

# HAO ZHOU

Ph.D. Candidate, Department of Computer Science and Engineering, The Pennsylvania State University

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## RESEARCH OVERVIEW

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I am a Ph.D. candidate, working in the areas of **wearable/wireless sensing, and multimodal learning**, and targeting various real-world applications, including **pose estimation, digital health, and accessibility topics such as sign language recognition**.

On top of **various sensor data (IMU, Vision, Ultra-wideband, Acoustics, etc.)**, I develop practical systems by designing signal processing and machine learning algorithms.

## EDUCATION

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**The Pennsylvania State University**

*Doctor of Philosophy in Computer Science and Engineering*

*Advisor: Dr. Mahanth Gowda*

State College, PA, USA

*2021 - Present*

**The University of Mississippi**

*Master of Science in Computer Science*

*Bachelor of Science in Computer Science*

Oxford, MS, USA

*2019 - 2021*

*2016 - 2019*

## INDUSTRIAL EXPERIENCE

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**Microsoft Research Asia**, Shanghai, China

May 2023 - Aug 2023

- Research intern mentored by Dr. Jie Xiong.
- Ultra-wideband (UWB) Sensing on Consumer-level Devices for respiration, device attitude, etc.
- Intersection of 3D Vision (LiDAR) and Wireless Sensing.

## SELECTED PUBLICATIONS

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[**ACM MobiCom 2023**] **Hao Zhou**, Taiting Lu, Kristina McKinnie, Joseph Palagano, Kenneth DeHaan, and Mahanth Gowda, “*SignQuery: A Natural User Interface and Search Engine for Sign Language with Wearable Sensors*”.

[**ACM/IEEE IoTDI 2023**] **Hao Zhou**, Taiting Lu, Yilin Liu, Shijia Zhang, Runze Liu, and Mahanth Gowda, “*One Ring to Rule Them All: An Open Source Smartring Platform for Finger Motion Analytics and Healthcare Applications*”, **Best Paper Award for Edge IoT AI**.

[**ACM Transactions on Internet of Things 2023**] Shijia Zhang, Taiting Lu, **Hao Zhou**, Yilin Liu, Runze Liu, and Mahanth Gowda, “*I am an Earphone and I can Hear my Users Face: 3D Facial Reconstruction using Smart Earphones*”.

[**ACM IMWUT/UbiComp 2022**] **Hao Zhou**, Taiting Lu, Yilin Liu, Shijia Zhang, and Mahanth Gowda, “*Learning on the Rings: Self-Supervised 3D Finger Motion Tracking using Wearable Sensors*”.

[**NeurIPS 2023 Workshop**] Xi Li, Songhe Wang, Chen Wu, **Hao Zhou**, and Jiaqi Wang, “*Backdoor Threats from Compromised Foundation Models to Federated Learning*”.