

Ian P. Roberts

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EDUCATION

- University of Texas at Austin** *August 2018 – Present*
Ph.D. Electrical Engineering
Supervised by Jeffrey G. Andrews and Sriram Vishwanath
Research Group: Wireless Networking and Communications Group
NSF Graduate Research Fellow
- Missouri University of Science and Technology** *August 2014 – May 2018*
B.S. Electrical Engineering

EXPERIENCE

- University of Texas at Austin** · Austin, TX *August 2020 – Present*
Graduate Research Assistant
- GenXComm, Inc.** · Austin, TX *August 2019 – August 2020*
Wireless Research Engineer
- Amazon** · Sunnyvale, CA *Summer 2019*
Wireless Systems Development Intern
- University of Texas at Austin** · Austin, TX *August 2018 – May 2019*
Graduate Research Assistant
- GenXComm, Inc.** · Austin, TX *May 2018 – May 2019*
Wireless Engineering Intern
- Sandia National Laboratories** · Albuquerque, NM *May 2017 – May 2018*
R&D Electrical Engineering Intern
- Missouri University of Science and Technology** · Rolla, MO *January 2017 – May 2018*
Undergraduate Research Assistant
- Dynetics, Inc.** · Huntsville, AL *Summer 2016*
Electrical Engineering Intern

PUBLICATIONS

- [1] **I. P. Roberts** and S. Vishwanath, “Beamforming cancellation design for millimeter-wave full-duplex”, in *Proceedings of the IEEE Global Communications Conference*, PDF, Dec. 2019.
- [2] **I. P. Roberts**, H. B. Jain, and S. Vishwanath, “Frequency-selective beamforming cancellation design for millimeter-wave full-duplex”, in *Proceedings of the IEEE International Conference on Communications*, PDF, Jun. 2020.
- [3] H. B. Jain, **I. P. Roberts**, and S. Vishwanath, “Enabling in-band coexistence of millimeter-wave communication and radar”, in *Proceedings of the IEEE International Radar Conference*, PDF, Apr. 2020.
- [4] **I. P. Roberts**, H. B. Jain, and S. Vishwanath, “Equipping millimeter-wave full-duplex with analog self-interference cancellation”, in *Proceedings of the IEEE International Conference on Communications Workshop on Full-Duplex Communications for Future Wireless Networks*, PDF, Jun. 2020.
- [5] R. K. Mishra, Y. Chen, **I. P. Roberts**, and S. Vishwanath, “Collision detection in dense Wi-Fi networks using self-interference cancellation”, in *Proceedings of the IEEE International Conference on Communications Workshop on Full-Duplex Communications for Future Wireless Networks*, PDF, Jun. 2020.
- [6] **I. P. Roberts**, J. G. Andrews, H. B. Jain, and S. Vishwanath, “Millimeter wave full-duplex radios: New challenges and techniques”, *IEEE Wireless Communications Magazine*, Feb. 2021, PDF.

TECHNICAL STRENGTHS & INTERESTS

MATLAB, Python, C/C++, TensorFlow, GNU Radio, NS-3, RF systems, benchtop equipment, software-defined radio, Git, L^AT_EX, technical documentation.

MIMO communication, millimeter-wave, cellular systems, primarily PHY and some MAC, signal processing, communication system design and simulation, in-band full-duplex, interference cancellation, communication system optimization, array signal processing, compressed sensing, radar.

GRADUATE COURSEWORK

Wireless Communication (Andrews), Space-Time Communication (Heath), Convex Optimization (Mokhtari), Analysis and Design of Communication Networks (de Veciana), Probability & Stochastic Processes I (Shakkottai), Numerical Analysis: Linear Algebra (Martinsson), Data Mining (Thomaz), Statistical Methods (Hersh), Introduction to Radar Systems (Zoughi, Missouri S&T), Wireless Ad Hoc & Sensor Networks (Zawodniok, Missouri S&T),

GRADUATE INVOLVEMENT & SERVICE

Reviewer, IEEE Access, IEEE Wireless Communications Magazine, IEEE Transactions on Communications, IEEE International Symposium on Information Theory, IEEE International Conference on Communications.

Technical Program Committee Member, Workshop on Full-Duplex Communications for Future Wireless Networks, IEEE International Conference on Communications, 2020.

Mentor, Graduates Linked with Undergraduates in Engineering, Women in Engineering Program, Cockrell School of Engineering, University of Texas at Austin, Fall 2019 & Spring 2020.

Session Chair, Symposium on Massive MIMO III, IEEE Global Communications Conference, Dec. 2019.

Judge, Poster Exhibition on Engineering Research, Cockrell School of Engineering, University of Texas at Austin, April 2019.

HONORS & AWARDS

National Science Foundation Graduate Research Fellowship *May 2020*
Three years of full support for my graduate studies. National competition across STEM disciplines.

NXP Foundation Fellowship (Declined) *May 2020*
A year of full support for my graduate studies. One of two selected from UT Austin.

Summa Cum Laude *May 2018*
Top honors for my cumulative GPA at graduation from Missouri University of Science and Technology.

IEEE Student Branch of the Year *December 2016*
The IEEE St. Louis Section honored Missouri S&T as their top IEEE Student Branch for 2016.

IEEE Member of the Year *May 2016*
The Missouri S&T IEEE Student Branch recognized me for organizing a new workshop that introduced students to the different areas of electrical and computer engineering.

Grand Champion (*Better Campus Competition*) *April 2016*
We took home first place in a funded, campus-wide competition for our project *FoodFinder*, a web application that improves the dining experience on the Missouri S&T campus.