

Romit Roy Choudhury

romit.rc@duke.edu

<http://people.ee.duke.edu/~romit/>

Appointments

- Nortel Networks Associate Professor,
Dept. of ECE and CS, Duke University, July 2011 to present
- Assistant Professor,
Dept. of ECE, Duke University, Sep 2006 to Jun 2011
- Visiting Researcher,
Microsoft Research, Redmond, Summer 2010

Education

- University of Illinois at Urbana-Champaign, USA
Computer Science, Ph.D., October, 2006.
- University of Illinois at Urbana-Champaign, USA
Electrical and Computer Engineering (ECE), M.S., May 2003.
- Haldia Institute of Technology, India
Computer Science, B.Tech., June 2000.

Research Interests

- *Wireless Networking*: Exploiting physical layer capabilities for designing network protocols
- *Mobile Computing*: Application-driven research using mobile phones as a sensing/computing platform

Honors and Awards

- Winner of ACM MobiSys Best Poster, 2011
- Runners Up of ACM MobiSys Demo Contest, 2011
- Winner of ACM MobiCom Student Research Competition, 2010
- Hoffmann Krippner Award for Innovations in Student Engineering, 2009
- Runners Up of ACM MobiCom Student Research Competition, 2009
- Top 2 papers, ACM Sigcomm MobiHeld, 2009
- Appointed Nortel Network Assistant Professor of ECE, 2009
- NSF CAREER Award, 2007
- Top 3 papers in IEEE MASS, 2006
- Vodafone Graduate Fellowship, 2005
- Motorola Center for Communications Fellowship, 2004 and 2003
- Best Paper Award Personal Wireless Conference (PWC) 2003
- University Silver Medal, B.Tech, 2000

Selected Professional Activities

- **Recent Invited Talks**

Texas A&M (Apr, 2012), UIUC (Oct, 2011), AT&T Labs (Aug, 2011), Intel Labs, Portland (Aug, 2011), UT Austin (Oct, 2010), Microsoft Research (Aug, 2010), Intel Labs Seattle (Jul, 2010), Bell Labs (Nov, 2009), Univ. Michigan (Oct, 2009), Tsinghua Univ (Sep, 2009), PARC (Apr, 2009), UCLA (Feb, 2009), UIUC (Nov, 2008) ...

- **Journal Area Editor:**

- IEEE Transactions on Mobile Computing (TMC)
- ACM Sigcomm Computer Communications Review (CCR)
- Computer Networks Journal (ComNet), Elsevier

- **Journal Reviewer:**

- IEEE Transaction on Networking
- ACM/IEEE Transaction on Sensor Networks
- IEEE Transactions on Wireless Communication
- IEEE Transactions on Parallel and Distributed Systems
- ACM Sigmobile Mobile Computing and Communications Review
- ACM Transactions on Sensor Networks
- Elsevier Ad Hoc Networks Journal

- **TPC member:** Sigcomm '12, MobiSys '12, '10, MobiCom '11, '10, SenSys '10, Infocom '09, etc.

- **Program Chair:** ICDCN 2011, IEEE WiMesh 2010

- **General Chair:** ACM/Sigmobile S3 Workshop 2009

- **Poster/Demo Chair:** MobiCom 2010, MobiSys 2010, SECON 2010, etc.

Research Grants

- Co-PI: NSF FIA 2010, \$300,000. Title: *“MobilityFirst: A Robust Architecture for the Future Internet”*
- PI: NSF NeTS 2010, \$240,000. Title: *“PHY-IN: Physical Layer Informed Networking ...”*
- PI: NSF NeTS 2010, \$120,000. Title: *“Logical Localization for Mobile Devices via Ambience Sensing ...”*
- PI: NSF NetSE 2009, \$357,000. Title: *“From Position to Place in Next Generation Networks ...”*
- PI: NSF NeTS 2009, \$499,876. Title: *“Transmission Reordering in Wireless Networks ...”*
- PI: NSF CAREER 2008, \$453,365. Title: *“Exploiting Antenna Capabilities in Wireless Networks ...”*
- Co-PI: NSF CSR 2007, \$340,997. Title: *“VCM: Managing Concurrent Opportunistic Sensor Nets ...”*

Industry Funding

- PI: Cisco Research 2007, \$100,000. Title: *“Exploiting Smart Antennas for Wireless Networks”*
- PI: Nokia Research 2007, \$50,000 + equipment. Title: *“Mobile Phones for Location Sensing”*
- PI: Verizon 2007, \$50,000. Title: *“Micro-Blog: Information Browsing and Searching ... ”*
- PI: Microsoft Research, Gift 2009, \$10,000 + equipment.
- PI: Microsoft Research 2010, SoRa equipment. Title: *“PHY-Informed Wireless Networking ... ”*
- PI: Intel 2012, \$90,000. Title: *“Context Awareness with mobile sensors ... ”*
- PI: HP Labs 2012, \$25,000. Title: *“Aggressive Packet Error Recovery ... ”*

Media Coverage

- SleepWell: Wall Street Journal, Washington Post, Scientific American, Engadget, Slashdot, PBS, etc.
- TagSense: ACM Technews, News&Observer, PCWorld, ScienceDaily, Yahoo, etc.

