

JUNFENG (JAYDEN) GUAN

Email: jguan1019@gmail.com

Telephone: +1 217 254 1512

Homepage: jguan.page

RESEARCH INTERESTS

Wireless Sensing and Networking Systems, Millimeter-Wave Radar Perception, Integrated Sensing and Communication, Millimeter-Wave and 5G/6G Networks, Machine Learning (for Wireless and Radar)

EDUCATION

École Polytechnique Fédérale de Lausanne (EPFL)

Postdoctoral Researcher - [SENS Lab](#)

Apr. 2023 - Present

Advisor: Prof. [Haitham Hassanieh](#)

University of Illinois Urbana-Champaign

Doctor of Philosophy in Electrical and Computer Engineering

May. 2017 - Aug. 2022

Advisor: Prof. [Haitham Hassanieh](#)

University of Illinois Urbana-Champaign

Bachelor of Science in Electrical Engineering (with Highest Honors)

Aug. 2013 - May. 2017

Advisor: Prof. [Songbin Gong](#)

MAIN CONFERENCE AND JOURNAL PUBLICATIONS

13. [ICASSP'23] [Junfeng Guan](#), Sohrab Madani, Waleed Ahmed, Samah Hussien, Saurabh Gupta, Haitham Hassanieh. "Exploiting Virtual Array Diversity For Accurate Radar Detection." *IEEE International Conference on Acoustics, Speech and Signal Processing*, 2023. [\[pdf\]](#)
12. [IPSN'23] Ishani Janveja, Jiaming Wang, [Junfeng Guan](#), Suraj Jog, Haitham Hassanieh. "WINC: A Wireless IoT Network for Multi-Noise Source Cancellation." *ACM/IEEE International Conference on Information Processing in Sensor Networks*, 2023. [\[pdf\]](#)
11. [ECCV'22] Sohrab Madani*, [Junfeng Guan](#)*, Waleed Ahmed*, Saurabh Gupta, Haitham Hassanieh. "Radatron: Accurate Detection Using Multi-Resolution Cascaded MIMO Radar." *European Conference on Computer Vision*, 2022. [\[pdf\]](#) (* coprimary authors)
10. [NSDI'22] Suraj Jog, [Junfeng Guan](#), Sohrab Madani, Ruochen Lu, Songbin Gong, Haitham Hassanieh. "Enabling IoT Self-Localization Using Ambient 5G Signals." *USENIX Symposium on Networked Systems Design and Implementation*, 2022. [\[pdf\]](#)
9. [NSDI'21] [Junfeng Guan](#), Jitian Zhang, Ruochen Lu, Hyunjoo Seo, Jin Zhou, Songbin Gong, Haitham Hassanieh. "Efficient Wideband Spectrum Sensing Using MEMS Acoustic Resonators." *USENIX Symposium on Networked Systems Design and Implementation*, 2021. [\[pdf\]](#)
8. [TMTT'21] [Junfeng Guan](#), Arun Paidimarri, Alberto Valdes-Garcia, Bodhisatwa Sadhu. "3D Imaging Using Millimeter Wave 5G Signal Reflections." *IEEE Transactions on Microwave Theory and Techniques*, 2021. [\[pdf\]](#)
7. [CVPR'20] [Junfeng Guan](#), Sohrab Madani, Suraj Jog, Saurabh Gupta, Haitham Hassanieh. "Through Fog High Resolution Imaging Using Millimeter Wave Radar." *IEEE Conference on Computer Vision and Pattern Recognition*, 2020. [\[pdf\]](#)
6. [RFIC'20] [Junfeng Guan](#), Arun Paidimarri, Alberto Valdes-Garcia, Bodhisatwa Sadhu. "3D Imaging using mmWave 5G Signals." *IEEE Radio Frequency Integrated Circuits Symposium*, 2020. [\[pdf\]](#)
5. [NSDI'19] Suraj Jog, Jiaming Wang, [Junfeng Guan](#), Thomas Moon, Haitham Hassanieh, Romit Roy Choudhury. "Many-to-Many Beam Alignment in Millimeter Wave Networks." *USENIX Symposium on Networked Systems Design and Implementation*, 2019. [\[pdf\]](#)

4. [VLSI'19] Thomas Moon, Junfeng Guan, Haitham Hassanieh. "Online Millimeter Wave Phased Array Calibration Based on Channel Estimation." *IEEE VLSI Test Symposium*, 2019. [\[pdf\]](#)
3. [SIGCOMM'18] Sheng Shen, Nirupam Roy, Junfeng Guan, Haitham Hassanieh, Romit Roy Choudhury. "MUTE: Bringing IoT to Noise Cancellation." *ACM SIGCOMM*, 2018. [\[pdf\]](#)
2. [IMS'17] Brandon Arakawa, Liuqing Gao, Yansong Yang, Junfeng Guan, Anming Gao, Ruochen Lu, Songbin Gong. "Simultaneous Wireless Power Transfer and Communication to Chip-Scale Devices." *IEEE International Microwave Symposium*, 2017. [\[pdf\]](#)
1. [IMS'17] Ali Kourani, Yong-Ha Song, Brandon Arakawa, Ruochen Lu, Junfeng Guan, Anming Gao, Songbin Gong. "A 150 MHz Voltage Controlled Oscillator using Lithium Niobate RF-MEMS Resonator." *IEEE International Microwave Symposium*, 2017. [\[pdf\]](#)

