Champaign
- 2006 – 2009 Director or Co-Director, Illinois Center for Wireless Systems (ICWS)
University of Illinois at Urbana-Champaign
- 2001 – 2006 Associate Professor, Department of Electrical and Computer Engineering
University of Illinois at Urbana-Champaign
- 1998 – 2001 Associate Professor, Department of Computer Science, *Texas A&M University*
- 1993 – 1998 Assistant Professor, Department of Computer Science, *Texas A&M University*
- 1988 Engineer, *Wipro Information Technology Limited, India*

Visiting Positions

- July – August 2014 Argonne National Laboratory
- May – June 2009 Thomson Paris Research Lab, Paris
- June 2008 Technische Universität (TU), Berlin
- Sept. 1999 – Jan. 2000 Indian Institute of Technology-Bombay
- June – August 1999 Microsoft Research, Redmond
- July – August 1998 Sun Microsystems, Menlo Park
- 1992 – 1993 Visiting Assistant Professor, Texas A&M University

Education

- Ph.D., Electrical and Computer Engineering, University of Massachusetts, Amherst, 1993
- M.S., Electrical and Computer Engineering, University of Massachusetts, Amherst, 1991
- M.E., Computer Science and Engineering, Indian Institute of Science, Bangalore, 1988
- B.E., Electrical and Electronics Engineering, Birla Institute of Technology and Science, Pilani, India, 1986

Honors and Awards

- IEEE Fellow
- Distinguished Lecturer, IEEE Communications Society, 2005-2007
- Distinguished Visitor, IEEE Computer Society, 1998-2001
- CAREER award from the National Science Foundation, 1995
- Honors for teaching:
 - *List of Teachers Ranked as Excellent by Their Students*, University of Illinois at Urbana-Champaign:
 - * Fall 2016 (Distributed Algorithms graduate course)
 - * Fall 2015 (Distributed Algorithms graduate course)
 - * Spring 2013 (Distributed Algorithms graduate course)
 - * Spring 2006 (Wireless Networks undergraduate course)
 - *Graduate Faculty Teaching Excellence Award*, presented by Computer Science students at Texas A&M University, April 1999
- Honors for papers:
 1. **(2016) Finalist for Best Student Paper Award (1 of 3 finalists)**: Lili Su and Nitin H. Vaidya, “Non-Bayesian Learning in the Presence of Byzantine Adversaries,” *International Symposium on Distributed Computing (DISC)*, September 2016.
 2. **(2015) Best Student Paper Award**: For the paper *Reaching Approximate Byzantine Consensus with Multi-hop Communication*, by L. Su and N. H. Vaidya, at the 17th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), Edmonton, Canada, August 2015.
 3. **(2012) Runner-up Award**: For the paper *Exploiting Opportunistic Overhearing to Improve Performance of Mutual Exclusion in Wireless Ad Hoc Networks*, by G. Hoseinabadi and N. H. Vaidya, at the 10th International Conference on Wired/Wireless Internet Communications (WWIC), Santorini, Greece, 2012.
 4. **(2010) Best Paper Award (Networking Track)**: For the paper *Scheduling in Multi-Channel Wireless Networks*, by Vartika Bhandari and N. H. Vaidya, at the 11th International Conference on Distributed Computing and Networking (ICDCN), Kolkata, India, January 2010.
 5. **(2010) Best Paper Award**: For the paper *SHORT: A Static-Hybrid Approach for Routing Real Time Applications over Multichannel, Multi-Radio Wireless Networks*, by V. Raman and N. H. Vaidya, at the International Conference on Wired/Wireless Internet Communications (WWIC), Sweden, June 2010.
 6. **(2007) Best Student Paper Award**: For the paper *Capacity of Multi-channel Wireless Networks with Random (c, f) Assignment*, by V. Bhandari and N. H. Vaidya, at the ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), September 2007.

7. **(2003) Best Paper Award:** For the paper *Impact of Directional Antennas on Ad Hoc Routing*, by R. Roy Choudhury and N. H. Vaidya, at the Eighth International Conference on Personal Wireless Communication (PWC), Venice, September 2003.
 8. **(1998) Best Student Paper Award:** For the paper *Location-Aided Routing (LAR) in Mobile Ad Hoc Networks*, by Y.-B. Ko and N. H. Vaidya, at the ACM International Conference on Mobile Computing and Networking (MobiCom), Dallas, October 1998.
 9. **“Best of Conference”** special issues of journals:
 - **(2013)** *Distributed Computing* journal’s special issue on selected papers from ACM Symposium on Principles of Distributed Computing (PODC), 2013, an extended version of the paper *Byzantine Vector Consensus in Complete Graphs*, N. H. Vaidya and V. Garg (to be published).
 - **(2002)** *Wireless Networks* journal’s special issue on best papers from 2002 *ACM MobiCom* conference includes the paper *A Power Control MAC Protocol for Ad Hoc Networks*, E-S. Jung and N. H. Vaidya (appears in the January 2004 issue).
 - **(1999)** *Wireless Networks* journal’s special issue on selected papers from 1999 *ACM MobiCom* conference includes the paper *Analysis of TCP Performance over Mobile Ad Hoc Networks*, G. Holland and N. H. Vaidya (appears in the March-May 2002 issue).
 - **(1998)** *Wireless Networks* journal’s special issue on best papers from 1998 *ACM MobiCom* conference includes the paper *Location-Aided Routing (LAR) in Mobile Ad Hoc Networks*, Y.-B. Ko and N. H. Vaidya (appears in the September 2000 issue).
- *3M Faculty Fellow*, College of Engineering, Texas A&M University, 2000-2001
 - *Faculty Research Excellence Award*, presented by Computer Science students at Texas A&M University, April 1999
 - *TEES Select Young Investigator Award*, Texas A&M University, 1996
 - University of Massachusetts Graduate Fellowship, 1988

Selected Professional Activities

- Chair of the Steering Committee, ACM Symposium on Principles of Distributed Computing (PODC), July 2015 – 2018.
- Organizing Chair, ACM Symposium on Principles of Distributed Computing (PODC), Chicago, 2016.
- Recent Program Committee Memberships
 - 2017, 2015 and 2014 ACM Symposium on Principles of Distributed Computing (PODC)
 - 2018 and 2017 International Symposium on Distributed Computing (DISC)
 - 2015 Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)
 - 2014 ACM Conference on Mobile Computing and Networking (MobiCom)

- Editorial Responsibilities
 - Editor-in-Chief, IEEE Transactions on Mobile Computing, Jan. 2005 – Dec. 2007
 - Editor-in-Chief, ACM SIGMOBILE Mobile Computing and Communications Review (MC2R), October 2003 – December 2004
 - Editorial board member for:
 - * IEEE Journal on Selected Areas in Communication (JSAC), 2011 - December 2013
 - * IEEE/ACM Transactions on Networking, March 2001 – March 2003
 - * Foundations and Trends in Networking, February 2005 – present
 - * IEEE Transactions on Mobile Computing, December 2001 – December 2007
 - * ACM/Kluwer Wireless Networks journal, September 2000 – May 2002
 - * Computer Networks, Elsevier Science Publisher, July 2000 – August 2002
 - Guest editor of special issues:
 - * Co-Guest Editor, Special Issue on Advances in Mobile Ad Hoc Networking, IEEE Personal Communications magazine, February 2001
 - * Co-Guest Editor, *Wireless Networks* special issue on selected papers from ACM MobiCom 2003.
 - * Co-Guest Editor, *IEEE Computer* magazine, theme issue on Fault-Tolerant and Reliable Computing, April 1997
- Past Steering Committee Membership
 - Member of Steering Committee, ACM Symposium on Principles of Distributed Computing (PODC), June 2012 – July 2015.
 - Chair of the Steering Committee, ACM Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), July 2003-December 2006
 - Member of Steering Committee, ACM Conference on Wireless Network Security (WiSec) (renamed in 2012 as ACM Conference on Security and Privacy in Wireless and Mobile Networks), 2008-2012
 - Member of Steering Committee, ACM Workshop on Wireless Security (WiSe), 2002-2006
 - Member of Steering Committee, International Conference on Wired/Wireless Internet Communication (WWIC), 2005-2009
- Other Leadership Roles in Conference Organization
 - Track Chair, Fault-tolerance and Dependability track, 17th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), 2015.
 - Chair, the NSF Workshop on “Beyond Cognitive Radios”, June 2011, Urbana, Illinois.
 - Co-founder, ACM Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), started in 2000.
 - Program Co-Chair, ACM International Conference on Mobile Computing and Networking (MobiCom), September 2003

