Ziru Wei

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Interested Topics: Technical HCI, Human–Robot Interaction, User Modeling, Multimodal Interaction, Extended Reality

Education

Carnegie Mellon University 2026.05
- Master of Science in Computational Design (HCI focus), GPA: 4.14/4.33
- Thesis: *Towards Multimodal Interaction with Proactive Physical Agents* (Advised by Prof. Alexandra Ion)

Soochow University 2024.06
- Bachelor of Architecture, GPA: 3.7/4.0

Publications

(In submission, CHI 2026) "Let me lend you a hand": Understanding Contextual Perceptions of Physical Proactivity in Small-scale Personal Assistance Robots
Ziru Wei, Violet Yinuo Han, Tanvi Handoo, Alexandra Ion

(In submission, CHI 2026) Embodiment and Interaction Influence Perceptions of Robotic Collaborators in Everyday Physical Tasks
Violet Yinuo Han, Ziru Wei, Aiden Yiliu Li, Chris Wu, Alexandra Ion

On-site Holographic Building Construction: A Case Study of Aurora
Sijie Liu, Ziru Wei, Sining Wang. *Proceedings of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA)* , 2022 (peer-reviewed, 30 % acceptance, top-tier computational design conference)

Posters and Abstracts

Embodied Generative storytelling
Ziru Wei, Jimmy Cheng. Abstract accepted, 4S 2025 Conference: Reverberations, Seattle, WA, Sept 3–6, 2025.

Experience

Research Student at Interactive Structures Lab, Human-Computer Interaction Institute, Carnegie Mellon University 2025.04 - Present
- Designed and conducted a Wizard-of-Oz study on how users perceive a proactive portable personal robot performing different types of assistances across private, social, and public contexts; synthesized quantitative and qualitative findings into design recommendations for developing unobtrusive proactive physical assistance
- Developing a real-time computational pipeline for proactive physical agents to perceive and reason about contextual cues, and to orchestrate multimodal proactive behaviors to initiate assistance (ongoing)

Research Intern at WHY Research Lab, Carnegie Mellon University 2024.08 - 2025.01
- Replicated the 'Ladybug' project, which transformed dismantled disk drives into a scanning device through disassembly, resoldering, and Raspberry Pi integration
- Built the WasteStation database in Notion to map connections between components and potential reuse applications

Research Assistant, Humachine Lab, Soochow University 2021.08 - 2022.07
- Implemented MR workflows for nonlinear façade assembly and designed four on-site collaboration methods to maximize the use of limited MR devices within a small, low-tech construction team
- Documented the design-to-construction process and contributed to academic writing

Awards and Honors

Computational Design Commendation, Carnegie Mellon University 2025

Computational Design Commendation, Carnegie Mellon University 2024

Merit Scholarship, Carnegie Mellon University 2024

Excellence Award, Shanghai Youth Architectural Design Competition 2023

Innovation & Academic Excellence Scholarship, Soochow University 2020 - 2022

Overall Excellence Award Winner, Solar Decathlon China 2022

First Prize (Top 2%) in "Zijin Award" of Architectural Design Contest 2022

METTLER TOLEDO Scholarship (Top 2%) 2019

Skills

Technical
- Hardware: Arduino, Raspberry Pi
- Languages: Python, R, C#, Pascal, HTML, CSS, Javascript
- Game Engine: Unity

Design & Production
- Software: Rhino, Grasshopper with GHPython, Blender, AutoCAD, Adobe Creative Suite, Figma, Procreate
- Fabrication: 3D printing, Soldering and electronic wiring, Welding (basic), Woodworking

Languages
- English (Fluent), Mandarin (Native), Portuguese (Beginner)

Activities

Course Project Reviewer 2025.01 - 2025.05
- Worked as a Guest Reviewer for the Spring 2025 Fundamentals of Computational Design course at Carnegie Mellon University, taught by Prof. Vernelle A. A. Noel.
- Facilitated project reviews for over 50 students working in teams, providing feedback to support their growth in computational design practices.

Student Volunteer at des[AI]gn conference 2024, American Institute of Architecture Students 2024.10
- Assisted in workshop setup, documented the sessions through photography, and facilitated the use of interactive swatch-making software for creating knit samples in Textiles Lab, Carnegie Mellon University
- Coordinated logistics and facilitated the setup for an AI panel discussion and the opening session of the conference

Suzhou International Design Week 2021.12
- Exhibited 'Layered Rafters Lodge', a design integrating traditional material framing with modern bamboo construction techniques

Design Exhibition Curatorial Assistant 2021.05
- Organized featured models and drawings for the exhibition, assisting in the re-arrangement of the architecture department's showcase