

# XIANGYU YIN

## PHD CANDIDATE

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PITTSBURGH, PA, USA

## RESEARCH INTERESTS

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Mobile Sensing, AI in Healthcare, AIoT, Robotics.

## EXPERIENCE

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2019 - Present

### Graduate Student Researcher

Intelligent System Lab, Department of Electrical & Computer Engineering  
University of Pittsburgh, Pittsburgh, PA

- Developed smartphone-based acoustic sensing systems and machine learning tools for pulmonary disease (asthma, COPD, etc.) evaluation. This is a collaboration with pulmonologists at UPMC Children's Hospital of Pittsburgh under IRB approval.
- Developing vision-based AI applications to ease prosthesis alignment for individuals with disabilities.
- Contributed to the implementation of several projects that aim to improve AI explainability and efficiency.

2020 - 2022

### Teaching Assistant

Department of Electrical and Computer Engineering  
University of Pittsburgh, Pittsburgh, PA

- ECE 1150 – Computer Networks (Fall 2020 - Spring 2021)
- ECE 1175 – Embedded System Design (Fall 2021 - Spring 2022)

2018 - 2019

### Research Assistant

Department of Automation  
University of Science and Technology of China (USTC), Hefei, China

- Developed hardware-in-the-loop (HIL) simulation tools for testing UAV flight control system.

## EDUCATION

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April 2025 (Anticipated)

### Ph.D. in Electrical and Computer Engineering

University of Pittsburgh, Pittsburgh, PA  
Advisor: Prof. Wei Gao

June 2019

### B.Eng. in Automation

University of Science and Technology of China (USTC), Hefei, China  
Enrolled in the *Talent Program in Information Science and Technology*  
Graduated from the *School of the Gifted Young*

## PUBLICATIONS

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1. **[arXiv]** Song, J., Huang, K., Yin, X., Yang, B., & Gao, W. (2024). Achieving Sparse Activation in Small Language Models. *arXiv preprint arXiv:2406.06562*. <https://doi.org/10.48550/arXiv.2406.06562>
2. **[MobiCom'24]** Huang, K., Yin, X., Gu, T., & Gao, W. (2024). Perceptual-Centric Image Super-Resolution using Heterogeneous Processors on Mobile Devices. (Acceptance Rate: 19.1%)
3. **[MobiSys'23]** Yin, X., Huang, K., Forno, E., Chen, W., Huang, H., & Gao, W. (2023, June). PTEase: Objective Airway Examination for Pulmonary Telemedicine using Commodity Smartphones. In *Proceedings of the 21st Annual International Conference on Mobile Systems, Applications and Services* (pp. 110-123). <https://doi.org/10.1145/3581791.3596854> (Acceptance Rate: 20.7%)
4. **[CML-IOT'22/SenSys'22]** Yin, X., Huang, K., Forno, E., Chen, W., Huang, H., & Gao, W. (2022, November). Out-Clinic Pulmonary Disease Evaluation via Acoustic Sensing and Multi-Task Learning on Commodity Smartphones. In *Proceedings of the 20th ACM Conference on Embedded Networked Sensor Systems* (pp. 1182-1188). <https://doi.org/10.1145/3560905.3568437> (**Best Paper Award**)

## PROFESSIONAL ACTIVITIES

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### Presentations:

- “Perceptual-Centric Image Super-Resolution using Heterogeneous Processors on Mobile Devices”, The 30th Annual International Conference on Mobile Computing and Networking (MobiCom'24), Washington, D.C., November 2024
- “Smartphone-Based Acoustic Waveform Airway and Respiratory Examination”, ATS 2023 International Conference, Washington, D.C., May 2023 (Poster)
- “Out-Clinic Pulmonary Disease Evaluation via Acoustic Sensing and Multi-Task Learning on Commodity Smartphones”, The Fourth Workshop on Continual and Multimodal Learning for Internet of Things (CML-IOT'22), Co-Located with SenSys 2022, Boston, MA, November 2022
- “Acoustic Waveform Respiratory Evaluation (AWARE)”, i4Kids Symposium, UPMC Children's Hospital of Pittsburgh, Pittsburgh, PA, June 2022
- “Neural Network Memoization for Scalable Edge Inference”, Elijah Meeting, Dept. of Computer Science, Carnegie Mellon University, Pittsburgh, PA, March 2022

### Conference Reviewer:

- 2023 IEEE/ACM international conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE'23)
- 2023 IEEE International Conference on Communications (ICC'23) E-health Track
- 2023 IEEE International Conference on Computer Communications (INFOCOM'23)
- The 19th IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS'22)

## SKILLS & ABILITIES

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**Programming Skills:** MATLAB, C/C++, Python, Java, JavaScript, HTML, SQL, LaTeX

**Software & Tools:** MATLAB, PyTorch, Keil, Autodesk Fusion, UltiMaker Cura

**Hardware Platforms:** Android, STM32, Raspberry Pi, Nvidia Jetson

## HONORS & AWARDS

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November 2024	<b>Student Travel Grant</b> ACM MobiCom'24
November 2022	<b>Best Paper Award</b> ACM CML-IOT'22
December 2017	<b>Bronze Prize of Scholarship for Outstanding Students in USTC</b> University of Science and Technology of China (USTC)
August 2017	<b>National Second Prize / Provincial First Prize</b> National Undergraduate Electronic Design Contest
December 2016	<b>Seagate Scholarship of USTC</b> University of Science and Technology of China (USTC)