- General Chair, 2010 ACM MobiCom - ACM MobiHoc joint conference, Chicago, September 2010.
- Program Co-Chair, 12th International Conference on Distributed Computing and Networking, Bangalore, January 2011.
- Program Co-Chair, IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON), Rome, June 2009
- General Chair, ACM Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), October 2001
- Area Co-Vice Chair for Wireless and Mobile Computing, 28th International Conference on Distributed Computing Systems (ICDCS), June 2008
- Co-Chair, ACM Workshop on Wireless Security (WiSe), September 2002
- Co-Chair, ACM Workshop on Principles of Mobile Computing (POMC), 2001
- Program Co-Chair, ACM Workshop on Mobile Ad Hoc Networking and Computing, August 2000, Boston (this workshop became the MobiHoc conference from 2001).
- Area Vice Chair for Mobile Computing and Communication, 21st International Conference on Distributed Computing Systems (ICDCS), April 2001
- Co-program chair, International Workshop on Discrete Algorithms and Methods for Mobile Computing and Communication (DIAL M), August 1999
- Vice Program Chair, IEEE Workshop on Fault-Tolerant Parallel and Distributed Systems, College Station, June 1994

Tutorial Presentations

Slides for the tutorials are available from <http://disc.ece.illinois.edu>.

- Tutorial on *Resilient Distributed Consensus*: Presented at the 14th International Conference on Distributed Computing and Networking (ICDCN), 2013 (Mumbai, India).
- Tutorial on *Security and Misbehavior Handling in Wireless Ad Hoc Networks*, Presented at 2005 IEEE INFOCOM (Miami).
- Tutorial on *Mobile Ad Hoc Networks: Protocols and Security Issues* presented at the 2005 International Conference on Dependable Systems and Networks (Yokohama).
- Tutorials on *Mobile Ad Hoc Networks*: Presented at
 - 2006 IEEE Infocom (Barcelona)
 - 2004 IEEE Infocom (Hong Kong)
 - 2002 Hot Interconnects 10 Symposium (Stanford University)
 - 2001 ACM MobiCom (Rome)
 - 2000 ACM MobiCom (Boston)
 - 2000 International Vehicular Technology Conference (Fall VTC) (Boston)

- Tutorials on *TCP for Wireless and Mobile Hosts*: Presented at
 - 1999 International Vehicular Technology Conference (VTC) (Houston).
 - 1999 ACM MobiCom (Seattle)
 - 1998 ACM MobiCom (Dallas)
- Tutorial on *MAC and routing with Directional Antennas*: Presented at 2003 ACM MobiHoc (Annapolis), co-presenters Ram Ramanathan and Mineo Takai.
- Tutorial on *Design and Modelling of Medium Access Control Protocols for Wireless Ad Hoc Networks*: 2002 ACM MobiHoc (Lausanne), co-presenters Rajive Bagrodia and Mineo Takai.

Summer School Lectures

- International Summer School on Trends in Computing, Tarragona, Spain, July 2014
- Summer school, Advanced Institute of Information Technology, Seoul, July 2006
- Lipari Summer School, Italy, July 2004
- Illinois Wireless Summer School, August 2009

Selected Invited Talks

- Invited talk, Workshop on Smart and Connected Communities: Technological Foundations, Challenges and Opportunities (SCC-2018), to be presented January 2018.
- Invited talk, DIMACS Workshop on Distributed Optimization, Information Processing, and Learning, August 2017.
- Invited talk, 67th Midwest Theory Day, Indiana University, April 2017.
- Keynote talk, 9th International Symposium on Resilient Communication Systems, Chicago, August 2016.
- Keynote talk, IEEE International Conference on Computing, Networking and Communications (ICNC), Kauai, Hawaii, February 2016.
- Keynote talk, A workshop at Shanghai Jiao Tong University, Shanghai, China, November 2014
- Keynote talk, Scottish Informatics and Computer Science Alliance (SICSA) Ph.D. Conference, St. Andrews, Scotland, June 2014
- Keynote Talk, 14th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), October 2012.
- Keynote Talk, ACM Workshop on Foundations of Mobile Computing (FOMC), July 2012.

- Keynote Talk, Joint ERCIM eMobility and MobiSense workshop, held at WWIC conference, Santorini, June 2012.
- Keynote Talk, ACM 13th International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), June 2012.
- Keynote Talk, The Fourth IEEE International Workshop on Hot Topics in Mesh Networking (HotMesh), June 2012.
- Distinguished seminar, Department of Computer Science, SUNY at Stony Brook, February 2012
- SICSA Distinguished Visiting Fellow, University of Edinburgh, Scotland, August 2011
- Invited Lecture, 24th International Symposium on Distributed Computing (DISC), September 2010
- Keynote Talk, IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM), Montreal, June 2010.
- Distinguished Lecture, Linnaeus Center ACCESS, KTH-Stockholm, May 2010.
- Keynote Talk, Workshop on Reliability and Security in Wireless Networks, Spain (co-located with DISC conference), September 2009
- Distinguished lecture, College of Computing and Informatics, University of North Carolina-Charlotte, April 2009
- Keynote Talk, ACM Workshop on Challenged Networks (CHANTS), September 2008
- Keynote Talk, ACM Workshop on Wireless Network Testbeds, Experimental Evaluation and Characterization (WiNTECH), September 2008
- Keynote Talk, International Conference on Communication System Software and Middleware (COMSWARE), Bangalore, India, January 2008
- Keynote Talk, IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Network (SECON), June 2007
- Keynote Talk, 5th International Conference on Wireless/Wired Internet Communications (WWIC), Coimbra, Portugal, May 2007
- Distinguished speaker, Arizona State University, March 2007
- Keynote Talk, WINLAB Research Review, Rutgers University, November 2006
- Keynote Talk, International Conference on Algorithms, Systems, and Applications of Wireless Networks (WASA), Xi'an, China, August 2006.
- Keynote Talk, ACM Workshop on Multi-Hop Ad Hoc Networks: from Theory to Reality (REALMAN), Florence, May 2006
- Plenary Talk, Microsoft Research's Wireless Networking Summit (WiNS), Goa, India, April 2006

- Keynote Talk, Qualnet World, Atlantic City, October 2005
- Keynote speaker, International Workshop on Theoretical and Algorithmic Aspects of Wireless Ad Hoc, Sensor, and Peer to Peer Networks (TAWN), Chicago, June 2004.
- Keynote Talk, Workshop on Wireless Local Networks, Tampa, November 2001

Funding

- * denotes single investigator grants with Vaidya as sole investigator
- + denotes multi-investigator grants with Vaidya as the lead investigator
- denotes multi-investigator grants led by other investigators

- **Army Research Laboratory**, Alliance for IoBT Research on Evolving Intelligent Goal-driven Networks (IoBT REIGN), 2017-2022.
- **National Science Foundation**, *Algorithms for Smartphone Peer-to-Peer Networks*, 2017-2020.
- * **National Science Foundation**, *Networked Multi-Agent Systems: Coping with Adversarial Agents and Links*, 2016-2019.
- **National Science Foundation**, *CyPhyHouse: A Laboratory for Evolving Distributed and Mobile Cyber-Physical Systems Research*, 2016-2019.
- * **Toyota InfoTechnology Center USA**, Unrestricted funding for research on distributed algorithms, 2015-2017.
- + **Futurewei Technologies**, Unrestricted grant for research on wireless networks, 2014-2017.
- * **National Science Foundation**, *NeTS: Small: Impact of Wireless Network Characteristics on Distributed Computation*, 2014-2018.
- **National Science Foundation**, *CSR: Medium: Availability-Consistency Tradeoffs in Key-Value and NoSQL Storage Systems*, 2014-2018.
- **ABB Corporate Research Center**, *Collaborative Defense of Transmission and Distribution Protection and Control Devices Against Cyber Attacks*, 2014-17.
- **National Science Foundation**, *Distributed Asynchronous Algorithms and Software Systems for Wide-Area Monitoring of Power Systems*, 2013-18.
- * **National Science Foundation**, *Efficient CSMA in Wireless Networks: Theory, Protocol Design, and Implementation*, 2011-2014.
- * **National Science Foundation**, *EAGER: Network-Constrained Distributed Primitives*, 2010-2013.

