

Romit Roy Choudhury

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Appointments

- Associate Professor,
Dept. of ECE and CS, University of Illinois at Urbana-Champaign, Sep 2013 to present
- Nortel Networks Associate Professor,
Dept. of ECE and CS, Duke University, Sep 2006 to Aug 2013
- 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.

Honors and Awards

- 2015 ACM Sigmobility Rockstar Award
- 2015 IBM Faculty Research Award
- Best Demo, HotMobile 2015
- Best Paper Honorable Mention, UbiComp 2013
- Google Faculty Research Award, 2013
- Best Paper Candidate, ACM MobiSys 2012
- Winner of ACM MobiSys Best Poster, Runner up for ACM MobiSys demo, 2011
- Winner of ACM MobiCom Student Research Competition, 2010
- Hoffmann Krippner Award for Innovations in Engineering, 2009
- Top 2 papers, ACM Sigcomm MobiHeld, 2009
- Appointed Nortel Network Assistant Professor of ECE, 2009
- NSF CAREER Award, 2007
- 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

Professional Activities

- **Selected Keynotes and Invited Talks**
Invited talk at MIT Wireless Seminar Series, 2015
Invited talk at UC Berkeley Robotics Communication Workshop, 2014
Keynote at ACM Pervasive Urban Crowd Sensing Workshop (with UbiComp), 2013
Keynote at ACM MobiArch Workshop (in conjunction with MobiCom), 2012
Invited talk at Google, 2012
Keynote at ACM Mobile Cloud Computing Systems Workshop (in conjunction with MobiSys), 2011
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- **Journal Area Editor:**
 - IEEE Transactions on Mobile Computing (TMC)
 - ACM Sigcomm Computer Communications Review (CCR)
 - Computer Networks Journal (ComNet), Elsevier
- **TPC co-chair:**
 - ACM Hotmobile 2014
 - ACM MobiSys 2013
 - IEEE WiMesh 2010
- **TPC member:**
 - MobiSys 2015, 2014, 2012, 2010
 - Sigcomm 2012
 - MobiCom 2014, 2012, 2011, 2010
 - SenSys 2014, 2013, 2010
 - Infocom 2010, 2009

Media Coverage

- InSight: LA Times, CNET, San Francisco Chronicle, Engadget, NewScientist, Verge, ...
- SleepWell: Wall Street Journal, Washington Post, Scientific American, Engadget, Slashdot, ...
- AccelPrint: MIT Technology Review, The Telegraph UK, ...
- PhonePoint Pen: Scientific American, Guardian UK, Slashdot, ABCNews, MSN, IndiaTimes ...
- SurroundSense: Scientific American, NSF, ACM TechNews, Yahoo News ...

Publications

1. Ripple II: Faster Communications through Physical Vibrations
Nirupam Roy, Romit Roy Choudhury
Usenix NSDI 2016
2. If WiFi APs Could Move: A Measurement Study
Mahanth Gowda, Ashutosh Dhekne, Romit Roy Choudhury
WWW 2016
3. MoLe: Motion Leaks through Smart Watches
He Wang, Ted Lai, Romit Roy Choudhury
ACM MobiCom 2015
4. Communicating through Physical Vibrations
Nirupam Roy, Mahanth Gowda, Romit Roy Choudhury
ACM NSDI 2015
5. Your Daily Activity is Your Password
Sourav Dandapat, Swadhin Pradhan, Bivas Mitra, Romit Roy Choudhury, Niloy Ganguly
ACM CHI 2015
6. OverLay: Practical Mobile Augmented Reality
Puneet Jain, Justin Manweiler, Romit Roy Choudhury
ACM MobiSys 2015
7. Visual Addressing and Applications
He Wang, Xuan Bao, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiSys 2015

