

# Yue Wu

+86-18510188801  
wuyue16@pku.edu.cn



## Education

- 2016–present **School of Electronics Engineering and Computer Science, Peking University.**  
Undergraduate, advisor: Chenren Xu
- 2018 summer **Efficient Computing Group, Rice University.**  
7.8-9.8 Summer intern, advisor: Lin Zhong
- 2019 summer **Efficient Computing Group, Rice University.**  
6.25-9.7 Summer intern, advisor: Lin Zhong

## Research and Awards

- 2019/10/25 **Improving Visible Light Backscatter Communication with Delayed Superimposition Modulation.**  
Advisor: Chenren Xu, Software-hardware Orchestrated Architecture Group, PKU  
  - Exploring the physical model of TN-LCD in VLBC (Visible Light Backscatter Communication), I designed a new modulation scheme called DSM (Delayed Superimposition Modulation) based on its intrinsically asymmetric transition, to boost data rate up to 4x over state of the art.
- 2019/10/25 **ACM MobiCom 2019 Student Research Competition 1st Place.**  
Advisor: Chenren Xu, Software-hardware Orchestrated Architecture Group, PKU  
Poster: Polarization-based QAM for Visible Light Backscatter Communication  
  - I built a software system using MCU as SDR (Software-defined Radio) device and developed joint demodulation algorithm for PQAM and DSM that reaches 12x throughput than state of the art.
- 2018/11/3 **Demo: Long Range Retroreflective V2X Communication with Polarization-based Differential Reception (Best Demo Award).**  
Advisor: Chenren Xu, Software-hardware Orchestrated Architecture Group, PKU  
  - Accepted to SenSys18.
  - A polarization-based differential reception scheme to suppress ambient noise and realize long range retroreflective V2X communications
- 2018/7/24 **2018 Intel Cup Undergraduate Electronics Design Contest — Embedded System Design Invitational Contest (First Prize).**  
Advisor: Xiaohui Duan, EECS, PKU  
  - Title: Put and Use IoT Table
  - A scalable software defined charging network, which enables wireless charging and communication on a surface. Inspired by SDR, this work proposed software-defined coils, which dynamically generates coils and routes to charging drivers for energy transmission as well as NFC communication.
- 2017/10/16 **ACM MobiCom 2017 Student Research Competition 2nd Place.**  
Advisor: Chenren Xu, Software-hardware Orchestrated Architecture Group, PKU  
Poster: Smart RF Table Enables IoT on a Desk  
  - A table which enables wide-range wireless charging and communication through magnetic coupling. It's able to power up small gadgets like desk lamp and detect objects with NFC tags on it.
- 2015 **32th Chinese Physics Olympiad (CPhO) Gold Medal.**

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## Publications

- 2019 **Improving Visible Light Backscatter Communication with Delayed Superimposition Modulation**, Yue Wu, Purui Wang, Chenren Xu, ACM MobiCom, 2019.
- 2019 **Poster: Polarization-based QAM for Visible Light Backscatter Communication**, Purui Wang, Yue Wu, Chenren Xu, ACM MobiCom, 2019.
- 2019 **Poster: Retroreflective MIMO Communication**, Yue Wu, Kenuo Xu, Hao He, Zihang Wu, Chenren Xu, ACM HotMobile, 2019.
- 2018 **Long Range Retroreflective V2X Communication with Polarization-based Differential Reception**, Xu, Xieyang and Shen, Yang and Chen, Guojun and Wu, Yue and Feng, Lilei and Wang, Qing and Xu, Chenren, ACM SenSys, 2018.
- 2018 **Software-defined Visible Light Backscatter Network**, Xu, Xieyang and Shen, Yang and Chen, Guojun and Wu, Yue and Feng, Lilei and Wang, Qing and Xu, Chenren, ACM MobiSys, 2018.
- 2017 **Poster: Smart RF Table Enables IoT on a Desk**, Wu, Yue and Li, Caihua and Shi, Jieqi, ACM MobiCom, 2017.

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## Travel History

- M.X. **Attending ACM MobiCom'19**, 10.21 - 10.25, 2019, San Jose, Baja california sur.
- U.S. **Summer Intern**, 6.25 - 9.7, 2019, Houston, Texas.
- U.S. **Attending ACM HotMobile'19**, 2.26 - 3.2, 2019, Santa Cruz, California.
- China **Attending ACM SenSys'18**, 11.3 - 11.7, 2018, Senzhen, Guangdong.
- U.S. **Summer Intern**, 7.1 - 9.8, 2018, Houston, Texas.
- U.S. **Attending ACM MobiCom'17**, 10.16 - 10.21, 2017, Snowbird, Utah.
- U.S. **Health++ Hackathon**, 10.15 - 10.23, 2017, San Francisco, California.

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## Skills

- Software Rust, C/C++, Python, JavaScript, HTML, Verilog/VHDL
- Hardware Circuit design (Schematic and PCB), Welding, MCU programming, FPGA
- Mechanical 3D design and printing, CAD design

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## Interests

- Maker: innovating new ideas and making them into reality
- Erhu: I play Erhu for 15 years joining orchestra and played in several concerts

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## Positions

- 2018–present **president of IT department**, PKU Geeklab.
- 2018–2019 **president**, PKU Makerspace.
- 2017–2018 **director-general**, PKU Makerspace.