- **Multidisciplinary University Research Initiative (MURI) program**, *Designing Reliable and Secure MANETs*, 2007-2012 (extended to 2013).
- **Boeing Corporation** through Information Trust Institute, 2010-2011 (extended to 2012)
- * **National Science Foundation**, *Workshop on Networking Research*, 2010-2011
- * **National Science Foundation**, *Wireless Summer School Workshop*, 2009-2010
- + **National Science Foundation**, *MIMO Links in Wireless Edge Networks: Cross-Layer Protocol Design*, 2008-2011
- **National Science Foundation**, *CRI: Towards Cyber-Physical Computing at Scale: A Life-Size Experimental Facility for Applied Sensor Networks Research*, 2007-2009.
- **Multidisciplinary University Research Initiative (MURI) program**, *Dynamic Ad-Hoc Wireless Networks*, 2005-2010
- * **National Science Foundation**, *Multi-Channel Wireless Mesh Networks: Capacity, Protocols, and Experimental Evaluation*, 2006-2009
- * **Boeing Corporation** through Information Trust Institute, *Dependability Through Diversity in Wireless Networks*, 2005-2009
- **Boeing Corporation** through Information Trust Institute, *Trust Management in MANETs*, 2006-2010
- **Lockheed Martin** (sub-contract on a DARPA CBMANET project), *Mobility Aware Resource Coordination for Optimization of Network Infrastructure (MARCONI)*, 2006-2007
- + **National Science Foundation**, *RFID-Based Sensor Networks Exploiting Diversity and Redundancy*, 2005-2008
- + **UIUC Critical Research Initiative Program**, *Next Generation RFID Systems: People and Object Tracking for Homeland Security Applications*, 2005-2007
- Auburn University (sub-contract on a **National Science Foundation** funded project), *CRCD/EI: 4G Wireless Engineering Sandbox*, 2004-2006
- + **National Science Foundation**, *Wireless Wind Tunnel: A Testbed for Experimental Evaluation of Wireless Networks*, 2004-2007
- * **Motorola Center for Communications**, *Design and Evaluation of Hybrid Wireless Networks*, 2002-2005
- * **National Science Foundation**, *Ad Hoc Wireless Networks Utilizing Multi-Rate and Power-Save Capabilities*, 2002-2006
- **BBN Technologies** (sub-contract on a DARPA Future Combat Systems project), *Utilizing Directional Antennas for Ad Hoc Networking (UDAAN)*, 2001-2002
- + **Aerospace Vehicle Systems Institute**, *Wireless Communication for Aircraft Systems*, 2001

- * **Microsoft Research**, gift to support research in *Wireless Technologies*, September 2000
- **Defense Advanced Research Projects Agency (DARPA)**, *Providing Survivable Real-Time Communication Service for Distributed Mission Critical Systems*, 1999-2002
- * **National Science Foundation**, *TCP-Unaware Approaches to Improve Performance of TCP Over Wireless Links*, 1999-2002
- + **National Science Foundation**, *Collaborative Proposal: Protocols for Mobile Ad Hoc Networks*, 1999-2002
- **National Science Foundation**, *Distributed Algorithms for Mobile Ad Hoc Networks*, 1999-2001
- * **National Science Foundation**, *CONACyT: Geocasting in Mobile Ad Hoc Networks Using Location Information*, 1999-2001
- + **National Science Foundation**, *CISE Research Instrumentation: Wireless Networking and Collaborative Knowledge Building Research*, 1999-2002
- * **Sun Microsystems**, gift to support research on *Performance of TCP in Mobile/Wireless Environments*, November 1998
- * **MCI Telecommunications Corporation**, *Evaluation of Broadcast Scheduling and Cache Replacement Policies*, 1998
- + **Texas Advanced Technology Program**, *Design and Performance Evaluation of Wireless Networking Protocols*, 1998-99
- * **CAREER award from National Science Foundation**, *Two-Level Failure Recovery Schemes for Multicomputers and Distributed systems*, 1995-98
- + **Texas Advanced Technology Program**, *A Framework for Design and Development of Wireless Networks and Mobile Computing Systems*, 1996-98
- * **National Science Foundation**, *Bit/Byte Bounded Error Control Codes for Byte-Organized Systems*, 1995-98
- + **National Science Foundation**, *CISE Research Instrumentation: Distributed Computing and Real-Time Networking Research*, 1996-97
- **Texas Advanced Technology Program**, *Tool Development for Fault-Tolerant Computing System Evaluation*, 1994-96

Journal Publications

- L. Su and N. H. Vaidya, “Reaching approximate Byzantine consensus with multi-hop communication,” *Information and Computation*, August 2017.
- M. R. Rahman, L. Tseng, S. Nguyen, I. Gupta and N. H. Vaidya, “Characterizing and Adapting the Consistency-Latency Tradeoff in Distributed Key-Value Stores,” *ACM Transactions on Autonomous and Adaptive Systems (TAAS)*, February 2017.

- C. Hadjicostis, N. H. Vaidya and A. Dominguez-Garcia, “Robust Distributed Average Consensus via Exchange of Running Sums,” *IEEE Transactions on Automatic Control*, June 2016.
- H. Mendes, M. Herlihy, N. H. Vaidya and V. Garg, “Multidimensional Agreement in Byzantine Systems,” *Distributed Computing*, 2015.
- L. Tseng, N. H. Vaidya and V. Bhandari, “Broadcast Using Certified Propagation Algorithm in Presence of Byzantine Faults,” *Information Processing Letters*, 2014.
- F. Wu and N. H. Vaidya, “A Strategy-Proof Radio Spectrum Auction Mechanism in Non-cooperative Wireless Networks,” *IEEE Transactions on Mobile Computing*, May 2013.
- A. D. Dominguez-Garcia, C. N. Hadjicostis, and N. H. Vaidya, Resilient Networked Control of Distributed Energy Resources, *IEEE Journal on Selected Areas in Communications: Smart Grid Communications Series*, July 2012.
- W. Yoon and N. H. Vaidya, “RFID Reader Collision Problem: Performance Analysis and Medium Access,” *Wireless Communications and Mobile Computing*, John Wiley & Sons, April 2012.
- W. Yoon and N. H. Vaidya, “A Link Layer Protocol and Link-State Routing Protocol Suite for Multi-channel Ad Hoc Networks,” *Wireless Communications and Mobile Computing*, John Wiley & Sons, January 2012.
- W. Yoon and N. H. Vaidya, “Routing Exploiting Multiple Heterogeneous Wireless Interfaces: A TCP Performance Study,” *Computer Communications* (Elsevier), January 2010.
- P. Kyasanur and N. H. Vaidya, “Capacity of Multichannel Wireless Networks Under the Protocol Model,” *IEEE/ACM Transactions on Networking*, pp. 515-527, April 2009.
- Y.-B. Ko, J.-M. Choi and N. H. Vaidya, “MAC Protocols Using Directional Antennas in IEEE 802.11 based ad hoc networks,” *Wireless Communications and Mobile Computing*, August 2008.
- N. H. Vaidya and S. R. Das, “RFID-Based Networks - Exploiting Diversity and redundancy,” *ACM Mobile Computing and Communications Review (MC2R)*, pp. 2-14, January 2008.
- M. J. Miller and N. H. Vaidya, “Ad Hoc Routing for Multilevel Power Save Protocols,” *Ad Hoc Networks* (Elsevier), pp. 210-225, April 2008.
- R. Roy Choudhury, X. Yang, Ram Ramanathan and N. H. Vaidya, “On designing MAC protocols for wireless networks using directional antennas,” *IEEE Transactions on Mobile Computing*, May 2006.
- J. So and N. H. Vaidya, “Load-Balancing Routing in Multichannel Hybrid Wireless Networks with Single Network Interface,” *IEEE Transactions on Vehicular Technology*, May 2006.
- X. Yang, N. H. Vaidya and P. Ravichandran, “Split-Channel Pipelined Packet Scheduling for Wireless Networks,” *IEEE Transactions on Mobile Computing*, March 2006.

