

Ziru Wei

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Research Interests: Multimodal Interaction, Extended Reality, User Modeling, Human-Robot Interaction

EDUCATION

- Carnegie Mellon University** May 2026
- Master of Science in Computational Design (research-based, HCI focus), GPA: 4.14/4.33
 - Thesis Topic: *Toward Interacting with Proactive Intelligence in Everyday Physical Environments* (Advised by Prof. Alexandra Ion)
- Soochow University** Jun 2024
- Bachelor of Architecture, GPA: 3.7/4.0

RESEARCH WORKS

(In submission) “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) 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, Interactive Structures Lab, Human-Computer Interaction Institute, Carnegie Mellon University

Mar 2025 - Present

- Designed and conducted empirical human-robot interaction studies, investigating how users perceive proactive robot assistance across contexts, tasks, and proactivity; synthesized quantitative and qualitative results into design recommendations for unobtrusive assistance by physical agents
- Modeling task-aware interruptibility backed by MLLM to close-loop control robot behaviors to initiate contextually appropriate assistance (ongoing)

Research Intern, WHY Research Lab, Carnegie Mellon University

Aug 2024 - Jan 2025

- Replicated the “Ladybug” project by disassembling and re-soldering disk drives and integrating a Raspberry Pi
- Built the WasteStation database in Notion to map connections between components and potential reuse applications

Research Assistant, Humachine Lab, Soochow University

Aug 2021 - Jul 2022

- Implemented MR workflows for nonlinear façade assembly and designed four on-site collaboration methods to maximize the utilization of limited MR devices within a small, low-tech construction team
- Documented the design-to-construction process and contributed to academic writing

SKILLS

Technical

- Hardware: Arduino, Raspberry Pi
- Programming Languages: Python, R, C#, Pascal, HTML, CSS, JavaScript

Design & Production

- Software: Unity, 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)

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

ACTIVITIES

Course Guest Reviewer, Fundamentals of Computational Design (62-275), Spring 2025, Carnegie Mellon University	Jan 2025 - May 2025
<ul style="list-style-type: none">• Provided feedback on team-based computational design projects for over 50 students	
Student Volunteer at des[AI]gn conference 2024, American Institute of Architecture Students	Oct 2024
<ul style="list-style-type: none">• 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	Dec 2021
<ul style="list-style-type: none">• Exhibited ‘Layered Rafters Lodge’, a design integrating traditional material framing with modern bamboo construction techniques	
Design Exhibition Curatorial Assistant	May 2021
<ul style="list-style-type: none">• Organized featured models and drawings for the exhibition, assisting in the re-arrangement of the architecture department’s showcase	