Keerthi Priya Dasala

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Research Interests

- Wireless Communications and Sensing
- Millimeter-Wave and THz Networks
- Wireless Security
- AI for Wireless Network Management and Control
- Intelligent and Autonomous Systems
- Cellular & UAV/drone networks
- Internet of Things

Professional Experience

Qualcomm Technologies, Inc.   **Bridgewater, NJ, US**
Senior Research Engineer, Corporate Wireless R&D   *Sept 2022 – Present*

Rice University   **Houston, TX, US**
Graduate Research Assistant, Rice Networks Group,   *Aug 2017–Aug 2022*
Advisor: Prof. Edward W. Knightly

Qualcomm Technologies, Inc.   **Remote**
Wireless Research Intern, Corporate Wireless R&D,   *June 2021 - Aug 2021*
Mentor: Dr. Jane Luo, Manager: Dr. Navid Abedini

Nokia Bell Labs   **Holmdel, NJ, US**
Wireless Research Intern, Wireless Access and Devices Lab,   *June 2019 - Aug 2019*
Mentor: Dr. Mike Macdonald, Manager: Dr. Dragan Samardzija

MathWorks   **Hyderabad, TS, IND**
Research Engineer, Communications and Signal Processing Lab,
Managers: Dr. Darel Linebarger, Dr. Nanda Kishore Chavali

Indian Institute of Science   **Bangalore, KA, IND**
Graduate Research Assistant, Wireless Research Lab,
Advisor: Prof. A. Chockalingam

ISRO Satellite Centre   **Bangalore, KA, IND**
Engineering Intern, Communication Systems group,
Mentor: Dr. Hareesh N K, Manager: Dr. Devadas Shenoy

Awards and Accomplishments

Best Paper Award at IEEE INFOCOM 2021	2021
Texas Instruments Distinguished Student Fellowship	2017-2022
Recognized as **Star Doctoral Student**, ECE Department, Rice University	2021
Recipient of **CRA-W Grad Cohort for Women Fellowship**	2021
Best Paper Award at IEEE VTC 2020	2020
N2Women Young Researcher Fellowship, INFOCOM 2020	2020
Nokia **Bell Labs Intern Innovation Project Award**, Nokia Bell Labs	2019
Grace Hopper Celebration Scholars Program Scholarship, GHC	2018

- Rice University **ECE Graduate Student Fellowship**   2017-2018
- **S.V.C Aiya Gold Medal** of Academic Excellence, Indian Institute of Science   2016
- **A.P.J. Abdul Kalam Post-Graduate Merit Fellowship**, Government of India   2016
- **Sri Shanthi Subramanyam Merit Award**, ECE, Osmania University   2012
- **Prof.V.M.Pandhari Pande Award for Academic Excellence** in ECE, Osmania University 2012
- Ministry of Human Resource Development Scholarship, India   2009

Education

Rice University   **Houston, TX, US**
Ph.D, Electrical and Computer Engineering   *2017–2022*
Advisor: Dr. Edward W. Knightly

Thesis: Design and Experimental Evaluation of Next-Generation Multi-User WLANs from mmWave to Terahertz
Supported by: Texas Instruments Distinguished Student Fellowship, Rice ECE Graduate Student Fellowship

Indian Institute of Science   **Bangalore, India**
Masters, Electrical & Communications Engineering

Osmania University   **Hyderabad, India**
Bachelors, Electronics & Communication Engineering

Publications

Peer Reviewed Conference & Journal Papers...

- **Keerthi Dasala**, Josep M. Jornet, Edward W. Knightly,"Scaling Multi-User mmWave WLANs: the Case for Concurrent Uplink Transmissions on Single RF Chain", **(Invited Paper)** *in IEEE/ACM Transactions on Networking (in press)*, 2023.

- **Keerthi Dasala** and Edward W. Knightly,"Multi-User TeraHertz WLANs with Angularly Dispersive Links", *in Proceedings of ACM MobiHoc 2022,* October 2022.

