Junfeng (Jayden) Guan

PhD Student, ECE
University of Illinois at Urbana-Champaign

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Research Interests

Wireless Networking and Sensing, mmWave Systems, Phased Array Antenna, and Machine Learning

Education

University of Illinois at Urbana-Champaign, Urbana, IL May 2017-Present

Ph.D. Student, Electrical and Computer Engineering GPA: 4.00/4.00

Advisor: Dr. Haitham Hassanieh

University of Illinois at Urbana-Champaign, Urbana, IL Sept 2013-May 2017

Bachelor of Science, Electrical Engineering GPA: 3.88/4.00

Publication

Many-to-Many Beam Alignment in Millimeter Wave Networks
Suraj Jog, Jiaming Wang, Junfeng Guan, Thomas Moon, Haitham Hassanieh, Romit Roy Choudhury
NSDI 2019

MUTE: Bringing IoT to Noise Cancellation
Sheng Shen, Nirupam Roy, Junfeng Guan, Haitham Hassanieh, Romit Roy Choudhury
ACM SIGCOMM 2018

Online Millimeter Wave Phased Array Calibration Based on Channel Estimation
Thomas Moon, Junfeng Guan, Haitham Hassanieh
IEEE VLSI Test Symposium 2019

Poster: Networked Acoustics Around Human Ears
Sheng Shen, Nirupam Roy, Junfeng Guan, Haitham Hassanieh, Romit Roy Choudhury
ACM MobiCom 2018

Simultaneous Wireless Power Transfer and Communication to Chip-Scale Devices
Brandon Arakawa, Liuqing Gao, Yansong Yang, Junfeng Guan, Anming Gao, Ruochen Lu, Songbin Gong
IEEE MTT-S International Microwave Symposium 2017

A 150 MHz Voltage Controlled Oscillator using Lithium Niobate RF-MEMS Resonator
Ali Kourani, Yong-Ha Song, Brandon Arakawa, Ruochen Lu, Junfeng Guan, Anming Gao, Songbin Gong
IEEE MTT-S International Microwave Symposium 2017

Research Projects

mmWave Super-Resolution Imaging — Aug 2017 - Present

- Built a mmWave FMCW Synthetic-aperture radar imaging system for self-driving cars
- Implemented practical and fast super-resolution image processing algorithms
- Trained a conditional GAN model to improve object boundary detection

Sparse Fourier Transform-Based Spectrum Sensing — Sept 2018 - Present

- Developing an energy-efficient chip-scale spectrum sensors for crowded wide spectrum

mmWave Phased Array Transceiver — Jan 2018 – Jun 2018

- Built and calibrated a 24GHz eight-element phased array antenna transceiver
- Designed an over-the-air calibration method for phased array antennas

Ventrilocation — Feb 2016 – Apr 2017

- Designed and built a delay line circuit based plug-in device to fake smartphone location from the OTDOA positioning in LTE networks

Awards and Honors

SIGCOMM'18 Student Travel Grant — 2018

Highest Honors at Graduation, UIUC — 2017

Edward C. Jordan Award, UIUC — 2017

Teaching Experience

Lab Teaching Assistant — Aug 2018 - Dec 2018

Course: Communication System Laboratory (ECE 463, UIUC)

Leadership Activities

Co-Founder & Executive President — Jan 2016 - Apr 2017

UIUC US-China Innovation & Development Forum

Secretary General & Vice-President — May 2015 - May 2017

Chinese Students and Scholars Association, UIUC