- X. Yang and N. H. Vaidya, “A Wireless MAC Protocol Using Implicit Pipelining,” *IEEE Transactions on Mobile Computing*, March 2006.
- P. Kyasanur and N. H. Vaidya, “Routing and Link-layer Protocols for Multi-Channel Multi-Interface Ad Hoc Wireless Networks,” *ACM SIGMOBILE Mobile Computing and Communications Review (MC2R)*, January 2006.
- N. H. Vaidya, A. Dugar, S. Gupta, P. Bahl, “Distributed fair scheduling in a wireless LAN,” *IEEE Transactions on Mobile Computing*, November/December 2005.
- P. Kyasanur and N. H. Vaidya, “Selfish MAC layer misbehavior in wireless networks,” *IEEE Transactions on Mobile Computing*, September/October 2005.
- S. Biaz and N. H. Vaidya, “De-Randomizing Congestion Losses to Improve TCP Performance Over Wired-Wireless Networks,” *IEEE/ACM Transactions on Networking*, June 2005.
- M. J. Miller and N. H. Vaidya, “A MAC Protocol to Reduce Sensor Network Energy Consumption Using a Wakeup Radio,” *IEEE Transactions on Mobile Computing*, May-June 2005.
- E.-S. Jung and N. H. Vaidya, “A Power Control MAC Protocol for Ad Hoc Networks,” *ACM/Kluwer Wireless Networks*, January 2005.
- R. Roy Choudhury and N. H. Vaidya “Performance of Ad Hoc Routing Using directional antennas,” *Ad Hoc Networks* (Elsevier), March 2005.
- X. Yang and N. H. Vaidya, “Priority Scheduling in Wireless Ad Hoc Networks,” *Wireless Networks*, May 2006.
- N. Malpani, Y. Chen, N. H. Vaidya and J. Welch, “Distributed Token Circulation on Mobile Ad Hoc Networks,” *IEEE Transactions on Mobile Computing*, March/April 2005.
- S. Bhandarkar, N. Sadry, A. L. N. Reddy and N. H. Vaidya, “TCP-DCR: A Novel Protocol for Tolerating Wireless Channel Errors,” *IEEE Transactions on Mobile Computing*, September/October 2005.
- H. Lee and J. L. Welch and N. H. Vaidya, “Location Tracking Using Quorums in Mobile Ad Hoc Networks,” *Ad Hoc Networks* journal (Elsevier Science). November 2003.
- Y.-B. Ko and N. H. Vaidya, “Anycasting-Based Protocols for Geocast Service in Mobile Ad Hoc Networks,” *Computer Networks*, April 2003.
- N. H. Vaidya, M. Mehta, C. Perkins and G. Montenegro, “Delayed Duplicate Acknowledgement: A TCP-Unaware Approach to Improve Performance of TCP Over Wireless,” *Journal of Wireless Communications and Mobile Computing*, special issue on Reliable Transport Protocols for Mobile Computing, pp. 59-70, February 2002.
- S. Jiang, N. H. Vaidya and W. Zhao, “Energy Consumption of Traffic Padding Schemes in Wireless Ad Hoc Networks,” *Parallel and Distributed Computing Practices* (special issue on Security for Mission Critical Real-Time Systems), June 2001.
- Y.-B. Ko and N. H. Vaidya, “Flooding-Based Geocasting Protocols for Ad Hoc Networks,” *ACM/Baltzer Mobile Networks and Applications journal (MONET)*, December 2002.

- G. Holland and N. H. Vaidya, “Analysis of TCP Performance Over Mobile Ad Hoc Networks,” *ACM/Baltzer Wireless Networks (WINET)* special issue on selected papers from 1999 MobiCom, March-May 2002.
- S. Jiang and N. H. Vaidya, “Response Time in Data Broadcast Systems: Mean, Variance and Trade-Off,” *ACM/Baltzer Mobile Networks and Applications (MONET)*, pp. 37-48, January 2002.
- J. Walter, J. Welch, and N. H. Vaidya, “A Mutual Exclusion Algorithm for Ad Hoc Mobile Networks,” *ACM/Kluwer Wireless Networks (WINET)*, November 2001.
- Y.-B. Ko and N. H. Vaidya, “Location-Aided Routing (LAR) in Mobile Ad Hoc Networks,” *ACM/Baltzer Wireless Networks (WINET)* special issue on best papers from 1998 MobiCom, September 2000.
- N. H. Vaidya, “A Case for Two-Level Recovery Schemes,” *IEEE Transactions on Computers*, June 1998.
- N. H. Vaidya, “Staggered Consistent Checkpointing,” *IEEE Transactions on Parallel and Distributed Systems*, July 1999.
- S. Hameed and N. H. Vaidya, “Efficient Algorithms for Scheduling Data Broadcast,” *ACM/Baltzer Wireless Networks*, pp. 183–193, May 1999.
- N. H. Vaidya and S. Hameed, “Scheduling Data Broadcast in Asymmetric Communication Environments,” *ACM/Baltzer Wireless Networks*, pp. 171–182, May 1999.
- J.-H. Kim and N. H. Vaidya, “Analysis of Failure Recovery Schemes for Distributed Shared-Memory Systems,” *IEE Proceedings - Computers and Digital techniques*, vol. 146, pp. 125–130, May 1999.
- V. Akella, N. H. Vaidya, and R. Redinbo, “Asynchronous Comparison-Based Decoders for Delay-Insensitive Codes,” *IEEE Transactions on Computers*, pp. 802–811, July 1998.
- N. H. Vaidya, “A Case for Two-Level Recovery Schemes,” *IEEE Transactions on Computers*, June 1998.
- J.-H. Kim and N. H. Vaidya, “Single Fault-Tolerant Distributed Shared Memory Using Competitive Update,” *Microprocessors and Microsystems*, December 1997.
- N. H. Vaidya and S. Perisetty, “Systematic Proximity-Detecting Codes,” *IEEE Transactions on Information Theory*, pp. 1852–1863, November 1997.
- N. H. Vaidya, “Impact of Checkpoint Latency on Overhead Ratio of a Checkpointing Scheme,” *IEEE Transactions on Computers*, vol. 46, pp. 942–947, August 1997.
- D. K. Pradhan and N. H. Vaidya, “Roll-Forward and Roll-Back Recovery: Performance-Reliability Trade-Off,” *IEEE Transactions on Computers*, pp. 372–378, March 1997.
- P. Krishna, N. H. Vaidya, M. Chatterjee, and D. K. Pradhan, “A Cluster-Based Approach for Routing in Dynamic Networks,” *ACM Computer Communication Review*, pp. 372–378, March 1997.

- P. Krishna, N. H. Vaidya, and D. K. Pradhan, “Static and Adaptive Location Management in Mobile Wireless Networks,” *Computer Communications*, vol. 19, pp. 321–334, April 1996.
- N. H. Vaidya, “Comparison of Duplex and Triplex Memory Reliability,” *IEEE Transactions on Computers*, vol. 45, pp. 503–507, April 1996.
- N. H. Vaidya, “Unidirectional Bit/Byte Error Control,” *IEEE Transactions on Computers*, vol. 44, pp. 710–714, May 1995.
- N. H. Vaidya and D. K. Pradhan, “Degradable Byzantine Agreement,” *IEEE Transactions on Computers*, vol. 44, pp. 146–150, January 1995.
- D. K. Pradhan and N. H. Vaidya, “Roll-Forward Checkpointing Scheme: A Novel Fault-Tolerant Architecture,” *IEEE Transactions on Computers*, vol. 43, pp. 1163–1174, October 1994.
- N. H. Vaidya and D. K. Pradhan, “Safe System Level Diagnosis,” *IEEE Transactions on Computers*, vol. 43, pp. 367–370, March 1994.
- N. H. Vaidya, A. D. Singh, and C. M. Krishna, “Trade-Offs in Developing Fault Tolerant Software,” *IEE Proceedings (Part E) Computers and Digital Techniques*, vol. 140, pp. 320–326, November 1993.
- N. H. Vaidya and D. K. Pradhan, “Fault-Tolerant Design Strategies for High Reliability and Safety,” *IEEE Transactions on Computers*, vol. 42, pp. 1195–1206, October 1993.
- N. H. Vaidya and D. K. Pradhan, “A New Class of Bit- and Byte-Error Control Codes,” *IEEE Transactions on Information Theory*, vol. 38, pp. 1617–1623, September 1992.
- S. R. Das, N. H. Vaidya, L. M. Patnaik, and P. C. Mathias, “A Systolic Algorithm for Hidden Surface Removal,” *Parallel Processing*, vol. 15, pp. 277–290, September 1990.
- S. R. Das, N. H. Vaidya, and L. M. Patnaik, “Design and Implementation of a Hypercube Multiprocessor,” *Microprocessors and Microsystems*, vol. 14, no. 2, pp. 101–106, 1990.

