ZHIHUI GAO

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RESEARCH INTERESTS

Spectrum Sensing, Millimeter Wave Communication, Network Resource Allocation, Joint Communication and Sensing, Cyber Physical Systems, Internet-of-Things.

EDUCATION

- **Duke University**   *Durham, NC*
  Ph.D. in Electrical and Computer Engineering   *August 2020 - Present*
  Advisor: Prof. Tingjun Chen and Prof. Yiran Chen

- **Fudan University**   *Shanghai, China*
  B.Eng. in Electrical Engineering   *September 2016 - June 2020*
  Advisor: Prof. Yuedong Xu

- **University of Texas at Austin**   *Austin, TX*
  Exchange Program in Electrical and Computer Engineering   *August 2018 - December 2018*

PUBLICATION

- **Zhihui Gao**, Yiran Chen, Tingjun Chen. Swirls: Sniffing Wi-Fi using radios with low sampling rates. In *Proc. ACM International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (**MobiHoc'23**)*, 2023.

- Zhenzhou Qi, **Zhihui Gao**, Chung-Hsuan Tung, and Tingjun Chen. Programmable millimeter-wave MIMO radios with real-time baseband processing. In *Proc. ACM MobiCom23 Workshop on Wireless Network Testbeds, Experimental Evaluation & CHaracterization (**WiNTECH'23**)*, 2023.

- Tingjun Chen, Prasanthi Maddala, Panagiotis Skrimponis, Jakub Kolodziejski, Abhishek Adhikari, Hang Hu, **Zhihui Gao**, Arun Paidimarri, Alberto Valdes-Garcia, Myung Lee, Sundeep Rangan, Gil Zussman, Ivan Seskar. (INVIED) Open-access millimeter-wave software-defined radios in the PAWR COSMOS testbed: Design, deployment, and experimentation. In *Elsevier Computer Networks (**COMNET'23**)*, 2023.

- Jianyi Zhang, Zhixu Du, Jingwei Sun, Ang Li, Minxue Tang, Yuhao Wu, **Zhihui Gao**, Martin Kuo, Hai-Helen Li, Yiran Chen. Next Generation Federated Learning for Edge Devices: An Overview. (INVIED) In *Proc. IEEE International Conference on Collaboration and Internet Computing (**CIC'22**)*, 2022.

- **Zhihui Gao**, Ang Li, Dong Li, Jialin Liu, Jie Xiong, Yu Wang, Bing Li, Yiran Chen. MOM: Microphone based 3D Orientation Measurement. In *Proc. ACM/IEEE International Conference on Information Processing in Sensor Networks (**IPSN'22**)*, 2022.

- **Zhihui Gao**, Minxue Tang, Ang Li, Yiran Chen. An Audio Frequency Unfolding Framework for Ultra-Low Sampling Rate Sensors. (INVITED) In *Proc. IEEE International Symposium on Quality Electronic Design (**ISQED'22**)*, 2022.

- **Zhihui Gao**, Ang Li, Yunfan Gao, Bing Li, Yu Wang, Yiran Chen. FedSwap: A Federated Learning based 5G Decentralized Dynamic Spectrum Access System. (INVITED) In *Proc. IEEE/ACM International Conference On Computer Aided Design (**ICCAD'21**)*, 2021.

- **Zhihui Gao**, Ang Li, Yunfan Gao, Yu Wang, Yiran Chen. Hermes: Decentralized Dynamic Spectrum Access System for Massive Devices Deployment in 5G. In *Proc. International Conference on Embedded Wireless Systems and Networks (**EWSN'21**)*, 2021.

- **Zhihui Gao***, Yunfan Gao*, Sulei Wang, Dan Li, Yuedong Xu. CRISLoc: Reconstructable CSI Fingerprinting for Indoor Smartphone Localization. *IEEE Internet of Things Journal (**IoT Journal**)*, 2020.

TEACHING AND EDUCATION

- Teaching Assistant at ECE495 at Duke University in 2023 Fall.   *Durham, NC*
- Athena outreach at Duke Public School in 2023 Spring.   *Durham, NC*

MENTORING

- Xiangru Chen, Master student at Duke University
- Yiming Li, Master student at Duke University
- Zeyu Li, Undergraduate student at Duke University
- Yixin Liang, Undergraduate student at Zhejiang University

REVIEW SERVICE

- IEEE Internet of Things Journal
- IEEE Transactions on Services Computing
- ACM International Conference On Mobile Computing And Networking (MobiCom) 2023
- ACM International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (MobiHoc) 2023
- ACM International Conference on Mobile Systems, Applications, and Services (MobiSys) 2023
- ACM/IEEE Conference on Internet of Things Design and Implementation (IoTDI) 2023
- ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN) 2023
- IEEE International Conference on Computer Communications (InfoCom) 2023, 2022
- ACM/IEEE Symposium on Edge Computing (SEC) 2022
- IEEE International Conference on Parallel and Distributed Systems (ICPADS) 2023
- ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BuildSys) 2023
- ACM International Workshop on Edge Systems, Analytics and Networking (EdgeSys) 2022
- IEEE International Conference on Pervasive Computing and Communications (PerCOM) 2022
- ACM International joint conference on pervasive and ubiquitous computing (UbiComp) 2021
- ACM International Conference on Machine Learning (ICML) 2021
- ACM Conference on Embedded Networked Sensor Systems (SenSys) 2021

PROFESSIONAL SKILLS

- Programming Language: MATLAB, Python, Android Studio.
- Hardware: IBM 28-GHz Phased Array Board, USRP Software Defined Radio, Raspberry Pi.