

Deepak Vasisht

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Education

- 2013–2019 **Ph.D., Computer Science**, *Massachusetts Institute of Technology*.
(expected) Advisor: Prof. Dina Katabi
- 2013–2015 **S.M., Computer Science**, *Massachusetts Institute of Technology*.
Advisor: Prof. Dina Katabi
- 2009–2013 **B.Tech., Computer Science and Engineering**, *Indian Institute of Technology, Delhi*.
GPA – 9.86, Highest CGPA among graduating students at IIT Delhi

Conference Publications

- SIGCOMM 2018 In-body Backscatter Communication and Localization
Deepak Vasisht, Guo Zhang, Omid Abari, Jay Flanz, Hsiao Ming-Lu, Dina Katabi
- UbiComp 2018 Duet: Estimating User Position and Identity in Smart Homes using Intermittent and Incomplete RF-Data
Deepak Vasisht, Anubhav Jain, Chen-Yu Hsu, Zachary Kabelac, Dina Katabi
- CoNEXT 2018 BLoc: CSI-based Accurate Localization for BLE Tags
Roshan Ayyalasomayajula, **Deepak Vasisht**, Dinesh Bharadia
- NSDI 2017 Farmbeats: An IoT Platform for Data-Driven Agriculture
Deepak Vasisht, Zerina Kapetanovic, Jongho Won, Xinxin Jin, Ranveer Chandra, Ashish Kapoor, Sudipta Sinha, Madhusudhan Sudarshan, Sean Stratman
- SIGCOMM 2016 Eliminating Channel Feedback in Next-Generation Cellular Networks
Deepak Vasisht, Swarun Kumar, Hariharan Rahul, Dina Katabi
Best Paper Award
- NSDI 2016 Decimeter-Level Localization with a Single WiFi Access Point
Deepak Vasisht, Swarun Kumar, Dina Katabi
- SIGCOMM 2015 Caraoke: An E-Toll Transponder Network for Smart Cities
Omid Abari, **Deepak Vasisht**, Dina Katabi
- IEEE FG 2015 Exploiting Sparsity and Co-occurrence Structure for Action Unit Recognition
Yale Song, Daniel McDuff, **Deepak Vasisht**, Ashish Kapoor
- SIGKDD 2014 Active Learning for Sparse Bayesian Multilabel Classification
Deepak Vasisht, Andreas Domianou, Manik Varma, Ashish Kapoor
- SIGCOMM 2014 RF-IDraw: Virtual Touch Screen in the Air Using RF Signals
Jue Wang, **Deepak Vasisht**, Dina Katabi

Posters & Demos

- NSDI 2017 WHISPER: Towards Scalable Long-Range Low-Power IoT Networks. Poster.
Zerina Kapetanovic, **Deepak Vasisht**, Ranveer Chandra
- SIGCOMM 2015 Sub-Nanosecond Time of Flight on Commercial Wi-Fi Cards. Demo.
Deepak Vasisht, Swarun Kumar, Dina Katabi

Journal and Other Articles

- ACM GetMobile Eliminating Channel Feedback in Next-Generation Cellular Networks
Deepak Vasisht, Swarun Kumar, Hariharan Rahul, Dina Katabi
- ACM Queue Research for Practice: Towards a Network of Connected Things
Deepak Vasisht
- ACM GetMobile Experiences Deploying an Always-on Farm Network
Zerina Kapetanovic, **Deepak Vasisht**, Jongho Won, Ranveer Chandra, Mark Kimball

Awards and Achievements

- 2016–18 Microsoft Research PhD Fellowship
- 2017 FarmBeats listed as one of ten projects that inspired him in 2017 by Satya Nadella.
- 2016 Winner, Microsoft Oneweek Hackathon (Industry Category)
- 2016 ACM SIGCOMM Best Paper Award
- 2013 President of India Gold Medal for the highest CGPA among graduating students at IIT Delhi
- 2013 MIT EECS Great Educators Fund Fellowship for academic year 2013-14
- 2011, 2009 OP Jindal Engineering and Management Scholarship, awarded to 1 student from each year at IIT-Delhi (twice)
- 2009-13 IIT Delhi Semester Merit Scholarship, awarded to top 7% students every semester (7 times)
- 2009 National Gold Medal at the Indian National Chemistry Olympiad
- 2010, 2008 Had the honour of attending Republic Day Parade from Prime Minister's box for being among the top 25 students (nationwide) in Secondary and Senior Secondary examinations (twice)
- 2009 Rank 33 in Indian Institute of Technology Joint Entrance Exam, among around 400,000 students

