

Romit Roy Choudhury

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Appointments

- Professor and [Jerry Sanders III AMD Inc. Scholar](#) Aug 2017 – present
Associate Professor Sep 2013 – Aug 2017
Dept. of ECE and CS, University of Illinois at Urbana-Champaign (UIUC)
- Nortel Networks Associate Professor Aug 2011 – Aug 2013
Assistant Professor Aug 2006 – Aug 2011
Dept. of ECE and CS, Duke University
- Visiting Researcher, Intel Summer 2016
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.

Honors and Awards

- 2017 [ACM MobiSys Best Paper Award](#)
- 2017 Dean's List of Excellent Teachers (2017, 2015)
- 2017 [Named Jerry Sanders III AMD Scholar](#)
- 2016 [Distinguished Alumni Award from CS@UIUC](#)
- 2015 [ACM Sigmobility Rockstar Award](#)
- 2015 IBM Faculty Research Award
- 2013 Google Faculty Research Award
- 2013 UbiComp Best Paper Honorable Mention
- 2010 Winner of ACM MobiCom Student Research Competition
- 2009 Hoffmann Krippner Award for Innovations in Engineering
- Appointed Nortel Network Assistant Professor of ECE, 2009
- 2007 NSF CAREER Award
- 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 Plenary Speaker, NSF Career Workshop, 2017
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
...

- **Journal Area Editor:**
 - Editor, Arms Length Column, ACM GetMobile Magazine, 2016-present
 - IEEE Transactions on Mobile Computing (TMC), 2011-2014
 - ACM SIGCOMM Computer Communications Review (CCR), 2009-2011
 - Computer Networks Journal (ComNet), Elsevier, 2010-2012
- **TPC co-chair:**
 - ACM Hotmobile 2014
 - ACM MobiSys 2013
 - IEEE WiMesh 2010
- **TPC member:**
 - NSDI 2018, 2017
 - MobiSys 2015, 2014, 2012, 2010; MobiCom 2014, 2012, 2011, 2010
 - Infocom 2010, 2009; SenSys 2014, 2013, 2010
 - Sigcomm 2012

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 ...

Graduated Students

1. Mahanth Gowda (2017: Tenure track Assistant Professor, Dept. of CSE, Pennsylvania State University)
2. He Wang (2016: Tenure track Assistant Professor, Dept. of CS, Purdue University)
3. Puneet Jain (2015: Researcher at HP Labs, Palo Alto)
4. Xuan Bao (2013: Researcher at Samsung Research Labs, Santa Clara)
5. Souvik Sen (2012: HP Labs, Palo Alto)
6. Justin Manweiler (2012: IBM T. J. Watson Research Center, New York)
7. Ionut Constandache (2011: Oracle Hypervisor Group, San Jose)

Publications

1. BackDoor: Making Microphones Hear Inaudible Sounds
Nirupam Roy, Haitham Hassanieh, Romit Roy Choudhury
ACM MobiSys 2017, Best Paper Award
2. Bringing IoT to Sports Analytics
Mahanth Gowda, Sheng Shen, Ashutosh Dhekne, Romit Roy Choudhury, et. al.
Usenix NSDI 2017
3. Extending Cell Tower Coverage through Drones
Ashutosh Dhekne, Mahanth Gowda, Romit Roy Choudhury
ACM HotMobile 2017