Conference Publications

- S. Kulkarni and N. H. Vaidya, “Effectiveness of Delaying Timestamp Computation,” *ACM Symposium on Principles of Distributed Computing (PODC)*, July 2017.
- Z. Xiang and N. H. Vaidya, “Relaxed Byzantine Vector Consensus,” *20th International Conference on Principles of Distributed Systems (OPODIS)*, December 2016.
- **(Finalist for Best Student Paper Award (1 of 3 finalists))** L. Su and N. H. Vaidya, “Asynchronous Non-Bayesian Learning in the Presence of Crash Failures,” *18th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, November 2016.
- L. Su and N. H. Vaidya, “Robust multi-agent optimization: Coping with Byzantine agents with input redundancy,” *18th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, November 2016.

- L. Su and N. H. Vaidya, “Non-Bayesian Learning in the Presence of Byzantine Adversaries,” *International Symposium on Distributed Computing (DISC)*, September 2016.
- L. Su and N. H. Vaidya, “Fault-Tolerant Multi-Agent Optimization: Optimal Iterative Distributed Algorithms,” *ACM Symposium on Principles of Distributed Computing (PODC)*, July 2016.
- L. Su and N. H. Vaidya, “Multi-Agent Optimization in the Presence of Byzantine Adversaries: Fundamental Limits”, *American Control Conference (ACC)*, 2016.
- G. Hosseinabadi and N. H. Vaidya, “Concurrent-MAC: Increasing Concurrent Transmissions in Dense Wireless LANs,” *2016 International Conference on Computing, Networking and Communications (ICNC)*, Kauai, Hawaii, February 2016.
- **(Best Student Paper Award)** L. Su and N. H. Vaidya, “Reaching Approximate Byzantine Consensus with Multi-hop Communication,” *17th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, Edmonton, Canada, August 2015.
- S. Ahsan and N. H. Vaidya, “O-ACK: An Adaptive Wireless MAC Protocol Exploiting Opportunistic Token-Passing and Ack Piggybacking,” short paper at the *40th Annual IEEE Conference on Local Computer Networks (LCN)*, October 2015.
- L. Tseng and N. H. Vaidya, “Fault-Tolerant Consensus in Directed Graphs,” *34th Annual ACM Symposium on Principles of Distributed Computing (PODC)*, Spain, July 2015.
- J. Galvez and N. H. Vaidya, “Dynamic Switching with Heterogeneous Channels in Multi-channel 802.11 WLANs,” *IEEE SECON*, Seattle, 2015.
- S. Rana and N. H. Vaidya, “iPath: Intelligent And Optimal Path Selection for Byzantine Fault-Tolerant Communication,” *IEEE INFOCOM*, Hong Kong, April 2015 (to appear).
- Z. Huang, S. Mitra and N. H. Vaidya, “Differentially Private Distributed Optimization,” *International Conference on Distributed Computing and Networking (ICDCN 2015)*, Goa, January 2015.
- L. Tseng and N. H. Vaidya, “Asynchronous Convex Hull Consensus in the Presence of Crash Faults,” *33rd Annual ACM Symposium on Principles of Distributed Computing (PODC)*, Paris, July 2014.
- L. Tseng and N. H. Vaidya, “Iterative Approximate Consensus in the presence of Byzantine Link Failures,” *The International Conference on Networked Systems (NETYS)*, Marrakech, Morocco, May 2014.
- H. Li and N. H. Vaidya, “Optimal CSMA-based Wireless Communication with Worst-case Delay and Non-uniform Sizes,” *IEEE INFOCOM*, 2014.
- N. H. Vaidya, “Iterative Byzantine Vector Consensus in Incomplete Graphs,” *15th International Conference on Distributed Computing and Networks (ICDCN)*, India, January 2014.
- N. H. Vaidya and V. K. Garg, “Byzantine Vector Consensus in Complete Graphs,” *32nd Annual ACM Symposium on Principles of Distributed Computing (PODC)*, July 2013.

- G. Hosseinabadi and N. H. Vaidya, “Token-DCF: An Opportunistic MAC Protocol for Wireless Networks,” *the 5th International Conference on Communication Systems and Networks (COMSNETS)*, Bangalore, January 2013.
- L. Tseng and N. H. Vaidya, “Iterative Approximate Byzantine Consensus Under a Generalized Fault Model,” *International Conference on Distributed Computing and Networking (ICDCN)*, India, January 2013.
- N. H. Vaidya, C. N. Hadjicostis, and A. D. Dominguez-Garcia, “Robust Average Consensus Over Packet Dropping Links: Analysis via Coefficients of Ergodicity,” *IEEE Control and Decision Conference*, Maui, December 2012.
- C. N. Hadjicostis, A. D. Dominguez-Garcia, and N. H. Vaidya, “Resilient Average Consensus in the Presence of Heterogeneous Packet Dropping Links,” *IEEE Control and Decision Conference*, Maui, December 2012.
- S. Rana and N. H. Vaidya, “A New Direction For Source Location Privacy in Wireless Sensor Networks,” *IEEE Globecom*, December 2012.
- N. H. Vaidya, L. Tseng, and G. Liang, “Iterative Approximate Byzantine Consensus in Arbitrary Directed Graphs,” *31st Annual ACM Symposium on Principles of Distributed Computing (PODC)*, July 2012.
- G. Liang and N. H. Vaidya, “Byzantine Broadcast in Point-to-Point Networks using Local Linear Coding,” *31st Annual ACM Symposium on Principles of Distributed Computing (PODC)*, July 2012.
- S. Rana and N. H. Vaidya, “Watchdogs to the Rescue: Securing Wireless TCP.” *9th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, Seoul, 2012.
- F. Wu and N. H. Vaidya, “Workload-Aware Opportunistic Routing in Multi-Channel, Multi-Radio Wireless Mesh Networks,” *9th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, Seoul, 2012.
- **(Runner-up Award)** G. Hosseinabadi and N. H. Vaidya, “Exploiting Opportunistic Overhearing to Improve Performance of Mutual Exclusion in Wireless Ad Hoc Networks”, *10th International Conference on Wired/Wireless Internet Communications (WWIC)*, Santorini, Greece, 2012.
- G. Liang, B. Sommer and N. H. Vaidya, “Experimental Performance Comparison of Byzantine Fault-Tolerant Protocols for Data Centers,” Guanfeng Liang, Benjamin Sommer and Nitin Vaidya, *IEEE INFOCOM*, March 2012.
- G. Liang and N. H. Vaidya, “Capacity of Byzantine Consensus in Capacity Limited Point-to-Point Networks,” Guanfeng Liang and Nitin Vaidya, *4th International Conference on COMMunication Systems and NETWORKS (COMSNETS)*, January 2012.
- G. Liang and N. H. Vaidya, “Error-Free Multi-Valued Consensus with Byzantine Failures,” *ACM Symposium on Principles of Distributed Computing (PODC)*, June 2011.

- V. Raman and N. H. Vaidya, “WiSP: A Protocol for Overcoming MAC Overheads Using Packet Size Dependent Channel Widths,” *IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, June 2011.
- F. Wu and N. H. Vaidya, “SMALL: A Strategy-Proof Mechanism for Radio Spectrum Allocation,” *IEEE INFOCOM*, April 2011.
- F. Wu, N. Singh, N. H. Vaidya and G. Chen, “On Adaptive-Width Channel Allocation in Non-Cooperative, Multi-Radio Wireless Networks,” *IEEE INFOCOM*, April 2011.
- T. Kim, J. Ni, R. Srikant and N. H. Vaidya, “On the Achievable Throughput of CSMA Under Imperfect Carrier Sensing,” *IEEE INFOCOM*, April 2011.
- G. Liang and N. H. Vaidya, “Capacity of Byzantine Agreement with Finite Link Capacity,” *IEEE INFOCOM*, April 2011.
- C. Chen, G. Liang and N. H. Vaidya, “OCP: Opportunistic Carrier Prediction for Wireless Networks,” *IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*, November 2010.
- V. Wu and N. H. Vaidya, “Exploiting Space-Time Correlations in an RFID Tag Field for Localization and Tracking,” *IEEE Globecom - Wireless Networking Symposium*, December 2010.
- C.-F. Natali, V. Wu and N. H. Vaidya, “Expanding Horizon and Capture Effect in RFID Singulation,” *IEEE Globecom - Wireless Networking Symposium*, December 2010.
- V. Wu and N. H. Vaidya, “RFID Trees: A Distributed RFID Tag Storage Infrastructure for Forest Search and Rescue,” *7th IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, 2010.
- **(Best Paper Award)** V. Raman and N. H. Vaidya, “SHORT: A Static-Hybrid Approach for Routing Real Time Applications over Multichannel, Multi-Radio Wireless Networks,” *International Conference on Wired/Wireless Internet Communications (WWIC)*, June 2010.
- G. Liang, R. Agarwal, N. H. Vaidya, “When Watchdog Meets Coding,” *IEEE INFOCOM*, March 2010.
- V. Bhandari and N. H. Vaidya, “On Providing Non-uniform Scheduling Guarantees in a Wireless Network,” *Mini-Conference at IEEE INFOCOM*, March 2010.
- **(Best paper award)** V. Bhandari and N. H. Vaidya, “Scheduling in Multi-Channel Wireless Networks,” *11th International Conference on Distributed Computing and Networking*, Kolkata, January 2010.
- G. Liang and N. H. Vaidya, “Cooperation Helps Power Saving,” *IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*, October 2009.
- S. Lim, C. Kim, Y. Ko and N. H. Vaidya, “An Efficient Multicasting for Multi-Channel Multi-Interface Wireless Mesh Networks,” *IEEE MILCOM*, October 2009.

