HOWARD(ZIYU) HAN

Website: https://howardhan.com/
+1(412) 214-2624 ziyuh@andrew.cmu.edu

EDUCATION

Carnegie Mellon University, Pittsburgh, PA, United States 2024 - now
Ph.D. in Human-Computer Interaction
Advisor: Nik Martelaro

Carnegie Mellon University, Pittsburgh, PA, United States 2021 - 2023
Master of Science in Computational Design
Thesis Committee: Daragh Byrne, Sarah Fox, Nikolas Martelaro

Tongji University, Shanghai, China 2016 - 2021
Bachelor of Engineering in Urban Planning

ONGOING PROJECTS

Human Agent Interaction for More Adaptive and Contested Design Processes Jan 2025 – Present
Role: *Lead PhD* — Currently Developing modeling techniques and technical systems that help designers coordinate multiple LLM agents representing diverse modes of thinking to enhance adaptive design processes.
– One paper is under submission to CHI 2026, with another in preparation for UIST 2026.

Community Driven Public Space Robot Social Navigation and Communication Sep 2024 – Present
Role: *Lead PhD* — Currently Revising and extending a robot social navigation simulator to model wheelchair users, allowing them to experience sidewalk sharing with delivery robots and demonstrate accessible social navigation behaviors for robot learning.
– Published in CHI 2024 and ASSETS 25, with ongoing work preparing for HRI 2026.
– Covered by Tech Xplore, and CMU School of Computer Science

PUBLICATIONS

- ***Howard Han*** and Nikolas Martelaro. "Enacting Facets of Adversarial Design with AI Agents." In submission to the 2026 CHI Conference on Human Factors in Computing Systems (CHI 2026).
- ***Howard Han***, Franklin Mingzhe Li, Alesandra Baca Vazquez, Daragh Byrne, Nikolas Martelaro, Sarah Fox. "Co-design Accessible Public Robots: Insights from People with Mobility Disabilities, Robotic Practitioners, and Their Collaborations." In Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI 2024).
- ***Howard Han***, Franklin Mingzhe Li, Nikolas Martelaro, Daragh Byrne, Sarah Fox. "The Robot in Our Path: Investigating the Perceptions of People with Motor Disabilities on Navigating Public Space Alongside Sidewalk Robots." In Proceedings of the 2023 ACM SIGACCESS Conference on Computers and Accessibility (ASSETS).
- ***Howard Han***, Sarah Fox, Nikolas Martelaro. "Integrating Urban Accessibility into Human-Robot Interaction Evaluation." In The 2nd Annual Workshop on The Future of Urban Access at ASSETS.
- Xin Yi, ***Howard Han***, Xinge Liu, Yutong Ren, Xin Tong, Yan Kong, Hewu Li. "Catch My Eyebrow, Catch My Mind: Examining the Effect of Upper Facial Expressions on Emotional Experience for VR Avatars." In Proceedings of the 2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops.
- Wesley H. Deng, Claire Wang, ***Howard Han***, Jason I. Hong, Kenneth Holstein, Motahhare Eslami. "WeAudit: Scaffolding User Auditors and AI Practitioners in Auditing Generative AI." *Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)* 2025. **Best Paper Award**

- Xueyang Wang, Sheng Zhao, Yihe Wang, ***Howard Han***, Xinge Liu, Xin Tong, Xin Yi, Hewu Li. "Facilitating Emotional Communication in Social Virtual Reality Through Region-Specific Facial Expression Scaling." To appear in Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI 2025).
- Hui Tian, ***Howard Han***, Weishun Xu, Xun Liu, Waishan Qiu, and Wenjing Li. "Evolution of Historical Urban Landscape with Computer Vision and Machine Learning: A Case Study of Berlin." In Journal of Digital Landscape and Architecture (2021).
- ***Howard Han*** (2023). "Designing for Accessible Sidewalk Robots – Insights from People with Motor Disabilities." Carnegie Mellon University. Master Thesis.

RESEARCH EXPERIENCE

Research Assistant at CMU Human-Computer Interaction Institute — Sep 2023 - Now
Pittsburgh, PA

- Initiated and led a Human-Robot Interaction (HRI) project to evaluate how people with disabilities perceive the designs of sidewalk robots using simulation videos and co-design accessible public service robot technology, resulting in a CHI 2024 full paper submission and an ASSETS 2023 poster.

Research Associate at CoALA Lab at CMU — Feb 2023 - Sep 2023
Advised by Prof. Ken Holstein and Prof. Motahhare Eslami — *Pittsburgh, PA*

- Co-led a Responsible AI project to understand how everyday users search socially harmful behaviors in text-to-image systems and develop a pipeline to scaffold bias searching, resulting in a workshop paper at CSCW 23. Full paper in preparation for FAccT 2024.

Research Assistant at Tsinghua Pervasive HCI Group — May 2022 - Feb 2023
Advised by Prof. Xin Yi and Xin Tong (Duke Kunshan University) — *Beijing, China*

- Led a social VR project to evaluate virtual avatar facial expressions and trained an ML model to augment VR communications by generating masked upper facial expressions.

SKILLS

Technical Skills	Python, C, C#, JavaScript, Unity, PyTorch, HTML/CSS, R, React, Arduino, GIS, ROS
Design Skills	3D modeling, UI/UX, Photoshop, Video editing, Animations, Figma, Sketch
Research Skills	Qualitative coding, User studies, Interviews, Quantitative data analysis, Prototyping

AWARDS

- CMU Graduate Small Project Help (GuSH) Research Funding 2($7502)
- CMU Merit Scholarship ($20000)
- CMU Computational Design Microgrant ($1000)
- Challenge Cup National Third Prize (China's biggest student innovation award)

ACADEMIC SERVICE

DIS Student Volunteer	2023
DIS Reviewer	2023
IEEE VR Reviewer	2024