
Education

- 2022–Present **PhD., School of Computer Science, Carnegie Mellon University**, Pittsburgh, PA, US.
Societal Computing, Software and Societal Systems Department
Advisors: Yuvraj Agarwal, Mayank Goel.
- 2018–2021 **B.S., Department of Computer Science, Purdue University**, West Lafayette, IN, US.
Computer Science Honors, Minor in Mathematics
GPA: 3.97/4.00, Graduation with Highest Distinction.

Research Experience

- 2022–2024 **Multi-User Privacy Negotiation System for Shared IoT Devices**, [C.3]
Carnegie Mellon University, Pittsburgh, PA, US; Advisors: Yuvraj Agarwal, Mayank Goel.
 - Designed a negotiation system that strategically elicits user preference and proposes configurations.
 - Built a custom shared-space privacy profile model with survey responses from 198 mTurk workers.
 - Evaluated the negotiation system on 30 users and showed 83.3% overall outcome satisfaction.
- 2022–2024 **Privacy-Preserving Audio Featurization under Modern ASR**, [C.2, D.1]
Carnegie Mellon University, Pittsburgh, PA, US; Advisors: Yuvraj Agarwal, Mayank Goel.
 - Revealed speech content inference vulnerability on 4 prior privacy-oriented featurization approaches.
 - Presented an ML-based speech filter detects and removes speech on resource-constrained devices.
- 2021–2022 **Systematic Analysis of Side-Channel Attacks on Mobile Sensors**,
Purdue University, West Lafayette, IN, US; Advisors: Z. Berkay Celik.
 - Systematically reviewed 105 sensor side-channel attack papers from security and mobile conferences.
 - Synthesized categories of threat models, device assumptions, sensor USge, and information leakage.
- 2019–2021 **Semantic Network of Kitchen Things for Cooking Assistance**, [J.1]
Purdue University, West Lafayette, IN, US; Advisors: Richard M. Voyles.
 - Designed appliance-domain and cooking-domain ontology to reason cooking states and context
 - Propotyped mobile app connecting with sensor-equipped smart food containers with BLE

Industrial Experience

- 2024 **Procter and Gamble**, *Ph.D. Research & Development Intern*, Mason, OH
May–Aug Data science in real time in-context and privacy preserving consumer understanding.
- 2022 **Trendalyze Inc.**, *Data Science Intern*, Newark, NJ (Remote)
Feb–May Electrocardiogram (ECG) timeseries analysis on QRS complex and R-peak detection.

Teaching Experience

- 2024 Spring **17722: Building User-Focused Sensing Systems**, Graduate Teaching Assistant,
Carnegie Mellon University, Pittsburgh, PA, US.
Topics: signal processing and ML with IMU, audio, vision; research review on sensing.
- 2021 Fall **CS250: Computer Architecture**, Undergraduate Teaching Assistant,
Purdue University, West Lafayette, IN, US
Topics: digital logic, memory systems, processes, I/O interfaces, assembly language.
- 2021 Fall **STAT290: The Data Mine II**, Undergraduate Teaching Assistant,
Purdue University, West Lafayette, IN, US
Topics: data processing, visualization, analysis, statistical testing, R programming, SQL.

2021 Spring **CS390: Neural Image Processing**, Undergraduate Teaching Assistant, Purdue University, West Lafayette, IN, US
Topics: image classification, style transfer, generation, deep learning, CNN, GAN, VAE.

Presentations & Invited Talks

- 2024 Sept **CyLab Partner Conference** *Bring Privacy To The Table: Interactive Negotiation for Privacy Settings of Shared Sensing Devices*, Pittsburgh, PA, US.
- 2024 May **CHI '24** *Bring Privacy To The Table: Interactive Negotiation for Privacy Settings of Shared Sensing Devices*, Honolulu, HI, US.

Fellowships & Awards

- 2024 Aug **CMLH Fellowship in Digital Health Innovation**, Carnegie Mellon University
- 2023 Oct **Sansom Graduate Fellowship**, Carnegie Mellon University
- 2021 Dec **Graduation with Highest Distinction**, Purdue University
- 2021 Apr **College of Science Alumni Summer Research Fellowship**, Purdue University
- 2019–2021 **Dean's List and Semester Honors**, Purdue University

Skills and Competencies

Research Methods: System Prototyping, Human-Centered Design, User Studies, Surveys
Machine Learning: Computer Vision, NLP, Multimodal ML; PyTorch, TensorFlow
Sensing and Signals: Audio, Video, IMU, mmWave Radar, Passive Infrared (PIR)
Software Development: Python, Java, C/C++, Javascript, HTML, Vue, React, Android, iOS

Publications

Refereed Conference Articles

- [C.3] **Haozhe Zhou**, Mayank Goel, Yuvraj Agarwal. 2024. Bring Privacy To The Table: Interactive Negotiation for Privacy Settings of Shared Sensing Devices. *CHI Conference on Human Factors in Computing Systems* (CHI '24)
- [C.2] Sudershan Boovaraghavan, **Haozhe Zhou**, Mayank Goel, Yuvraj Agarwal. 2024. Kirigami: Lightweight Speech Filtering for Privacy-Preserving Activity Recognition using Audio. *ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (UbiComp '24)
- [C.1] Upinder Kaur, **Haozhe Zhou**, Xiabin Shen, Byung-Cheol Min, and Richard M. Voyles. 2021. RoboMal: Malware Detection for Robot Network Systems. *IEEE International Conference on Robotic Computing*. (IRC '21)

Refereed Journal Articles

- [J.1] Sangjun Eom, **Haozhe Zhou**, Upinder Kaur, Richard M. Voyles, David Kusuma. 2022. TupperwareEarth: Bringing Intelligent User Assistance to the "Internet of Kitchen Things". *IEEE Internet of Things Journal*.

Demos and Posters

- [D.1] **Haozhe Zhou**, Sudershan Boovaraghavan, Mayank Goel, Yuvraj Agarwal. 2024. On-Device Speech Filtering for Privacy-Preserving Acoustic Activity Recognition *The 30th Annual International Conference on Mobile Computing and Networking*. (MobiCom '24)