- T. H. Kim, N. H. Vaidya and Y. B. Ko, “On the Mobile Wireless Access via MIMO Relays,” *IEEE 20th International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, 2009.
- Z. Chen, X. Yang, and N. H. Vaidya, “Dynamic Spatial Backoff in Fading Environments,” *IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*, 2008
- S. Merlin, N. H. Vaidya, and M. Zorzi, “Resource Allocation in Multi-Radio Multi-Channel Multi-Hop Wireless Networks,” *IEEE INFOCOM*, 2008.
- **(Best Student Paper Award)** V. Bhandari and N. H. Vaidya, “Capacity of Multi-channel Wireless Networks with Random (c, f) Assignment,” *ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, September 2007.
- V. Bhandari and N. H. Vaidya, “Connectivity and Capacity of Multichannel Wireless Networks With Channel Switching Constraints,” in *Proceedings of IEEE INFOCOM*, Anchorage, Alaska, May 2007.
- V. Bhandari and N. H. Vaidya, “Reliable Broadcast in Wireless Networks With Probabilistic Failures,” in *Proceedings of IEEE INFOCOM*, Anchorage, Alaska, May 2007.
- C.-C. Chen, H. Luo, E. Seo, N. H. Vaidya, X. Wang, “Rate-Adaptive Framing for Interfered Wireless Networks,” *Proceedings of IEEE INFOCOM*, Anchorage, Alaska, May 2007.
- R. Roy Choudhury and N. H. Vaidya, “MAC-Layer Capture: A Problem in Wireless Multihop Networks Using Beamforming Antennas,” *Fourth Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, June 2007.
- C.-Y. Koo, V. Bhandari, J. Katz, and N. H. Vaidya, “Reliable broadcast in Radio Networks: The Bounded Collision Case,” in *ACM Symposium on Principles of Distributed Computing (PODC)*, 2006.
- P. Kyasanur and N. H. Vaidya, “Capacity of Multi-Channel Wireless Networks: Impact of Number of Channels and Interfaces,” *11th ACM International Conference on Mobile Computing and Networking (MobiCom)*, August-September 2005.
- P. Kyasanur and N. H. Vaidya “Protocol Design Challenges for Multi-Hop Dynamic Spectrum Access Networks,” *Short Paper at First IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN)*, 2005.
- V. Bhandari and N. H. Vaidya, “On Reliable Broadcast in a Radio Network,” the *Twenty-Fourth ACM Symposium on Principles of Distributed Computing (PODC)*, July 2005.
- (Invited Paper) J. So and N. H. Vaidya, “Routing and Channel Assignment in Multi-Channel Multi-Hop Wireless Networks With Single Network Interface,” *International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks (QShine)*, August 2005.
- X. Yang and N. H. Vaidya, “On Physical Carrier Sensing in Wireless Ad Hoc Networks,” *IEEE INFOCOM*, Miami, March 2005.

- M. J. Miller and N. H. Vaidya, “Improving Power Save Protocols Using Carrier Sensing for Dynamic Advertisement Window,” *IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*, November 2005.
- P. Kyasanur and N. H. Vaidya, “Routing and interface assignment in multi-channel multi-interface wireless networks”, *IEEE Wireless Communications and Networking Conference*, 2005.
- R. Roy Choudhury and N. H. Vaidya, “Deafness: A MAC Layer Problem in Ad Hoc Networks When Using Directional Antennas”, *12th IEEE International Conference on Network Protocols (ICNP)*, October 2004.
- (Invited Paper) M. J. Miller and N. H. Vaidya, “Power Save Mechanisms for Multi-Hop Wireless Networks,” *International Conference on Broadband Networks (BroadNets)*, October 2004.
- M. J. Miller and N. H. Vaidya, ”Minimizing Energy Consumption in Sensor Networks Using A Wakeup Radio,” *IEEE Wireless Communications and Networking Conference (WCNC)*, March 2004.
- W. List and N. H. Vaidya, “A Routing Protocol for K-Hop Networks,” *IEEE Wireless Communications and Networking Conference (WCNC)*, March 2004.
- K. Chen, K. Nahrstedt and N. H. Vaidya, “The Utility of Explicit Rate-Based Flow Control in Mobile Ad Hoc Networks,” *IEEE Wireless Communications and Networking Conference (WCNC)*, March 2004.
- S. Jiang and N. H. Vaidya and W. Zhao, “A Mix Route Algorithm for Mix-Net in Wireless Ad Hoc Networks,” *IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*, October 2004.
- X. Yang, J. Liu, F. Zhao and N. H. Vaidya, “A Vehicle-to-vehicle Communication Protocol for Cooperative Collision Warning,” *the First Annual International Conference on Mobile and Ubiquitous Systems: Networking and Services (MobiQuitous 2004)*, August 2004.
- J. So and N. H. Vaidya, “Multi-Channel MAC for Ad Hoc Networks: Handling Multi-Channel Hidden Terminals Using a Single Transceiver,” *ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, May 2004.
- J. Tchakarov and N. H. Vaidya, “Efficient Content Location in Wireless Ad Hoc Networks,” *IEEE International Conference on Mobile Data Management (MDM)*, January 2004.
- **(Best Paper Award)** R. Roy Choudhury and N. H. Vaidya, “Impact of Directional Antennas on Ad Hoc Routing,” *the Eighth International Conference on Personal Wireless Communication (PWC)*, Venice, September 2003.
- P. Kyasanur and N. H. Vaidya, “Detection and Handling of MAC Layer Misbehavior in Wireless Networks,” *Dependable Computing and Communications Symposium (DCC) at the International Conference on Dependable Systems and Networks (DSN)*, June 2003.
- (Invited Paper) X. Yang and N. H. Vaidya, “Explicit and Implicit Pipelining for Wireless Medium Access Control,” *Vehicular Technology Conference*, 2003