4. SafetyNet: GPS Receivers as a Fallback for IMU Failures in Drones
Mahanth Gowda, Justin Manweiler, Ashutosh Dhekne, Romit Roy Choudhury
ACM MobiCom 2016
5. I am a Smartwatch and I can Track my User's Arm
Sheng Shen, He Wang, Romit Roy Choudhury
ACM MobiSys 2016
6. Listening through a Vibration Motor
Nirupam Roy, Romit Roy Choudhury
ACM MobiSys 2016
7. Compressing Backoff in Wireless Networks
Mahanth Gowda, Nirupam Roy, Romit Roy Choudhury, Srihari Nalakuditi
IEEE ICNP 2016
8. Ripple II: Faster Communications through Physical Vibrations
Nirupam Roy, Romit Roy Choudhury
Usenix NSDI 2016
9. If WiFi APs Could Move: A Measurement Study
Mahanth Gowda, Ashutosh Dhekne, Romit Roy Choudhury
WWW 2016
10. AutoLabel: Labeling Places from Pictures and Websites
Rufeng Meng, Sheng Shen, Romit Roy Choudhury, Srihari Nalakuditi
ACM UbiComp 2016
11. MoLe: Motion Leaks through Smart Watches
He Wang, Ted Lai, Romit Roy Choudhury
ACM MobiCom 2015
12. Communicating through Physical Vibrations
Nirupam Roy, Mahanth Gowda, Romit Roy Choudhury
ACM NSDI 2015
13. Your Daily Activity is Your Password
Sourav Dandapat, Swadhin Pradhan, Bivas Mitra, Romit Roy Choudhury, Niloy Ganguly
ACM CHI 2015
14. OverLay: Practical Mobile Augmented Reality
Puneet Jain, Justin Manweiler, Romit Roy Choudhury
ACM MobiSys 2015
15. Visual Addressing and Applications
He Wang, Xuan Bao, Romit Roy Choudhury, Srihari Nalakuditi
ACM MobiSys 2015
16. Experiences with eNav: A Low-power Vehicular Navigation System
Shaohan Hu, Lu Su, Shen Li, Shiguang Wang, et. al.
ACM UbiComp 2015.
17. Indoor Localization: Experiences and Lessons Learnt
Dimitrios Lymberopoulos, Jie Liu, Souvik Sen, Xue Yang, Romit Roy Choudhury, Vlado Handziski
ACM/IEEE IPSN 2015

18. I am a Smartphone and I can Tell my Users Walking Direction
Nirupam Roy, He Wang, Romit Roy Choudhury
ACM MobiSys 2014
19. AccelPrint: Imperfections of Accelerometers Make Smartphones Trackable
Sanorita Dey, Nirupam Roy, Wenyan Xu, Romit Roy Choudhury, Srihari Nelakuditi
NDSS 2014
20. Infrastructure Mobility: A What-If Analysis
Mahanth Gowda, Nirupam Roy, Romit Roy Choudhury
ACM Hotnets 2014
21. Injecting Life into Toys
Songchun Fan, Hyojeong Shin, Romit Roy Choudhury
ACM HotMobile 2014
22. Backing Out of Linear Backoff in Wireless Networks
Mahanth Gowda, Nirupam Roy, Romit Roy Choudhury, Srihari Nelakuditi
ACM HotWireless 2014
23. 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
24. If You See Something, Swipe towards It: Crowdsourced Event Localization,
Wentao Ouyang, Animesh Srivastava, Romit Roy Choudhury
ACM UbiComp 2013
25. Cooperative Packet Recovery in Enterprise WLANs
Mahanth Gowda, Souvik Sen, Romit Roy Choudhury, Sung-Ju Lee
IEEE Infocom 2013
26. Predicting Length of Stay at WiFi Hotspots
Justin Manweiler, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
IEEE Infocom 2013
27. 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
28. The Case for Psychological Computing
Xuan Bao, Mahanth Gowda, Ratul Mahajan, Romit Roy Choudhury
ACM HotMobile 2013.
29. No Need to War-Drive: Unsupervised Indoor Localization
He Wang, Souvik Sen, Ahmed Elgohary, M. Farid, Moustafa Youssef, Romit Roy Choudhury
ACM MobiSys 2012
30. Spot Localization using PHY Layer Information
Souvik Sen, Bozidar Radunovic, Romit Roy Choudhury
ACM MobiSys 2012
31. Satellites in Our Pockets: An Object Positioning System using Smartphones
Justin Manweiler, Romit Roy Choudhury
ACM MobiSys 2012