Patents

- 2017 Power-efficient Base Station
(Application) Ranveer Chandra, Zerina Kapetanovic, **Deepak Vasisht**. US Patent Application 20180302853.
- 2017 Aerial Imaging of a Region Using Above Ground Aerial Camera Platform
(Application) Ranveer Chandra, Manohar Swaminathan, Vasuki Narasimha Swamy, Zerina Kapetanovic, **Deepak Vasisht**, Akshit Kumar, Apurv Mehra, Avikalp Gupta, Sudipta Sinha, Rohit Patil. US Patent Application 20180213187.
- 2017 Low-cost Long-term Aerial Imagery
(Application) Ranveer Chandra, Manohar Swaminathan, Vasuki Narasimha Swamy, Zerina Kapetanovic, **Deepak Vasisht**, Akshit Kumar, Anirudh Badam, Gireeja Ranade, Sudipta Sinha, Rohit Patil. US Patent Application 20180213186.
- 2016 (Grant) Generating Real-Time Sensor Maps From Videos And In-Ground Sensor Data
Ranveer Chandra, Ashish Kapoor, Sudipta Sinha, **Deepak Vasisht**. US Patent 10089716.
- 2016 (Grant) IoT Gateway for Weakly Connected Settings
Ranveer Chandra, Ashish Kapoor, Sudipta Sinha, Amar Phanishayee, **Deepak Vasisht**, Xinxin Jin, Madhusudhan Gumbalapura Sudarshan. US Patent 10084868.
- 2016 (Grant) Sub-decimeter Radio Frequency Ranging
Deepak Vasisht, Swarun Kumar, Dina Katabi. US Patent 9961495.

2016 (Grant) Transponder Localization
Omid Abari, **Deepak Vasisht**, Dina Katabi. US Patent 9504006.

2015 (Grant) Radio Frequency Localization
Jue Wang, **Deepak Vasisht**, Dina Katabi. US Patent 9958529.

Public Media

Indoor Localization MIT News, World Economic Forum, CBC, Science Alert, Daily Mail, IEEE Spectrum, Gizmodo, Engadget, and others

FarmBeats BBC, Economist, Gates Notes, Forbes, Business Insider, Economic Times, TechCrunch, Agri-Pulse, Fruit Grower Network, and others

In-Body Devices MIT News, Engadget, CNet, Business Standard, Slashgear, Economic Times, South China Morning Post, Elysium Health, and others

Talks

2018 In-body GPS: Locating in-body Devices using Radio Signals
MIT Family Weekend

2018 Low Power Networks, Topic Preview
Invited Talk, ACM MobiCom 2018

2018 In-body Backscatter Communication and Localization
ACM SIGCOMM

2018 Smart Environments using IoT Systems
Invited Talk, Indian Institute of Technology, Delhi
Invited Talk, Indian Institute of Technology, Bombay
Invited Talk, Microsoft Research, India

2018 FarmBeats: An AI & IoT Platform for Data-driven Agriculture
Invited Talk, MIT Sense.Nano Symposium

2017 FarmBeats: An IoT Platform for Data-driven Agriculture
USENIX NSDI

2016 Eliminating Channel Feedback in Next-generation Cellular Networks
ACM SIGCOMM

2016 Decimeter-level Localization with a Single Wi-Fi Access Point
USENIX NSDI

2016 RF-IDraw: Virtual Touchscreen in the Air using RF Signals
Invited Talk, Microsoft Research Student Summit on Mobility, Systems, and Networking

2015 AgML: Learning for the Agricultural Farm
Microsoft Research, Redmond

2014 Active Learning for Sparse Bayesian Multilabel Classification
ACM SIGKDD

2014 RF-IDraw: Virtual Touchscreen in the Air using RF Signals
ACM SIGCOMM

Service

Program Committee MIT Undergraduate Research Technology Conference, 2017

External Reviewer ACM SIGCHI 2019
ACM IMMUT/UBICOMP 2017

Journal Reviews IEEE/ACM Transactions on Networking
IEEE Transactions on Mobile Computing
IEEE Transactions on Knowledge and Data Engineering
IEEE Internet of Things Journal
IEEE Transactions on Wireless Communications
IEEE Transactions on Image Processing
IEEE Wireless Communication Letters
IEEE Transactions on Vehicular Technology

Teaching Experience

Fall 2015 Teaching Assistant, Computer Networks, MIT
Co-designed and evaluated problem sets & exams, conducted recitations, and managed class projects for the graduate Computer Networks class at MIT. Built a new lab component for the class to give students hands-on experience.

Spring 2013 Teaching Assistant, Data Structures, IIT Delhi
Was the teaching assistant for the freshman Data Structures class at IIT Delhi.

Professional Experience

Summer 2015 & 2016 **Research Intern**, Microsoft Research, Redmond
Co-designed and built FarmBeats, an AI and IoT system for agricultural farms led by Ranveer Chandra. FarmBeats was listed as one of the ten projects that inspired Satya Nadella, won the Microsoft OneWeek Hackathon in 2016 (Industry Category) and has become a flagship project for Microsoft AI for Earth.

Summer 2012 **Research Intern**, Microsoft Research, Redmond
Worked with Ashish Kapoor and Manik Verma on active learning for multilabel classification, published at SIGKDD 2014.

Summer 2011 **Research Intern**, Stanford University
Worked as an undergraduate intern with Prof. Balaji Prabhakar and Prof. Damon Wischick on research in societal networks.

References

Dina Katabi
Andrew and Erna Viterbi Professor,
EECS Department,
Massachusetts Institute of Technology (MIT)
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Ranveer Chandra
Chief Scientist,
Microsoft Azure Global
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