8. Experiences with eNav: A Low-power Vehicular Navigation System
Shaohan Hu, Lu Su, Shen Li, Shiguang Wang, et. al. **ACM UbiComp 2015.**
9. Indoor Localization: Experiences and Lessons Learnt
Dimitrios Lymberopoulos, Jie Liu, Souvik Sen, Xue Yang, Romit Roy Choudhury, Vlado Handziski
ACM/IEEE IPSN 2015
10. I am a Smartphone and I can Tell my Users Walking Direction
Nirupam Roy, He Wang, Romit Roy Choudhury
ACM MobiSys 2014
11. AccelPrint: Imperfections of Accelerometers Make Smartphones Trackable
Sanorita Dey, Nirupam Roy, Wenyan Xu, Romit Roy Choudhury, Srihari Nelakuditi
NDSS 2014
12. Infrastructure Mobility: A What-If Analysis
Mahanth Gowda, Nirupam Roy, Romit Roy Choudhury
ACM Hotnets 2014
13. Injecting Life into Toys
Songchun Fan, Hyojeong Shin, Romit Roy Choudhury
ACM HotMobile 2014
14. Backing Out of Linear Backoff in Wireless Networks
Mahanth Gowda, Nirupam Roy, Romit Roy Choudhury, Srihari Nelakuditi
ACM HotWireless 2014
15. Your Reactions Suggest You Like the Movie: Automatic Content Rating using Reaction Sensing
Xuan Bao, Songchun Fan, Romit Roy Choudhury, Alex Varshavsky, Kevin Li
ACM UbiComp 2013, Best Paper Honorable Mention
16. If You See Something, Swipe towards It: Crowdsourced Event Localization,
Wentao Ouyang, Animesh Srivastava, Romit Roy Choudhury
ACM UbiComp 2013
17. Cooperative Packet Recovery in Enterprise WLANs
Mahanth Gowda, Souvik Sen, Romit Roy Choudhury, Sung-Ju Lee
IEEE Infocom 2013
18. Predicting Length of Stay at WiFi Hotspots
Justin Manweiler, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
IEEE Infocom 2013
19. QuickSense: Fast and Energy Efficient Channel Sensing for Dynamic Spectrum Access
Sungro Yoon, Erran Li, Soung Liew, Romit Roy Choudhury, Injong Rhee, Kun Tan
IEEE Infocom 2013
20. The Case for Psychological Computing
Xuan Bao, Mahanth Gowda, Ratul Mahajan, Romit Roy Choudhury
ACM HotMobile 2013.
21. No Need to War-Drive: Unsupervised Indoor Localization
He Wang, Souvik Sen, Ahmed Elgohary, M. Farid, Moustafa Youssef, Romit Roy Choudhury
ACM MobiSys 2012

22. Spot Localization using PHY Layer Information
Souvik Sen, Bozidar Radunovic, Romit Roy Choudhury
ACM MobiSys 2012
23. Satellites in Our Pockets: An Object Positioning System using Smartphones
Justin Manweiler, Romit Roy Choudhury
ACM MobiSys 2012
24. TapSense: Your Finger Taps have Fingerprints
Emiliano Miluzzo, Alex Varshavsky, Suhrid Balakrishnan, Romit Roy Choudhury
ACM MobiSys 2012
25. Helping Mobile Apps Bootstrap with Fewer Users
Xuan Bao, Aman Kansal, David Chu, Romit Roy Choudhury, Victor Bahl, Alec Wolman
ACM UbiComp 2012
26. RxIP: Monitoring the Health of Home Wireless Networks
Justin Manweiler, Peter Franklin, Romit Roy Choudhury
IEEE Infocom 2012
27. SpinLoc: Spin Once to Know Your Location
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM HotMobile 2012
28. No Time to Countdown: Backing Off in the Frequency Domain
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiCom 2011
29. Avoiding the Rush Hours: WiFi Energy Management for Mobile Devices
Justin Manweiler, Romit Roy Choudhury
ACM MobiSys 2011, Nominated for Best Paper Award
30. TagSense: A Smartphone based Approach to Automatic Image Tagging
Chuan Qin, Xuan Bao, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiSys 2011
31. Using Mobile Phones to Write in Air
Sandip Agrawal, Ionut Constandache, Sharavan Gaonkar, Romit Roy Choudhury
ACM MobiSys 2011
32. SwitchBoard: A Matchmaking System for Multiplayer Mobile Games
Justin Manweiler, Sharad Agrawal, Ming Zhang, Romit Roy Choudhury, Victor Bahl
ACM MobiSys 2011
33. PeerCast: Improving Link Layer Multicast through Cooperative Relaying
Jie Xiong, Romit Roy Choudhury
IEEE Infocom 2011
34. Precise Indoor Localization using PHY Layer Information
Souvik Sen, Bozidar Radunovic, Romit Roy Choudhury, Tom Minka
ACM Hotnets 2011
35. The Case for Context-Aware Compression
Xuan Bao, T. Narayan, A. Sani, W. Richter, R. Roy Choudhury, L. Zhong, M. Satyanarayanan
ACM Hotmobile 2011

