

# JUNFENG (JAYDEN) GUAN

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## RESEARCH INTERESTS

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

## EDUCATION

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University of Illinois at Urbana-Champaign

Dec. 2019 - Present

*Ph.D. Candidate in Electrical and Computer Engineering*

*Advisor: Prof. [Haitham Hassanieh](#)*

University of Illinois at Urbana-Champaign

May. 2017 - Dec. 2019

*Master of Science in Electrical and Computer Engineering*

University of Illinois at Urbana-Champaign

Aug. 2013 - May. 2017

*Bachelor of Science in Electrical Engineering (with Highest Honors)*

## MAIN CONFERENCE AND JOURNAL PUBLICATIONS

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11. [Manuscript Under Review] [Junfeng Guan](#), Sohrab Madani, Waleed Ahmed, Saurabh Gupta, Haitham Hassanieh. "Radatron: Accurate Detection Using Multi-Resolution Cascaded MIMO Radar." *Under Review*, 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.
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

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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.
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. "Poster: Networked Acoustics Around Human Ears." *ACM MobiCom*, 2018. [\[pdf\]](#)

## SELECTED HONORS AND AWARDS

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ACM SIGMOBILE Research Highlights	2021
Qualcomm Innovation Fellowship <a href="#">[website]</a>	2020
RFIC'20 Industry Best Paper Finalists	2020
SIGCOMM'18 Industry Best Paper Finalists	2020
Edward C. Jordan Award, UIUC	2017

## PATENTS

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2. Junfeng Guan, Bodhisatwa Sadhu, Arun Paidimarri, Asaf Tzadok, Alberto Valdes Garcia. "Imaging with wireless communication signals." *US Patent App*, 2021.
1. Junfeng Guan, Sohrab Madani, Suraj Jog, Saurabh Gupta, Haitham Hassanieh. "Neural network-based millimeter-wave imaging system." *US Patent App*, 2021.

## INDUSTRIAL EXPERIENCES

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• <b>Nokia Bell Labs</b> Radio Systems Bell Labs Summer Intern	Jun. 2021 - Aug. 2021
• <b>IBM Research</b> Graduate Research Intern	May. 2019 - Aug. 2019

## TEACHING EXPERIENCE

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

## SERVICES

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• Invited Reviewer for IEEE Transactions on Microwave Theory and Techniques	Feb. 2022
• Invited Reviewer for IEEE Globecom Workshops	Aug. 2021
• Invited Reviewer for IEEE Transactions on Instrumentation and Measurement	Aug. 2021
• Invited Reviewer for IEEE Access	Jun. 2021
• Invited Reviewer for IEEE Transactions on Mobile Computing	Dec. 2020