- PhonePoint Pen: Scientific American, Guardian UK, Slashdot, ABCNews, MSN, IndiaTimes, etc.
- SurroundSense: Scientific American, NSF, ACM TechNews, Yahoo News, Chronicle, etc.

Publications

1. No Need to War-Drive: Unsupervised Indoor Localization
He Wang, Souvik Sen, Ahmed Elgohary, M. Farid, Moustafa Youssef, Romit Roy Choudhury
ACM MobiSys 2012
2. Spot Localization using PHY Layer Information
Souvik Sen, Bozidar Radunovic, Romit Roy Choudhury
ACM MobiSys 2012
3. Satellites in Our Pockets: An Object Positioning System using Smartphones
Justin Manweiler, Romit Roy Choudhury
ACM MobiSys 2012
4. TapSense: Your Finger Taps have Fingerprints
Emiliano Miluzzo, Alex Varshavsky, Suhrid Balakrishnan, Romit Roy Choudhury
ACM MobiSys 2012
5. RxIP: Monitoring the Health of Home Wireless Networks
Justin Manweiler, Peter Franklin, Romit Roy Choudhury
IEEE Infocom 2012
6. SpinLoc: Spin Once to Know Your Location
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM HotMobile 2012
7. Avoiding the Rush Hours: WiFi Energy Management via Traffic Isolation
J. Manweiler, R. Roy Choudhury
IEEE Transactions on Mobile Computing, 2012.
8. Successive Interference Cancellation: Carving out MAC Layer Opportunities
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Mobile Computing, 2012
9. Carrier Sense Multiple Access with Collision Notification
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Networking, 2012
10. No Time to Countdown: Backing Off in the Frequency Domain
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiCom 2011
11. Avoiding the Rush Hours: WiFi Energy Management for Mobile Devices
Justin Manweiler, Romit Roy Choudhury
ACM MobiSys 2011
12. TagSense: A Smartphone based Approach to Automatic Image Tagging
Chuan Qin, Xuan Bao, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiSys 2011
13. Using Mobile Phones to Write in Air
Sandip Agrawal, Ionut Constandache, Sharavan Gaonkar, Romit Roy Choudhury
ACM MobiSys 2011

14. SwitchBoard: A Matchmaking System for Multiplayer Mobile Games
Justin Manweiler, Sharad Agrawal, Ming Zhang, Romit Roy Choudhury, Victor Bahl
ACM MobiSys 2011
15. PeerCast: Improving Link Layer Multicast through Cooperative Relaying
Jie Xiong, Romit Roy Choudhury
IEEE Infocom 2011
16. The Case for Context-Aware Compression
Xuan Bao, T. Narayan, A. Sani, W. Richter, R. Roy Choudhury, L. Zhong, M. Satyanarayanan
ACM Hotmobile 2011
17. Order Matters: Transmission Reordering in Wireless Networks
Justin Manweiler, Naveen Santhapuri, Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Networking, 2011
18. Listen (on the Frequency Domain) Before You Talk
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2010
19. Successive Interference Cancellation: A Back-of-the-Envelope Perspective
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2010
20. "Did You See Bob?": Human Localization using Mobile Phones
Ionut Constandache, Xuan Bao, Martin Azizyan, Romit Roy Choudhury
ACM MobiCom 2010
21. CSMA/CN: Carrier Sense Multiple Access with Collision Notification
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiCom 2010
22. MoVi: Mobile Phone based Video Highlights via Collaborative Sensing
Xuan Bao, Romit Roy Choudhury
ACM MobiSys 2010
23. CBar: Constellation Based Rate Adaptation in Wireless Networks
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
Usenix NSDI 2010
24. Towards Mobile Phone Localization without War-Driving
Ionut Constandache, Romit Roy Choudhury, Injong Rhee
IEEE Infocom 2010
25. Modeling Broadcasting using Directional Antennas in DTNs as an Epidemic Dynamics
F. Peruani, A. Maiti, S. Sadhu, H. Chate, R. Roy Choudhury, N. Ganguly
IEEE JSAC (Journal on Selected Areas of Communication), 2010
26. P2DAP: Detecting Sybil Attacks in Vehicular Ad Hoc Networks
Tong Zhou, Romit Roy Choudhury, Krish Chakrabarty, Peng Ning
IEEE JSAC (Journal on Selected Areas of Communication), 2010
27. Breaking Away from Collision Avoidance: Towards Collision Detection in Wireless Networks
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2009