36. AccuRate: Constellation Based Rate Estimation in Wireless Networks
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
Usenix NSDI 2010
37. "Did You See Bob?": Human Localization using Mobile Phones
Ionut Constandache, Xuan Bao, Martin Azizyan, Romit Roy Choudhury
ACM MobiCom 2010
38. CSMA/CN: Carrier Sense Multiple Access with Collision Notification
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiCom 2010
39. MoVi: Mobile Phone based Video Highlights via Collaborative Sensing
Xuan Bao, Romit Roy Choudhury
ACM MobiSys 2010
40. Towards Mobile Phone Localization without War-Driving
Ionut Constandache, Romit Roy Choudhury, Injong Rhee
IEEE Infocom 2010
41. Listen (on the Frequency Domain) Before You Talk
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2010
42. Successive Interference Cancellation: A Back-of-the-Envelope Perspective
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2010
43. Order Matters: Transmission Reordering in Wireless Networks
J. Manweiler, N. Santhapuri, S. Sen, R. Roy Choudhury, S. Nelakuditi
ACM MobiCom 2009
44. Hiding Stars with Fireworks: Location Privacy through Camouflage
J. Meyerowitz, R. Roy Choudhury
ACM MobiCom 2009
45. SurroundSense: Mobile Phone Localization via Ambience Fingerprinting
M. Azizyan, I. Constandache, R. Roy Choudhury
ACM MobiCom 2009
46. EnLoc: Energy Efficient Localization for Mobile Phones
Ionut Constandache, Shravan Gaonkar, Matt Sayler, Romit Roy Choudhury, Landon Cox
IEEE Infocom 2009
47. Breaking Away from Collision Avoidance: Towards Collision Detection in Wireless Networks
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2009
48. Realtime Location Privacy Via Mobility Prediction: Creating Confusion at Crossroads
Joseph Meyerowitz, Romit Roy Choudhury
ACM Hotmobile 2009
49. VUPoints: Collaborative Sensing and Video Recording through Mobile Phones
Xuan Bao, Romit Roy Choudhury
ACM MobiHeld 2009 (with ACM Sigcomm)

50. PhonePoint Pen: Using Mobile Phones to Write in Air
Sandip Agrawal, Ionut Constandache, Shravan Gaonkar, Romit Roy Choudhury
ACM MobiHeld 2009 (with ACM Sigcomm)

51. 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

52. Link Layer Multicast using Smart Antennas: No Client Left Behind
Souvik Sen, Xiong Jie, Rahul Ghosh, Romit Roy Choudhury
IEEE ICNP 2008

53. 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

54. MAC-Layer Capture: A Problem in Wireless Networks Using Beamforming Antennas,
Romit Roy Choudhury, Nitin Vaidya,
IEEE SECON 2007

55. Designing a Rate-Based Transport Protocol for Wired-Wireless Networks,
Shravan Gaonkar, Romit Roy Choudhury, L. Magalhaes, Robin Kravets,
IEEE Broadnets 2007

56. Privacy-Preserving Detection of Sybil Attacks in Vehicular Ad Hoc Networks,
Tong Zhou, Romit Roy Choudhury, Peng Ning, Krish Chakrabarty,
Mobiquitous 2007

