Deepak Vasisht

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deepakvasisht.com

Assistant Professor, Computer Science
University of Illinois Urbana-Champaign

Professional Experience

2021–present **Assistant Professor**, *Computer Science, University of Illinois Urbana-Champaign*.
Affiliate Positions: Electrical & Computer Engineering, Coordinated Science Laboratory

2019–2021 **Researcher & Industry Research Fellow**, *Microsoft*.

Education

2013–2019 **Ph.D. in Computer Science**, *Massachusetts Institute of Technology*.
Advisor: Prof. Dina Katabi
ACM SIGCOMM Doctoral Dissertation Award

2013–2015 **S.M. in Computer Science**, *Massachusetts Institute of Technology*.
Advisor: Prof. Dina Katabi

2009–2013 **B.Tech. in Computer Science and Engineering**, *Indian Institute of Technology, Delhi*.
Graduate of the Last Decade, 2021
President of India Gold Medal, 2013

Selected Awards and Achievements

2024 Distinguished Reviewer, ACM MobiCom'24 (one of four recipients)

2024 Best Community Contribution Paper award at ACM MobiCom'24

2024 List of Teachers Ranked as Excellent by their Students, UIUC

2023 VMWare Systems Research Award
Awarded to 1 Systems Researcher across Universities every year

2023 NSF CAREER Award
Networking and Compute for Next Generation Low-Earth Orbit Satellites

2023 List of Teachers Ranked as Excellent by their Students, UIUC

2022 Outstanding Advisor Award, Grainger College of Engineering, UIUC

2021 List of Teachers Ranked as Excellent by their Students, UIUC

2021 IIT Delhi Graduate of the Last Decade (GOLD) Award

2020 ACM SIGCOMM Doctoral Dissertation Award

2019 ACM COMPASS Best Paper Award

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

2009 National Gold Medal at the Indian National Chemistry Olympiad

Conference Publications

SIGCOMM 2025 StarCDN: Moving Content Delivery Networks to Space
William Zheng, Aryan Taneja, Maleeha Masood, Anirudh Sabnis, Ramesh Sitaraman, **Deepak Vasisht**

ICLR 2025 Support is All You Need for Certified VAE Training
Changming Xu, Debangshu Banerjee, **Deepak Vasisht**, Gagandeep Singh

RAL 2024 and ICRA 2025 Fed-EC: Bandwidth-Efficient Clustering-Based Federated Learning For Autonomous Visual Robot Navigation
Shreya Gummadi, Mateus V Gasparino, **Deepak Vasisht**, Girish Chowdhary

MobiCom 2024 CosMAC: Constellation-Aware Medium Access and Scheduling for IoT Satellites
Jayanth Shenoy, Om Chabra, Tusher Chakraborty, Suraj Jog, **Deepak Vasisht**, Ranveer Chandra
Best Community Contribution Paper Award

MobiSys 2024 Radarize: Enhancing Radar SLAM with Generalizable Doppler-Based Odometry
Emerson Sie, Xinyu Wu, Heyu Guo, **Deepak Vasisht**

HotNets 2024 A Call for Decentralized Satellite Networks
Seoyul Oh, **Deepak Vasisht**

NSDI 2024 Spectrumize: Spectrum-efficient Satellite Networks for the Internet of Things
Vaibhav Singh, Tusher Chakraborty, Suraj Jog, Om Chabra, **Deepak Vasisht**, Ranveer Chandra

NSDI 2024 Known Knowns and Unknowns: Near-realtime Earth Observation Via Query Bifurcation in Serval
Bill Tao, Om Chabra, Ishani Janveja, Indranil Gupta, **Deepak Vasisht**

MobiCom 2023 Magnetic Backscatter for In-body Communication and Localization
Bill Tao, Emerson Sie, Jayanth Shenoy, **Deepak Vasisht**

MobiCom 2023 Transmitting, Fast and Slow: Scheduling Satellite Traffic through Space and Time
Bill Tao, Maleeha Masood, Indranil Gupta, **Deepak Vasisht**

MobiCom 2023 BatMobility: Flying without Seeing for Lightweight Unmanned Aerial Vehicles
Emerson Sie, Zikun Liu, **Deepak Vasisht**

NSDI 2023 Exploring Practical Vulnerabilities of Machine Learning-based Wireless Systems
Zikun Liu, Calvin Xu, Emerson Sie, Gagandeep Singh, **Deepak Vasisht**

MobiCom 2022 Non-Cooperative Wi-Fi Localization & its Privacy Implications
Ali Abedi, **Deepak Vasisht**