32. TapSense: Your Finger Taps have Fingerprints
Emiliano Miluzzo, Alex Varshavsky, Suhrud Balakrishnan, Romit Roy Choudhury
ACM MobiSys 2012
33. Helping Mobile Apps Bootstrap with Fewer Users
Xuan Bao, Aman Kansal, David Chu, Romit Roy Choudhury, Victor Bahl, Alec Wolman
ACM UbiComp 2012
34. RxIP: Monitoring the Health of Home Wireless Networks
Justin Manweiler, Peter Franklin, Romit Roy Choudhury
IEEE Infocom 2012
35. SpinLoc: Spin Once to Know Your Location
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM HotMobile 2012
36. No Time to Countdown: Backing Off in the Frequency Domain
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiCom 2011
37. Avoiding the Rush Hours: WiFi Energy Management for Mobile Devices
Justin Manweiler, Romit Roy Choudhury
ACM MobiSys 2011, Nominated for Best Paper Award
38. TagSense: A Smartphone based Approach to Automatic Image Tagging
Chuan Qin, Xuan Bao, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiSys 2011
39. Using Mobile Phones to Write in Air
Sandip Agrawal, Ionut Constandache, Sharavan Gaonkar, Romit Roy Choudhury
ACM MobiSys 2011
40. SwitchBoard: A Matchmaking System for Multiplayer Mobile Games
Justin Manweiler, Sharad Agrawal, Ming Zhang, Romit Roy Choudhury, Victor Bahl
ACM MobiSys 2011
41. PeerCast: Improving Link Layer Multicast through Cooperative Relaying
Jie Xiong, Romit Roy Choudhury
IEEE Infocom 2011
42. Precise Indoor Localization using PHY Layer Information
Souvik Sen, Bozidar Radunovic, Romit Roy Choudhury, Tom Minka
ACM Hotnets 2011
43. The Case for Context-Aware Compression
Xuan Bao, T. Narayan, A. Sani, W. Richter, R. Roy Choudhury, L. Zhong, M. Satyanarayanan
ACM Hotmobile 2011
44. AccuRate: Constellation Based Rate Estimation in Wireless Networks
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
Usenix NSDI 2010
45. "Did You See Bob?": Human Localization using Mobile Phones
Ionut Constandache, Xuan Bao, Martin Azizyan, Romit Roy Choudhury
ACM MobiCom 2010

46. CSMA/CN: Carrier Sense Multiple Access with Collision Notification
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM MobiCom 2010
47. MoVi: Mobile Phone based Video Highlights via Collaborative Sensing
Xuan Bao, Romit Roy Choudhury
ACM MobiSys 2010
48. Towards Mobile Phone Localization without War-Driving
Ionut Constandache, Romit Roy Choudhury, Injong Rhee
IEEE Infocom 2010
49. Listen (on the Frequency Domain) Before You Talk
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2010
50. Successive Interference Cancellation: A Back-of-the-Envelope Perspective
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2010
51. Order Matters: Transmission Reordering in Wireless Networks
J. Manweiler, N. Santhapuri, S. Sen, R. Roy Choudhury, S. Nelakuditi
ACM MobiCom 2009
52. Hiding Stars with Fireworks: Location Privacy through Camouflage
J. Meyerowitz, R. Roy Choudhury
ACM MobiCom 2009
53. SurroundSense: Mobile Phone Localization via Ambience Fingerprinting
M. Azizyan, I. Constandache, R. Roy Choudhury
ACM MobiCom 2009
54. EnLoc: Energy Efficient Localization for Mobile Phones
Ionut Constandache, Shravan Gaonkar, Matt Saylor, Romit Roy Choudhury, Landon Cox
IEEE Infocom 2009
55. Breaking Away from Collision Avoidance: Towards Collision Detection in Wireless Networks
Souvik Sen, Naveen Santhapuri, Romit Roy Choudhury, Srihari Nelakuditi
ACM Hotnets 2009
56. Realtime Location Privacy Via Mobility Prediction: Creating Confusion at Crossroads
Joseph Meyerowitz, Romit Roy Choudhury
ACM Hotmobile 2009
57. VUPoints: Collaborative Sensing and Video Recording through Mobile Phones
Xuan Bao, Romit Roy Choudhury
ACM MobiHeld 2009 (with ACM Sigcomm)
58. PhonePoint Pen: Using Mobile Phones to Write in Air
Sandip Agrawal, Ionut Constandache, Shravan Gaonkar, Romit Roy Choudhury
ACM MobiHeld 2009 (with ACM Sigcomm)
59. 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

