

NIRUPAM ROY

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

nroy8@illinois.edu
478-220-1508
<http://nroy8.web.engr.illinois.edu>

EDUCATION

PhD Candidate, Electrical and Computer Engineering
University of Illinois at Urbana-Champaign
Research Interest: Mobile Computing and Wireless Systems
Advisor: Dr. Romit Roy Choudhury

Master of Science, Computer Science and Engineering, 2013
University of South Carolina
GPA: 4.0/4.0 (**Outstanding Thesis Award**)
Advisor: Dr. Srihari Nelakuditi

Bachelor of Engineering, Computer Science and Technology, 2007
IEST (formerly B.E.College), Shibpur
GPA: 3.9/4.0 (**Best Thesis Award**)
Advisor: Dr. Abhik Mukherjee

AWARDS & HONORS

- Best paper award at MobiSys, 2017
- Research selected for SIGMOBILE Highlights 2017
- Qualcomm Innovation Fellowship (QInF), 2016 finalist
- Joan and Lalit Bahl Fellowship, 2015-2017 in ECE, UIUC as outstanding graduate student.
- M. E. Van Valkenburg Graduate Research Award and Fellowship, 2015 in ECE, UIUC for outstanding research in the areas of circuits, systems, or computers
- Outstanding thesis award, 2013 for MS thesis at the University of South Carolina
- Best poster runner-up at HotMobile, 2013 for the poster titled ‘Leveraging Imperfections of Sensors for Fingerprinting Smartphones’
- Best undergraduate thesis award, 2007 at the IEST (formerly B.E.College), Shibpur
- 10th rank in Secondary Examination(2001) among around 700,000 examinees, according to the merit list published by ‘West Bengal Board of Secondary Education’

PUBLICATIONS

BackDoor: Making Microphones Hear Inaudible Sounds
Nirupam Roy, Haitham Hassanieh, Romit Roy Choudhury
ACM MobiSys 2017

Ripple II: Faster Communication through Physical Vibration
Nirupam Roy, Romit Roy Choudhury
NSDI 2016

Listening through a Vibration Motor
Nirupam Roy, Romit Roy Choudhury
ACM MobiSys 2016

Compressing Backoff in CSMA Networks
Mahanth Gowda, **Nirupam Roy**, Romit Roy Choudhury, Srihari Nelakuditi
IEEE ICNP 2016

Ripple: Communicating through Physical Vibrations
Nirupam Roy, Mahanth K Gowda, Romit Roy Choudhury
NSDI 2015

I am a Smartphone and I can Tell my User's Walking Direction
Nirupam Roy, He Wang, Romit Roy Choudhury
ACM MobiSys 2014

AccelPrint: Imperfections of Accelerometers Make Smartphones Trackable
Nirupam Roy, S. Dey (Co-primary author), W. Xu, R. Roy Choudhury, S. Nelakuditi
NDSS 2014

Infrastructure Mobility: A What-if Analysis
Mahanth K Gowda, **Nirupam Roy**, Romit Roy Choudhury
ACM HotNets 2014

Backing out of Linear Backoff in Wireless Networks
Mahanth K Gowda, **Nirupam Roy**, Romit Roy Choudhury, Srihari Nelakuditi
ACM HotWireless 2014

JOURNAL ARTICLES

Loop-Free Convergence with Unordered Updates
Glenn Robertson, **Nirupam Roy**, P. K. Penumarthi, Srihari Nelakuditi, Jason O'Kane
IEEE Transaction on Network and Service Management, 2017

RFID Enabled Navigation System of an Autonomous Robotic Guide
S. Bandyopadhyay, **Nirupam Roy**, A. Banerjee, A. Chanda, A. Mukherjee, S. Barat
CSI Communications, November 2008, Computer Society of India

POSTERS & DEMOS

ACM MobiSys 2017
Demo: Riding the Non-linearities to Record Ultrasound with Smartphones
Niagara Falls, New York, United States

ACM MobiCom 2016
Poster: Assessing Header Impacts in Soccer with Smartball
New York, United States

NSDI 2016
Poster: Vibration: A new mode of communication
Mountain View, California, United States

Google Faculty Mobile Summit 2015
Poster: Ripple: Communicating through Physical Vibration
Mountain View, California, United States

ACM MobiSys 2014
Demo: I am a Smartphone and I can Tell my User's Walking Direction
Bretton Woods, New Hampshire, United States

ACM HotMobile 2013

Poster: Leveraging Imperfections of Sensors for Fingerprinting Smartphones
Jekyll Island, Georgia, United States

**INVITED
TALKS**

ACM HotWireless

Talk: Opening a Microphone's Backdoor: Hype, Threats, and Opportunities
October 16, 2017
Snowbird, Utah, United States

Microsoft Student Summit on Mobility, Systems and Networking

Talk: Communicating through Physical Vibration
February 1-2, 2016
Petaluma, California, United States

Huawei University Day

Talk: Physical Vibration: A New Modality of Communication
August 6-7, 2015
Rolling Meadows, Illinois, United States

Feedback Friday in Computer Engineering, UIUC

Talk: Ripple: Communicating through Physical Vibration
March 20, 2015
Champaign, Illinois, United States

**TEACHING
& TUTORIALS**

Teaching Assistant

Course: Mobile Sensing, Computing, and Applications (ECE/CS-498)
Spring 2016, UIUC

Tutorial workshop

Topic: Android Programming and Smartphone Sensors
February 8, 2016, UIUC

Guest Lecture: Sensing Out-of-band Sound through Channel Nonlinearity

Course: Embedded Digital Signal Processing (ECE-420)
Fall 2017, UIUC

Guest Lecture: Sound and Vibration Sensing

Course: Mobile Sensing and Sensor Fusion (ECE-598RR)
Spring 2017, UIUC

Guest Lecture: Short-distance Communication Modalities

Course: Wireless Networks and Mobile Systems (ECE-598HH)
Fall 2016, UIUC

Guest Lecture: Walking Direction Estimation with On-body Sensors

Course: Mobile Sensing, Computing, and Applications (ECE/CS-498)
Spring 2016, UIUC

Guest Lecture: Communication through Physical Vibration

Course: Mobile Sensing, Computing, and Applications (ECE/CS-498)
Spring 2016, UIUC

PATENTS

Communicating through physical vibration
Patent granted: US 9608848 B2

Unsupervised Indoor Localization and Heading Direction Estimation
Patent pending: US 20150281910 A1

MEDIA COVERAGE

- AccelPrint: MIT Technology Review, The Telegraph UK, The Voice of Russia, ...
- VibraPhone: TechCrunch, Engadget, Slashdot, ...
- BackDoor: Curiosity, The Science Times, EE-News Europe, ...

ACTIVITIES & SERVICES

- Technical Program Committee (TPC) member:
 - MobiSys PhD Forum 2017
 - ACM S3 Workshop 2017
- Invited reviewer:
 - UbiComp 2016 (ACM Conference on Pervasive and Ubiquitous Computing)
 - IEEE Transactions on Mobile Computing (TMC)
 - IEEE Transactions on Information, Forensics and Security
 - Elsevier Pervasive and Mobile Computing journal
- Judged the technical presentations of undergraduate students on the Discovery Day, 2012 at University of South Carolina
- Student president of the Computer Engineers' Society of Bengal Engineering College (CoEnSoBEC) from 2005 to 2007
- A cartoonist by hobby