- **Keerthi Dasala**, Josep M. Jornet, Edward W. Knightly, "Scaling mmWave WLANs with Single RF Chain Multi-User Beamforming", *in IEEE/ACM Transactions on Networking,* December 2022.

- **Keerthi Dasala**, Josep M. Jornet, Edward W. Knightly, "Uplink Multi-User Beamforming on Single RF Chain mmWave WLANs", *in Proceedings of IEEE INFOCOM 2021,* May 2021. **(Best Paper Award)**

- **Keerthi Dasala**, Mike Macdonald, Dragan Samardzija, "Synchronized Uplink Time of Arrival Localization - A Measurement-Driven Evaluation", *in Proceedings of IEEE VTC 2020,* November 2020. **(Best Paper Award)**

- **Keerthi Dasala**, Josep M. Jornet, Edward W. Knightly, "SIMBA: Single RF Chain Multi-User Beamforming in 60 GHz WLANs", *in Proceedings of IEEE INFOCOM 2020,* July 2020.

- **Keerthi Dasala**, Karunya Ch, Nanda Kishore Chavali, "A Method for Time and Frequency Synchronization in a Cooperative Communication System", *in Proceedings of IEEE INDICON 2016*.

- **Keerthi Dasala**, Vani Devi, Dasgupta K.S,"Efficient Architecture and Implementation of PHY WLAN Receiver on Reconfigurable Platforms", *in Proceedings of IEEE ICCCT 2014*

- Vani Devi M, **Keerthi Dasala**, Selvaganesan N, "Impact of Spatial Correlation and Channel Estimation Error on Precoded MIMO systems", *in Proceedings of IEEE ICSPCT 2014*

In-Progress Papers

- Z. Liu, **Keerthi Dasala**, M. Di, R. Doost-Mohammady, and E. W. Knightly, "Design and Experimental Evaluation of Multipath Directional Modulation", *Under Review, 2023*.

Patents

- **Keerthi Dasala**, Jane Luo, Navid Abedini, Tao Luo, Junyi Li, "Non-Standalone Backscattering in Higher Bands", *filed January 2023, Patent pending*.

- **Keerthi Dasala**, Jane Luo, Navid Abedini, Tao Luo, Junyi Li, "Network Energy Saving in Idle Mode", *filed August 2021, US Patent no: 2106821P1, Patent pending*.

Teaching Experience

Teaching Assistant

- Modern Communication Theory and Practice (ELEC 551) — Fall 2020, Fall 2021
- Advanced Wireless Networking (ELEC 538) — Spring 2021
- Signals and Systems (ELEC 242) — Spring 2020
- Introduction to Deep Learning (ELEC 576) **(Best TA Award, 2020)** — Fall 2019
- Introduction to Communication Networks (ELEC 537) — Fall 2018
- Digital Communications (ELEC 430) — Spring 2017
- Computer Vision — Fall 2016

Guest Lectures

- Modern Communication Theory and Practice (ELEC 551) — Rice University, Fall 2020
- Intro to Communication Networks (ELEC 537) — Rice University, Fall 2019
- Intro to Random Processes (ELEC 533) — Rice University, Fall 2019

Pedagogical and Career Training

- Center for Teaching Excellence — Rice University, Spring 2020
  - Research Communication Training Program (semester-long)
  - Workshop on Active Learning Techniques for a more engaged Engineering Class
  - Workshop on Strategic Career Design for the Peak Performing Professor

Research Talks

- **Qualcomm R&D**, Multi-User THz WLANs with Leaky Wave Antennas, November 2022
- **MobiHoc 2022** - Multi-User THz WLANs with Angularly Dispersive Links, October 2022