POSTERS AND ARTICLES

4. [SIGCOMM'22 Poster] Junfeng Guan, Suraj Jog, Sohrab Madani, Ruochen Lu, Songbin Gong, Haitham Hassanieh. "Enabling IoT Self-Localization Using Ambient 5G mmWave Signals." *ACM SIGCOMM*, 2022. [\[pdf\]](#)
3. [GetMobile'21] Junfeng Guan, Jitian Zhang, Ruochen Lu, Hyungjoo Seo, Jin Zhou, Songbin Gong, Haitham Hassanieh. "Efficient Wideband Spectrum Sensing Using MEMS Acoustic Resonators." *ACM GetMobile: Mobile Computing and Communications*, 2021. [\[pdf\]](#)
2. [IEEE D&T'20] Thomas Moon, Junfeng Guan, Haitham Hassanieh. "Know Your Channel First, then Calibrate Your mmWave Phased Array." *IEEE Design & Test Magazine*, 2020. [\[pdf\]](#)
1. [MobiCom'18 Poster] Sheng Shen, Nirupam Roy, Junfeng Guan, Haitham Hassanieh, Romit Roy Choudhury. "Networked Acoustics Around Human Ears." *ACM MobiCom*, 2018. [\[pdf\]](#)

SELECTED HONORS AND AWARDS

ACM SIGMOBILE Research Highlights	2021
Qualcomm Innovation Fellowship [website]	2020
RFIC'20 Industry Best Paper Finalists	2020

PATENTS

- L3. Saeed Reza Khosravirad, Junfeng Guan, Harish Viswanathan, Jakub Sapis. "Resource Allocation in Joint Communication and Sensing." *Patent Number: US-20230284122-A1*, 2023.
- L2. Junfeng Guan, Bodhisatwa Sadhu, Arun Paidimarri, Asaf Tzadok, Alberto Valdes Garcia. "Imaging With Wireless Communication Signals." *Patent Number: US-20210215814-A1*, 2021.
- L1. Junfeng Guan, Sohrab Madani, Suraj Jog, Saurabh Gupta, Haitham Hassanieh. "Neural Network-Based Millimeter-Wave Imaging System." *Patent Number: US-20210192762-A1*, 2021.

PROFESSIONAL EXPERIENCE

Nokia Bell Labs	Jun. 2021 - Aug. 2021
<i>Radio Systems Bell Labs Summer Intern</i>	<i>Murray Hill, NJ (Remote)</i>
- Publications & Patents: L3.	
IBM Research	May. 2019 - Aug. 2019
<i>Graduate Research Intern</i>	<i>Thomas J. Watson Research Center, Yorktown Heights, NY</i>
- Publications & Patents: [TMTT'21], [RFIC'20], L2.	

TEACHING EXPERIENCE

- Communication Networks (ECE 438, UIUC) Aug. 2019 - Dec. 2019
- Communication System Laboratory (ECE 463, UIUC) Aug. 2018 - Dec. 2018

SERVICES

- Shadow Program Committee - ACM SenSys 2022
- Conference Reviewer:
 - IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2024
 - IEEE Vehicular Technology Conf. (VTC) 2023
 - International Conference on Computer Vision (ICCV) 2023
 - IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) 2023
 - European Conference on Computer Vision (ECCV) 2022
 - IEEE Globecom Workshops 2022
- Journal Reviewer:
 - IEEE Transactions on Microwave Theory and Techniques (TMTT)
 - IEEE Transactions on Instrumentation and Measurement
 - IEEE Transactions on Mobile Computing
 - IEEE Access
 - Internat. J. of Wireless Information Networks

REFERENCES

- **Prof. Haitham Hassanieh**
Associate Professor, École Polytechnique Fédérale de Lausanne (EPFL)
School of Computer and Communication Sciences
Website: <https://people.epfl.ch/haitham.alhassanieh>
- **Prof. Romit Roy Chouhury**
Professor, University of Illinois Urbana-Champaign
Department of Electrical and Computer Engineering & Computer Science
Website: <http://croy.web.engr.illinois.edu>
- **Prof. Saurabh Gupta**
Assistant Professor, University of Illinois Urbana-Champaign
Department of Electrical and Computer Engineering
Website: <http://saurabhg.web.illinois.edu>