28. Order Matters: Transmission Reordering in Wireless Networks
J. Manweiler, N. Santhapuri, S. Sen, R. Roy Choudhury, S. Nelakuditi, K. Munagala
ACM MobiCom 2009
29. Hiding Stars with Fireworks: Location Privacy through Camouflage
J. Meyerowitz, R. Roy Choudhury
ACM MobiCom 2009
30. SurroundSense: Mobile Phone Localization via Ambience Fingerprinting
M. Azizyan, I. Constandache, R. Roy Choudhury
ACM MobiCom 2009
31. Realtime Location Privacy Via Mobility Prediction: Creating Confusion at Crossroads
Joseph Meyerowitz, Romit Roy Choudhury
ACM Hotmobile 2009
32. EnLoc: Energy Efficient Localization for Mobile Phones
Ionut Constandache, Shravan Gaonkar, Matt Saylor, Romit Roy Choudhury, Landon Cox
IEEE Infocom 2009, Mini-conference
33. VUPoints: Collaborative Sensing and Video Recording through Mobile Phones
Xuan Bao, Romit Roy Choudhury
ACM MobiHeld 2009 (with ACM Sigcomm)
34. PhonePoint Pen: Using Mobile Phones to Write in Air
Sandip Agrawal, Ionut Constandache, Shravan Gaonkar, Romit Roy Choudhury
ACM MobiHeld 2009 (with ACM Sigcomm)
35. Message in Message (MIM): A Case for Reordering Transmissions in Wireless Networks
N. Santhapuri, J. manweiler, S. Sen, R. Roy Choudhury, S. Nelakuditi, and K. Munagala
ACM Hotnets 2008
36. Micro-Blog: Sharing and Querying Content through Mobile Phones and Social Participation
Shravan Gaonkar, Jack Li, Romit Roy Choudhury, Landon Cox, Al Schmidt
ACM MobiSys 2008
37. Link Layer Multicast using Smart Antennas: No Client Left Behind
Souvik Sen, Xiong Jie, Rahul Ghosh, Romit Roy Choudhury
IEEE ICNP 2008
38. MAC-Layer Capture: A Problem in Wireless Networks Using Beamforming Antennas,
Romit Roy Choudhury, Nitin Vaidya,
IEEE SECON 2007
39. Designing a Rate-Based Transport Protocol for Wired-Wireless Networks,
Shravan Gaonkar, Romit Roy Choudhury, L. Magalhaes, Robin Kravets,
IEEE Broadnets 2007
40. Privacy-Preserving Detection of Sybil Attacks in Vehicular Ad Hoc Networks,
Tong Zhou, Romit Roy Choudhury, Peng Ning, Krish Chakrabarty,
Mobiquitous 2007
41. On Designing MAC Protocols for Wireless Networks using Beamforming Antennas
Romit Roy Choudhury, Nitin Vaidya
IEEE Transactions of Mobile Computing (TMC), May, 2006.

42. Smart Gossip: An Adaptive Gossip-based Broadcasting Service for Sensor Networks
Romit Roy Choudhury, Pradeep Kyasanur, Indranil Gupta
IEEE MASS 2006, Nominated for Best Paper Award
43. Brownian Gossip: Exploiting Node Mobility for Diffusing Information in Wireless Networks,
Romit Roy Choudhury
Workshop on Stochasticity in Distributed Systems (StoDis), December, 2005.
44. MARP: A Multi-Agent Based Routing Protocol for Mobile Ad Hoc networks
Romit Roy Choudhury, S. Bandyopadhyay and K. Paul
Journal of Autonomous Agents and Multi-Agent Systems - Kluwer Publishers, 2004.
45. Deafness: A MAC Problem in Ad Hoc Networks when using Directional Antennas
Romit Roy Choudhury, Nitin Vaidya
IEEE ICNP 2004
46. MAC-Layer Anycasting in Wireless Ad Hoc Networks
Romit Roy Choudhury, Nitin Vaidya
ACM Hotnets 2003
47. Impact of Directional Antennas on Ad Hoc Routing
Romit Roy Choudhury, Nitin Vaidya
IFIP PWC 2003, Best Paper Award
48. Using Directional Antennas for Medium Access Control in Ad Hoc Networks
Romit Roy Choudhury, X. Yang, Ram Ramanathan and Nitin Vaidya
ACM MobiCom 2002

Contact

- Address: 130 Hudson Hall, Box 90291, Durham, NC, 27708, USA.
- Phone/Fax: 919-660-5365 (off), 919-660-5293 (fax)
- Web: <http://people.ee.duke.edu/~romit/index.html>