- **Qualcomm R&D**, Network Energy Saving in Idle Mode, August 2021
- **INFOCOM 2021** - Uplink Multi-User Beamforming on Single RF Chain mmWave WLANs, May 2021
- **CRA-W Grad Cohort** Poster - Scaling WLANs in Spectrum, User Density and Robustness, April 2021
- **INFOCOM 2020** - SIMBA: Single RF Chain Multi-User Beamforming in Single RF Chain 60 GHz WLANs, July 2020
- **Nokia Bell Labs**, Uplink Time-Based Indoor & Outdoor Localization, August 2019
- **ECE Affiliates Conference**, Next Generation Millimeter-Wave Wireless Communications: Achieving Multi-Gigabit Data Rates, Rice University, March 2019
- **5th Annual Three-Minute Ph.D. Research Competition** Poster - Scaling WLANs in User Density and Data Rate, March 2018

Community Service

- **Organizer of the Girls Engineering the Future** : 2019
  Workshop to encourage 4th-8th grade girls to pursue higher education in the STEM fields.
- **@Rice**
  - **Founder of BiasBusters @ RiceECE**: 2019 - Present
    Aims at creating awareness about unconscious bias at workspace and improving the climate at Rice ECE
  - **Judge:** Rice Undergraduate Research Symposium, Rice University 2019
  - **Publicity Coordinator:** Indian Students at Rice (ISAR) 2018 - 2019
- **UN Volunteer:** 2018 - Present
  English tutor to the high school students to build the confidence and skill base for higher studies
- **Teacher Attracting Girls (TAG) member:** 2014 - 2019
  Member of the Organizing Committee, training high school teacher to encourage female students to pursue Engineering as a career.
- **Undergraduate Students mentor:** Mentored 4 undergraduate students at IISc
- **Rotaract Club of Hyderabad:** 2012 - Present
  E-work and Communications Coordinator on the 'Right to Education' programme that aims to rehabilitate educational facilities in Hyd, India
- **HELP AGE INDIA:** 2006 - Present
  Young Volunteer for to raise nationwide awareness and fund collection for the cause and care of the elderly

Professional Service

- **Chair of the N2 Women event at IEEE INFOCOM 2020:** 2020
  A networking event for women in IEEE and ACM community to build strong mentoring relationships, establishing ties among disparate communities and interdisciplinary groups, and creating broader open dialog celebrating diversity.
- **Grace Hopper Celebration'19 Volunteer:** 2019
  Volunteered with three other graduate students to set up a panel discussion for the session on "Surviving the Hashtags: Building a Support Network as a Woman in Tech."
- **Grace Hopper Celebration'18 Volunteer:** 2018

Volunteered for the poster session review committee to review the poster submissions and rate them based on criteria provided by the co-chairs.
- ○ **@Rice**
  - **RET Mentor:** 2018
    Mentored six high school teachers in the PATHS-UP Research Experience for Teachers Program (RET)
  - **Science outreach volunteer:** 2018-2020
    Performed demos to middle and high school students as a part of the Annual Student Leadership Conference hosted by Rice University Athletics.
  - **Academic Mentor:** 2017 - 2022
    Mentoring ECE students at Rice University's Electrical xor Computer Leaders (ExCEL) Women Group on academic and research resources
- ○ **Invited Reviewer**:
  - IEEE Transactions on Wireless Communications
  - IEEE Transactions on Mobile Computing
  - IEEE Transactions on Vehicular Technology
  - IEEE Wireless Communication Letters
  - Elsevier Journal of Computer Networks
  - IEEE Wireless Communications and Networking Conference
  - IEEE Wireless On-demand Network Systems and Services Conference
  - IEEE International Conference on Sensing, Computing, and Networking
  - IEEE Millimeter-Wave Networked System (mmSys) Workshop
  - EURASIP Journal on Wireless Communications and Networking

References

Prof. Edward W. Knightly
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Electrical and Computer Engineering
Rice University
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Prof. Ashutosh Sabharwal
Professor and Department Chair
Electrical and Computer Engineering
Rice University
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Prof. Josep M. Jornet
Associate Professor
Electrical and Computer Engineering
Northeastern University
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Dr. Michael W. MacDonald
Distinguished Member of Technical Staff
Wireless Access and Devices Lab
Nokia Bell Labs
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