SIGCOMM 2022 RF-Protect: Privacy against Device-Free Human Tracking
Jayanth Shenoy, Zikun Liu, Bill Tao, Zachary Kabelac, **Deepak Vasisht**

ICRA 2022 RF-Annotate: Automatic RFID-Supervised Image Annotation of Common Objects in Context
Emerson Sie, **Deepak Vasisht**

IPSN 2022 MiLTOn: Sensing Product Integrity without Opening the Box using Non-Invasive Acoustic Vibrometry
Akshay Gadre, **Deepak Vasisht**, Nikunj Raghuvanshi, Bodhi Priyantha, Manikanta Kotaru, Swarun Kumar, Ranveer Chandra

NSDI 2022 Enabling IoT Self-Localization Using Ambient 5G Signals
Suraj Jog, Junfeng Guan, Sohrab Madani, Ruochen Lu, Songbin Gong, **Deepak Vasisht**, Haitham Hassanieh

NSDI 2022 Whisper: IoT in the TV White Space Spectrum
Tusher Chakraborty, Heping Shi, Zerina Kapetanovic, Bodhi Priyantha, **Deepak Vasisht**, Andrew Nelson, Parag Pandit, Prasad Pillai, Yaswant Chabria, Binh Vu, Ranveer Chandra

MobiCom 2021 FIRE: Enabling Reciprocity for FDD MIMO Systems
Zikun Liu, Gagandeep Singh, Chenren Xu, **Deepak Vasisht**

SIGCOMM 2021 L2D2: Low Latency Distributed Downlink for Low Earth Orbit Satellites
Deepak Vasisht, Jayanth Shenoy, Ranveer Chandra

HotNets 2020 A Distributed and Hybrid Ground Station Network for Low Earth Orbit Satellites
Deepak Vasisht, Ranveer Chandra

MobiCom 2020 Deep Learning based Wireless Localization for Indoor Navigation
Roshan Ayyalasomayajula, Aditya Arun, Chenfeng Wu, Sanatan Sharma, Abhishek Sethi, **Deepak Vasisht**, Dinesh Bharadia

ACM COMPASS 2019 Low-cost aerial imaging for small holder farmers
Aditya Jain, Zerina Kapetanovic, Akshit Kumar, Vasuki Narasimha Swamy, Rohit Patil, **Deepak Vasisht**, Rahul Sharma, Manohar Swaminathan, Ranveer Chandra, Anirudh Badam, Gireeja Ranade, Sudipta Sinha, Akshay Uttama Nambi S N
Best Paper Award

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

Students

Ph.D. Students	Zikun Liu *(Qualcomm Innovation Fellowship)*
	Bill Tao
	Ishani Janveja*(Qualcomm Innovation Fellowship finalist)*
	Emerson Sie *(Rambus Fellowship & Mavis Future Faculty Fellow)*
	Maleeha Masood *(Sohaib and Sara Abbasi Fellowship)*
	Seoyul Oh
Ph.D. Alumni	Jayanth Shenoy *(NSF Graduate Research Fellowship)* *Graduated Dec 2024, Next Job: Research Scientist at Amazon Inc.*
	Subham De *(co-advised with Prof. Hari Sundaram)* *Graduated June 2022, Next Job: Research Scientist at Facebook*
Undergraduate Students	Rem Yang *(CRA Undergraduate Research Award – Honorable Mention)*
	Xinyu Wang
	Om Chabra *(CRA Undergraduate Research Award – Finalist)*
	Shlok Mehrotra
	Davis Zhang
	Shreya Kannan
	Daniel He

Teaching Experience

Fall 2024	CS 598: Wireless Networks and the Internet of Things, UIUC *List of Teachers Ranked as Excellent by their Students*
Spring 2024	CS 438: Communication Networks, UIUC
Fall 2023	CS 598: Wireless Networks and the Internet of Things, UIUC *List of Teachers Ranked as Excellent by their Students*
Spring 2023	CS 438: Communication Networks, UIUC
Spring 2022	CS 438: Communication Networks, UIUC
Fall 2021	CS 498: Machine Learning in Wireless Systems, UIUC
Spring 2021	CS 598: Wireless Networks and the Internet of Things, UIUC *List of Teachers Ranked as Excellent by their Students*

Service

Working Group	NIST, NSF, DoD NextG Communications Gap Analysis, 2022–23 NIST Working Group on AI-based Wireless Communications and Sensing, 2024–25