57. Deafness: A MAC Problem in Ad Hoc Networks when using Directional Antennas
Romit Roy Choudhury, Nitin Vaidya
IEEE ICNP 2004

58. MAC-Layer Anycasting in Wireless Ad Hoc Networks
Romit Roy Choudhury, Nitin Vaidya
ACM Hotnets 2003

59. Impact of Directional Antennas on Ad Hoc Routing
Romit Roy Choudhury, Nitin Vaidya
IFIP PWC 2003, Best Paper Award

60. Using Directional Antennas for Medium Access Control in Ad Hoc Networks
Romit Roy Choudhury, X. Yang, Ram Ramanathan and Nitin Vaidya
ACM MobiCom 2002

Journal Papers

1. TagSense: Automatically Captioning Pictures using Smartphones
Chuan Qin, Xuan Bao, Romit Roy Choudhury, Srihari Nelakuditi
IEEE Transactions on Mobile Computing, Feb 2013

2. Avoiding the Rush Hours: WiFi Energy Management via Traffic Isolation
J. Manweiler, R. Roy Choudhury
IEEE Transactions on Mobile Computing, 2012.

3. Successive Interference Cancellation: Carving out MAC Layer Opportunities
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Mobile Computing, 2012
4. Carrier Sense Multiple Access with Collision Notification
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Networking, 2012
5. Order Matters: Transmission Reordering in Wireless Networks
Justin Manweiler, Naveen Santhapuri, Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Networking, 2011
6. 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
7. 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
8. On Designing MAC Protocols for Wireless Networks using Beamforming Antennas
Romit Roy Choudhury, Nitin Vaidya
IEEE Transactions of Mobile Computing (TMC), May, 2006.

Research Grants

- PI: NSF 2014, Title: *“The Case for Robotic Wireless Networks”*
- Co-PI: NIH 2012, Title: *“SmokeSense: Detecting Smoking and its Antecedents”*
- Co-PI: NSF FIA 2010, Title: *“MobilityFirst: A Robust Architecture for the Future Internet”*
- PI: NSF NeTS 2010, Title: *“PHY-IN: Physical Layer Informed Networking”*
- PI: NSF NeTS 2010, Title: *“Logical Localization for Mobile Devices via Ambience Sensing”*
- PI: NSF NetSE 2009, Title: *“From Position to Place in Next Generation Networks”*
- PI: NSF NeTS 2009, Title: *“Transmission Reordering in Wireless Networks”*
- PI: NSF CAREER 2008, Title: *“Exploiting Antenna Capabilities in Wireless Networks”*
- Co-PI: NSF CSR 2007, Title: *“VCM: Managing Concurrent Opportunistic Sensor Networks”*

Industry Funding

- PI: HP Labs 2015, Sponsored Title: *“Performance of Indoor Localization System”*
- PI: Samsung 2014, Title: *“Beyond Accuracy: Other Building Blocks for Indoor Localization”*
- PI: Qualcomm 2014, Title: *“Activity Recognition for Human Centric Applications”*
- Co-PI: Huawei 2014, Title: *“High density WiFi”*
- PI: Google 2013, Title: *“Recognizing Humans without Face Recognition”*
- PI: ThyssenKrup 2013, Title: *“Location-Enabled Elevators of the Future”*
- PI: Intel 2012, Title: *“Context Awareness with mobile sensors”*
- PI: Intel 2012, Title: *“Context Aware Human-Centric Applications”*
- PI: HP Labs 2012, Title: *“Aggressive Packet Combining and Error Recovery”*
- PI: Microsoft Research 2010, SoRa equipment. Title: *“PHY-Informed Wireless Networking”*
- PI: Microsoft Research, 2009, Title: *“Research on Micro-Blog and Mobile Sensing”*
- PI: Cisco Research 2007, Title: *“Exploiting Smart Antennas for Wireless Networks”*
- PI: Nokia Research 2007, Title: *“Mobile Phones for Location Sensing”*

- PI: Verizon 2007, Title: “*Micro-Blog: Information Browsing and Searching*”

Contact

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