- S. Biaz and N. H. Vaidya, “Is the Round-Trip Time Correlated With the Number of Packets in Flight? (Extended Abstract),” Internet Measurement Conference (IMC), 2003.
- E.-S. Jung and N. H. Vaidya, “A Power Control MAC Protocol for Ad Hoc Wireless Networks,” *Eighth ACM International Conference on Mobile Computing and Networking (MobiCom)*, September 2002.
- R. Roy Choudhury, X. Yang, R. Ramanathan and N. H. Vaidya, “Medium Access Control in Ad Hoc Networks Using Directional Antennas,” *Eighth ACM International Conference on Mobile Computing and Networking (MobiCom)*, September 2002.
- X. Yang and N. H. Vaidya, “Priority Scheduling in Wireless Ad Hoc Networks,” *ACM Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, June 2002.
- N. H. Vaidya, “Weak Duplicate Address Detection in Mobile Ad Hoc Networks,” *ACM Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, June 2002.
- N. Malpani, N. H. Vaidya and J. L. Welch, “Distributed Token Circulation in Mobile Ad Hoc Networks,” in *9th International Conference on Network Protocols (ICNP)*, November 2001.
- G. Holland, N. H. Vaidya and P. Bahl, “A Rate-Adaptive MAC Protocol for Multi-Hop Wireless Networks,” in *Seventh Annual ACM International Conference on Mobile Computing and Networking (MobiCom)*, July 2001.
- S. Jiang, N. H. Vaidya and W. Zhao, “Dynamic Mix Method in Wireless Ad Hoc Networks,” in *MILCOM 2001*.
- A. Dugar, N. H. Vaidya and P. Bahl, “Priority and Fair Scheduling in a Wireless LAN,” in *IEEE MILCOM*, 2001.
- Y.-B. Ko and N. H. Vaidya, “GeoTORA: A Protocol for Geocasting in Mobile Ad Hoc Networks,” in *Eighth International Conference on Network Protocols (ICNP)*, Osaka, Japan, November 2000.
- N. H. Vaidya, P. Bahl, and S. Gupta, “Distributed Fair Scheduling in a Wireless LAN,” in *Sixth Annual ACM/IEEE International Conference on Mobile Computing and Networking (MobiCom)*, August 2000.
- Y.-B. Ko, V. Shankarkumar and N. H. Vaidya, “Medium Access Control Protocols Using Directional Antennas in Ad Hoc Networks,” in *IEEE INFOCOM*, March 2000.
- G. Holland and N. H. Vaidya, “Impact of Routing and Link Layers on TCP Performance in Mobile Ad Hoc Networks,” in *IEEE Wireless Communications and Networking Conference (WCNC)*, October 1999.
- G. Holland and N. H. Vaidya, “Analysis of TCP Performance Over Mobile Ad Hoc Networks,” in *Fifth Annual ACM/IEEE International Conference on Mobile Computing and Networking (MobiCom)*, August 1999.
- S. Biaz and N. Vaidya, “Discriminating Congestion Losses from Wireless Losses Using Inter-Arrival Times at the Receiver,” in *IEEE Symposium on Application-Specific Systems and Software Engineering Technology (ASSET)*, March 1999.

- **(Best Student Paper Award)** Y.-B. Ko and N. H. Vaidya, “Location-Aided Routing (LAR) in Mobile Ad Hoc Networks,” in *Fourth Annual ACM/IEEE International Conference on Mobile Computing and Networking (MobiCom)*, November 1998.
- S. Biaz and N. Vaidya, “Distinguishing Congestion Losses From Wireless Transmission Losses: A Negative Result,” in *Seventh International Conference on Computer Communications and Networks (IC3N)*, October 1998.
- S. Biaz and N. H. Vaidya, “Tolerating Location Register Failures in Mobile Environments,” in *17th IEEE Symposium on Reliable Distributed Systems*, October 1998.
- J. H. Kim and N. H. Vaidya, “A Cost Model for Distributed Shared Memory Using Competitive Update,” in *4th International Conference on High Performance Computing*, Madras, December 1997.
- J. H. Kim and N. H. Vaidya, “Analysis of One-Level and Two-Level Failure Recovery Schemes for Distributed Shared Memory,” in *5th International Conference on Advanced Computing, Bangalore*, December 1997.
- S. Hameed and N. H. Vaidya, “Log-Time Algorithms for Scheduling Single and Multiple Channel Data Broadcast,” in *Third Annual ACM/IEEE International Conference on Mobile Computing and Networking (MobiCom)*, September 1997.
- J. H. Kim and N. H. Vaidya, “Adaptive Migratory Scheme for Distributed Shared Memory,” in *11th ACM International Conference on Supercomputing (ICS)*, July 1997.
- B. S. Bakshi, P. Krishna, D. K. Pradhan, and N. H. Vaidya, “Improving Performance of TCP Over Wireless Networks,” in *International Conference on Distributed Computing Systems (ICDCS)*, May 1997.
- B. S. Bakshi, P. Krishna, D. K. Pradhan, and N. H. Vaidya, “Providing Seamless Communication in Mobile Wireless Networks,” in *21st Local Computer Network Conference*, October 1996.
- N. H. Vaidya, “On Staggered Checkpointing,” in *Eighth IEEE Symposium on Parallel and Distributed Processing (SPDP)*, October 1996.
- D. K. Pradhan, P. Krishna, and N. H. Vaidya, “Recoverable Mobile Environments: Design and Trade-Off Analysis,” in *26th International Symposium on Fault-Tolerant Computing (FTCS)*, June 1996.
- V. Akella, N. H. Vaidya, and R. Redinbo, “Limitations of VLSI Implementation of Delay-Insensitive Codes,” in *26th International Symposium on Fault-Tolerant Computing (FTCS)*, June 1996.
- J. H. Kim and N. H. Vaidya, “A Cost-Comparison Approach for Adaptive Distributed Shared Memory,” in *10th ACM International Conference on Supercomputing (ICS)*, May 1996.
- J.-H. Kim and N. H. Vaidya, “Recoverable Distributed Shared Memory Using the Competitive Update Protocol,” in *Pacific Rim International Conference on Fault-Tolerant Systems*, pp. 152–157, December 1995.

- N. H. Vaidya, “On Checkpoint Latency,” in *Pacific Rim International Conference on Fault-Tolerant Systems*, pp. 60–65, December 1995.
- N. H. Vaidya, “A Case for Two-Level Distributed Recovery Schemes,” in *ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems*, pp. 64–73, May 1995.
- S. Bulgannawar and N. H. Vaidya, “A Distributed K-Mutual Exclusion Algorithm,” in *International Conference on Distributed Computing Systems (ICDCS)*, May 1995.
- P. Krishna, M. Chatterjee, N. H. Vaidya, and D. K. Pradhan, “A Cluster-Based Approach for Routing in Ad Hoc Networks,” in *USENIX Symposium on Mobile and Location-Independent Computing*, Ann Arbor, April 1995.
- P. Krishna, N. H. Vaidya, and D. K. Pradhan, “Location Management in Distributed Mobile Environment,” in *Third International Conference on Parallel and Distributed Information Systems*, Austin, September 1994.
- P. Krishna, N. H. Vaidya, and D. K. Pradhan, “Recovery in Multicomputers With Finite Error Detection Latency,” in *International Conference on Parallel Processing*, August 1994.
- D. K. Pradhan and N. H. Vaidya, “Roll-Forward and Rollback Recovery: Performance-Reliability Trade-Off,” in *24th International Symposium on Fault-Tolerant Computing (FTCS)*, pp. 186–195, June 1994.
- N. H. Vaidya, “Unidirectional Error Control Codes,” in *23rd International Symposium on Fault-Tolerant Computing (FTCS)*, pp. 120–129, June 1993.
- N. H. Vaidya and D. K. Pradhan, “Degradable Agreement in the Presence of Byzantine Faults,” in *International Conference on Distributed Computing Systems (ICDCS)*, pp. 237–244, May 1993.
- N. H. Vaidya and D. K. Pradhan, “System Level Diagnosis: combining Detection and Location,” in *21st International Symposium on Fault-Tolerant Computing (FTCS)*, pp. 488–495, 1991.
- N. H. Vaidya and D. K. Pradhan, “Weight/Space Bounded Error Control,” in *International Conference on Information Theory and Its Applications, Hawaii*, November 1990.
- N. H. Vaidya, S. R. Das, P. C. Mathias, and L. M. Patnaik, “A Systolic Algorithm for Scanline-Based Hidden Surface Removal,” in *3rd International Conference on Supercomputing, Boston*, May 1988.

Workshops, Book Chapters, Posters and Other Publications

- Z. Xiang and N. H. Vaidya, “Brief Announcement: Relaxed Byzantine Vector Consensus,” *28th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, July 2016.
- S. Ahsan and N. H. Vaidya, “Optimized O-ACK: An Adaptive Wireless MAC Protocol for Multiple Access Points,” poster at *IEEE SECON*, June 2015.