Program Committee	ACM SIGCOMM, 2025 ACM MobiCom, 2025 USENIX NSDI, 2024 ACM MobiCom, 2024 IEEE INFOCOM, 2024 ACM MobiCom, 2023 ACM HotNets, 2022 ACM MobiSys, 2022 ACM MobiSys, 2021 ACM SIGCOMM, 2020 MIT Undergraduate Research Technology Conference, 2017
Panels	Served on six NSF panels across 2021–2024
Organization	Publicity Chair, ACM MobiCom 2025 Artifact Evaluation Chair, ACM Mobicom 2023 Workshop Chair, ACM Mobicom 2022
Workshop Organizer	The 1st ACM Workshop on LEO Networking and Communication 2023, Co-located with ACM Mobicom. The 2nd ACM Workshop on LEO Networking and Communication 2024, Co-located with ACM Mobicom.
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

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

Grants

NSF, 2024	CPS:MEDIUM: Radar-based Perception and Control for Small Autonomous Robots. PI, Total: 1.2 million USD, My Share: 400k
VMWare, 2023	VMWare Systems Research Award. PI, Total: 125k USD, My Share: 125k
NSF, 2023	CAREER: Networking and Compute for Next Generation Low-Earth Orbit Satellites. PI, Total: 650k USD, My Share: 650k
IBM, 2023	IBM IIDAI: Foundational Models for Spatio-temporal and Multi-modal Geospatial Data. Co-PI, Total: 400k USD, My Share: 100k

NSF, 2022 RINGS: Provably Robust Machine Learning for Next Generation Cellular Networks.
PI, Total: 800k USD, My Share: 300k

USDA, 2022 I-FARM: Illinois Farming and Regenerative Management
Co-PI, Total: 4 million USD, My Share: 800k

UIUC CDA, 2022 Rural Connectivity Seed Funding – UIUC Center for Digital Agriculture.
PI, Total: 100k USD, My Share: 100k

CISCO, 2022 Near-realtime Data Downlink and Analysis for Earth Observation Satellites.
PI, Total: 100k USD, My Share: 100k

Microsoft, 2022 Networking and Sensing using Low Earth Orbit Satellites.
PI, Total: 50k USD, My Share: 50k

Patents

2023 Adaptive radio configuration in wireless networks
Tusher Chakraborty, Zerina Kapetanovic, **Deepak Vasisht**, Ranveer Chandra. US Patent 11575460.

2023 Communication using dynamic spectrum access based on channel selection
Tusher Chakraborty, **Deepak Vasisht**, Ranveer Chandra, Zerina Kapetanovic, Heping Shi, Nissanka Arachchige Bodhi Priyantha. US Patent 11632762.

2022 Channel control for communication using dynamic spectrum access
Tusher Chakraborty, **Deepak Vasisht**, Ranveer Chandra, Zerina Kapetanovic, Heping Shi, Nissanka Arachchige Bodhi Priyantha. US Patent 11540141.

2021 Scheduling satellite data transmissions using differing sets of ground stations
Deepak Vasisht, Ranveer Chandra. US Patent 11096188.

2020 Secure wireless IOT platform
Nissanka Arachchige Bodhi Priyantha, **Deepak Vasisht**, Ranveer Chandra, Heping Shi. US Patent 10992338.

2019 Low-cost Long-term Aerial Imagery
Ranveer Chandra, Manohar Swaminathan, Vasuki Narasimha Swamy, Zerina Kapetanovic, **Deepak Vasisht**, Akshit Kumar, Anirudh Badam, Gireeja Ranade, Sudipta Sinha, Rohit Patil. US Patent 11153535.

2019 Location determination of wireless communications devices
Sai Roshan Ayyalasomayajula, Dinesh Bharadia, **Deepak Vasisht**, Dina Katabi. US Patent 11140651.

2019 Power-efficient Base Station
Ranveer Chandra, Zerina Kapetanovic, **Deepak Vasisht**. US Patent 10785719.

2018 IoT Gateway for Weakly Connected Settings
Ranveer Chandra, Ashish Kapoor, Sudipta Sinha, Amar Phanishayee, **Deepak Vasisht**, Xinxin Jin, Madhusudhan Gumbalapura Sudarshan. US Patent 10084868.

2018 Characterizing transmit channels from an antenna array to a transceiver
Dina Katabi, **Deepak Vasisht**. US Patent 10756831.

2016 Generating Real-Time Sensor Maps From Videos And In-Ground Sensor Data
Ranveer Chandra, Ashish Kapoor, Sudipta Sinha, **Deepak Vasisht**. US Patent 10089716.

2016 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 Sub-decimeter Radio Frequency Ranging
Deepak Vasisht, Swarun Kumar, Dina Katabi. US Patent 9961495.

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

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