JUNFENG (JAYDEN) GUAN

OFFICE: 1308 West Main Street, 462 CSL, Urbana, IL 61801, US

EMAIL: jguan1019@gmail.com   **HOMEPAGE:** jguan.page

RESEARCH INTERESTS

Wireless Networking and Sensing Systems, Joint Communication and Sensing, Millimeter-Wave and 5G Networks

EDUCATION

École Polytechnique Fédérale de Lausanne   Sep. 2022 - Present
Postdoctoral Researcher   *Advisor: Prof. Haitham Hassanieh*

University of Illinois at Urbana-Champaign   May. 2017 - Aug. 2022
Doctor of Philosophy in Electrical and Computer Engineering   *Advisor: Prof. Haitham Hassanieh*

University of Illinois at Urbana-Champaign   Aug. 2013 - May. 2017
Bachelor of Science in Electrical Engineering (with Highest Honors)   *Advisor: Prof. Songbin Gong*

MAIN CONFERENCE AND JOURNAL PUBLICATIONS

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.

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, Hyungjoo 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, <u>Junfeng Guan</u>, 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**] <u>Junfeng Guan</u>, Suraj Jog, Sohrab Madani, Ruochen Lu, Songbin Gong, Haitham Hassanieh. "Enabling IoT Self-Localization Using Ambient 5G mmWave Signals." *ACM SIGCOMM*, 2022.

3. [**GetMobile'21**] <u>Junfeng Guan</u>, 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.

2. [**IEEE D&T'20**] Thomas Moon, <u>Junfeng Guan</u>, 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, <u>Junfeng Guan</u>, Haitham Hassanieh, Romit Roy Choudhury. "Poster: 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
SIGCOMM'18 Travel Grant	2018
Edward C. Jordan Award, UIUC	2017

PATENTS

2. <u>Junfeng Guan</u>, Bodhisatwa Sadhu, Arun Paidimarri, Asaf Tzadok, Alberto Valdes Garcia. "Imaging with wireless communication signals." *US Patent App*, 2021.

1. <u>Junfeng Guan</u>, Sohrab Madani, Suraj Jog, Saurabh Gupta, Haitham Hassanieh. "Neural network-based millimeter-wave imaging system." *US Patent App*, 2021.

INDUSTRIAL EXPERIENCES

- **Nokia Bell Labs**   Jun. 2021 - Aug. 2021
  Radio Systems Bell Labs Summer Intern

- **IBM Research**   May. 2019 - Aug. 2019
  Graduate Research Intern

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   June 2022

- Reviewer: European Conference on Computer Vision (ECCV) 2022, IEEE Transactions on Microwave Theory and Techniques (TMTT), IEEE Transactions on Instrumentation and Measurement, IEEE Transactions on Mobile Computing, IEEE Globecom Workshops, IEEE Access