60. Link Layer Multicast using Smart Antennas: No Client Left Behind
Souvik Sen, Xiong Jie, Rahul Ghosh, Romit Roy Choudhury
IEEE ICNP 2008
61. 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
62. MAC-Layer Capture: A Problem in Wireless Networks Using Beamforming Antennas,
Romit Roy Choudhury, Nitin Vaidya,
IEEE SECON 2007
63. Designing a Rate-Based Transport Protocol for Wired-Wireless Networks,
Shravan Gaonkar, Romit Roy Choudhury, L. Magalhaes, Robin Kravets,
IEEE Broadnets 2007
64. Privacy-Preserving Detection of Sybil Attacks in Vehicular Ad Hoc Networks,
Tong Zhou, Romit Roy Choudhury, Peng Ning, Krish Chakrabarty,
Mobiquitous 2007
65. Deafness: A MAC Problem in Ad Hoc Networks when using Directional Antennas
Romit Roy Choudhury, Nitin Vaidya
IEEE ICNP 2004
66. MAC-Layer Anycasting in Wireless Ad Hoc Networks
Romit Roy Choudhury, Nitin Vaidya
ACM Hotnets 2003
67. Impact of Directional Antennas on Ad Hoc Routing
Romit Roy Choudhury, Nitin Vaidya
IFIP PWC 2003, Best Paper Award
68. 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. SemanticSLAM: Using Environment Landmarks for Unsupervised Indoor Localization
H. Abdelnasir, R. Samir, A. Elgohary, M. Alzantot, H. Wang, S. Sen, R. Roy Choudhury, M. Youssef
IEEE Transactions on Mobile Computing, 2015.
2. TagSense: Automatically Captioning Pictures using Smartphones
Chuan Qin, Xuan Bao, Romit Roy Choudhury, Srihari Nelakuditi
IEEE Transactions on Mobile Computing, Feb 2013
3. Avoiding the Rush Hours: WiFi Energy Management via Traffic Isolation
J. Manweiler, R. Roy Choudhury
IEEE Transactions on Mobile Computing, 2012.
4. Successive Interference Cancellation: Carving out MAC Layer Opportunities
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Mobile Computing, 2012
5. Carrier Sense Multiple Access with Collision Notification
Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Networking, 2012

6. Order Matters: Transmission Reordering in Wireless Networks
Justin Manweiler, Naveen Santhapuri, Souvik Sen, Romit Roy Choudhury, Srihari Nelakuditi
IEEE/ACM Transactions on Networking, 2011
7. 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
8. 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
9. On Designing MAC Protocols for Wireless Networks using Beamforming Antennas
Romit Roy Choudhury, Nitin Vaidya
IEEE Transactions of Mobile Computing (TMC), May, 2006.

Patents and Technology Transfer

- Licensed “Unsupervised Indoor Localization (UnLoc)” to Samsung
- Systems and methods for establishing communications between mobile device users, #9294428, co-authored with Kinectus, LLC
- Unsupervised Indoor Localization and Heading Direction Estimation, #20150281910, co-authored with Duke University students
- Systems and methods for defining a geographic position of an object of event ... #20140365111, co-authored with Duke Medical School faculty
- Virtual sensor development #8775337, co-authored with researchers from Microsoft Research, Redmond
- Method and apparatus for content rating using reaction sensing #20130339433, co-authored with researchers from ATT Labs

Contact

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