HOWARD(ZIYU) HAN

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EDUCATION

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

Carnegie Mellon University (CMU), Pittsburgh, PA, United States
Master of Science in Computational Design
Thesis Committee: Daragh Byrne, Sarah Fox, Nikolas Martelaro

Tongji University, Shanghai, China
Bachelor of Engineering in Urban Planning

PUBLICATIONS

- 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." Conditionally accepted by Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) 2025.
- 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.

ONGOING PROJECTS

Antagonistic AI Agent for Constructive Conflicts in Public-Sector Design Dec 2024 - Now Role: Lead PhD - Building an antagonistic design agent to surface contextual tensions from negatively influenced stakeholders to help novice designers build resilience and inclusiveness. Preparing for CHI 2026.

Engaging Wheelchair Users to Evaluate and Co-design Robot Social Navigation Sep 2024 - Now Role: Lead PhD - Revising an existing robot social navigation simulator to support modeling wheelchair

users and enable them to experience sharing sidewalks with delivery robots and demonstrate accessible social navigation for robot learning. Preparing for HRI 2026.

Heterogeneous Crowd Social Navigation Data Collection in Public Spaces Jan 2025 - Now Role: *Collaborator* - A cross-country collaborative project aiming to collect real-world, scenario-based pedestrian movement and robot navigation in crowds dataset. Responsible for data collection at Carnegie Mellon University.

RESEARCH EXPERIENCE

Research Assistant at CMU Human-Computer Interaction Institute *Pittsburgh*, *PA*

Sep 2023 - Now

• 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.

TEACHING EXPERIENCE

Human Factors, CMU HCII

2023

Instructor: Laura Dabbish

Pittsburgh, PA

• Hosted office hours and graded assignments, exams, and final projects with another teaching assistant.

PROJECT

City360: Co-design Community Gardens

- Initiated a two-year civic participation project in Shanghai, facilitating three community garden regenerations to accommodate more public activities.
- Developed a participatory toolkit consisting of a website and a mobile app with an interdisciplinary team. Educated over 60 community members in using them to engage in space regeneration.

SKILLS

Technical Skills Design Skills Research Skills Python, C, C#, JavaScript, Unity, PyTorch, HTML/CSS, R, React, Arduino, GIS 3D modeling, UI/UX, Photoshop, Video editing, Animations, Figma, Sketch

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