- S. Aziz and N. H. Vaidya, “Improving Reliability and Performance of Dense-AP Network using DAPnet,” poster at *IEEE SECON*, June 2015.
- S. Ahsan and N. H. Vaidya, “Overheard ACK With Token Passing: An Optimization to 802.11 MAC Protocol,” presentation at *ACM S3 Workshop*, and a poster at *ACM MobiCom*, Maui, September 2014.
- G. Hosseinabadi and N. H. Vaidya, “Concurrent-MAC: Increasing Concurrent Transmissions in Multi-AP Wireless LANs,” Poster at *ACM MobiCom*, October 2013.
- V. K. Y. Wu, N. H. Vaidya and R. H. Campbell, “Local Real-time Neural Networks-Based Learning for Tracking in an RFID Tag Field,” poster presentation at the *5th Annual IEEE International Conference on RFID*, 2011.
- V. Wu and N. H. Vaidya, “Efficient Access Protocols for High Storage RFID,” *Poster at 7th IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, 2010.
- V. Raman, F. Wu, B. Proulx, N. H. Vaidya, “Overcoming MAC Overhead Using Packet-Size Dependent Channel Widths,” *Poster at 7th IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, 2010.
- G. Liang and N. H. Vaidya, “Capacity of Byzantine Agreement: Summary of Recent Results,” *ACM S3 Workshop at ACM MobiCom*, September 2010.
- G. Hosseinabadi and N. H. Vaidya, “Exploiting Wireless Broadcast Property to Improve Performance of Mutual Exclusion,” *N2Women Workshop at ACM MobiCom*, September 2010.
- K. Pelechrinis, T. Salonidis, H. Lundgren and N. H. Vaidya, “Experimental Characterization of 802.11n Link Quality at High Rates”, *Fifth ACM International Workshop on Wireless Network Testbeds, Experimental Evaluation and Characterization (WiNTECH)*, September 2010.
- G. Liang and N. H. Vaidya, “Brief Announcement: Capacity of Byzantine Agreement with Finite Link Capacity – Complete Characterization of Four-Node Networks,” *Brief Announcement at the ACM Symposium on Principles of Distributed Computing*, 2010.
- T. Kim, J. Ni and N. H. Vaidya, “A Distributed Throughput-Optimal CSMA,” to appear at the *5th IEEE International Workshop on Wireless Mesh Networks (WiMesh)*, 2010.
- K. Park, D. Shrestha, Y. Ko, N. H. Vaidya and L. Sha, “IEEE 802.11 WLAN for Medical-grade QoS,” *ACM International Workshop on Medical-grade Wireless Networks*, May 2009.
- V. Bhandari and N. H. Vaidya, Secure Capacity of Multi-Hop Wireless Networks with Random Key Pre-distribution, in *IEEE Workshop on Mission-Critical Networking*, April 2008.
- V. Bhandari and N. H. Vaidya, “Reliable Local Broadcast in a Wireless Network Prone to Byzantine Failures,” in *DIALM-POMC*, 2007
- J. A. Fuemmeler, N. H. Vaidya and V. V. Veeravalli, “Selecting Transmit Powers and Carrier Sense Thresholds in CSMA Protocols for Wireless Ad Hoc Networks,” *2nd Annual International Workshop on Wireless Internet (WICON)*, August 2006.

- P. Kyasanur, J. So, C. Chereddi and N. H. Vaidya, Multi-Channel Mesh Networks: Challenges and Protocols (invited paper), *IEEE Wireless Communications*, April 2006.
- C. Chereddi, P. Kyasanur and N. H. Vaidya, “Design and Implementation of a Multi-Channel Multi-Interface Network,” *REALMAN Workshop*, May 2006.
- N. H. Vaidya, J. Bernhard, V. V. Veeravalli, P. R. Kumar, and R. K. Iyer, “Illinois Wireless Wind Tunnel: A Testbed for Experimental Evaluation of Wireless Networks,” *ACM SIGCOMM Workshop on Experimental Approaches to Wireless Network Design and Analysis*, 2005.
- (Invited paper) P. Kyasanur, X. Yang and N. H. Vaidya, “Mesh Networking Protocols to Exploit Physical Layer Capabilities,” in *First IEEE Workshop on Wireless Mesh Networks (WiMesh)*, held in conjunction with *IEEE SECON*, Santa Clara, September 2005.
- R. Roy Choudhury and N. H. Vaidya, “MAC-Layer Anycasting in Wireless Ad Hoc Networks,” *Second Workshop on Hot Topics in Networks (HotNets-II)*, MIT-Cambridge, November 2003.
- N. Malpani, J. Welch, and N. H. Vaidya, “Leader Election Algorithms for Mobile Ad Hoc Networks,” in *International Workshop on Discrete Algorithms and Methods for Mobile Computing and Communications (DIAL M)*, August 2000.
- S. Jiang, N. H. Vaidya, and W. Zhao, “Routing in Packet Radio Networks to Prevent Traffic Analysis,” *IEEE Information Assurance and Security Workshop, West Point*, June 2000.
- G. Montenegro, S. Dawkins, M. Kojo, V. Margret, and N. H. Vaidya, “Long Thin Networks.” Internet Engineering Task Force RFC 2757, January 2000.
- S. Jiang and N. H. Vaidya, “Scheduling Data Broadcast to Impatient Users,” in *International Workshop on Data Engineering for Wireless and Mobile Access, Seattle*, August 1999.
- Y.-B. Ko and N. H. Vaidya, “Geocasting in Mobile Ad Hoc Networks: Location-based multicast algorithms,” in *Second IEEE Workshop on Mobile Computing Systems and Applications (WMCSA), New Orleans*, February 1999.
- S. Jiang and N. H. Vaidya, “Response Time in Data Broadcast System: Mean, Variance, and Trade-Off,” in *International Workshop on Satellite-based Information Services*, Oct. 1998.
- D. K. Pradhan, P. Krishna, and N. H. Vaidya, “Recoverable Mobile Environments: Design and Trade-Off Analysis,” in *Recovery Mechanisms in Database Systems* (V. Kumar and M. Hsu, eds.), Prentice-Hall, 1998.
- J. Walter, J. Welch, and N. H. Vaidya, “A Mutual Exclusion Algorithm for Ad Hoc Mobile Networks,” in *International Workshop on Discrete Algorithms and Methods for Mobile Computing and Communications (DIAL M)*, October 1998.
- S. Biaz and N. H. Vaidya, “Performance Analysis of a Fault-Tolerant Scheme for Location Management of Mobile Hosts,” in *IEEE Workshop on Fault-Tolerant Parallel and Distributed Systems*, April 1998.

- N. H. Vaidya and S. Hameed, “Data Broadcast in Asymmetric Environments,” in *International Workshop on Satellite-based Information Services*, pp. 38–52, Nov. 1996.
- D. K. Pradhan, B. Bakshi, J. Kim, and N. H. Vaidya, “Enhanced Tool for Evaluating the Dependability of Fault Tolerant Systems,” in *4th International Workshop on Evaluation Techniques for Dependable Systems, San Antonio*, October 1995.
- D. K. Pradhan, D. D. Sharma, and N. H. Vaidya, “Roll-Forward Checkpointing Schemes,” in *Hardware and Software Architectures for Fault Tolerance: Experiences and Perspectives, Lecture Notes in Computer Science # 774* (M. Banatre and P. A. Lee, eds.), pp. 95–116, Springer-Verlag, 1994.

Patents

- Patent number 7,519,034, Method and Apparatus for Channel Assignment Within Ad-Hoc Communication System, J. So, N. H. Vaidya, J. D. Bonta, G. Calcev, April 2009 (Assignee: Motorola, Inc.)
- Patent number 6,870,809, Fair Scheduling in Broadcast Environments, N. H. Vaidya and P. Bahl, March 2005 (Assignee: Microsoft Corporation).
- Patent number 6,795,865, Adaptively Changing Weights for Fair Scheduling in Broadcast Environments, P. Bahl and N. Vaidya, September 2004 (Assignee: Microsoft Corporation).
- Patent number 5,491,705, De Bruijn Graph Based VLSI Viterbi Decoder, D. K. Pradhan and N. H. Vaidya, February 1996 (Assignee: U.S. Army).

Ph.D. Students Graduated

1. 1996 (CS): P. Krishna (co-advised with Prof. Pradhan)
2. 1997 (CS): Jai-Hoon Kim
3. 1999 (CS): Saad Biaz
4. 2000 (CS): Young-Bae Ko
5. 2004 (CS): Gavin Holland
6. 2005 (CS): Eun-Sun Jung
7. 2005 (CS): Shu Jiang
8. 2005 (ECE): Xue Yang
9. 2006 (CS): Romit Roy Choudhury
10. 2006 (CS): Pradeep Kyasanur
11. 2006 (CS): Jungmin So

12. 2006 (CS): Matthew Miller
13. 2008 (CS): Vartika Bhandari
14. 2009 (CS): Chun-cheng Chen
15. 2012 (ECE): Vijay Raman
16. 2012 (ECE): Guanfeng Liang
17. 2013 (ECE): Ghazale Hosseinabadi
18. 2014 (ECE): Shehla Rana
19. 2016 (CS): Lewis Tseng
20. 2017 (ECE): Lili Su