

# Ziru Wei

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

## EDUCATION

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- Carnegie Mellon University** May 2026
- Master of Science in Computational Design (HCI focus), GPA: 4.14/4.33
  - Thesis: *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

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- (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

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

## EXPERIENCE

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- 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.
  - Developing an optimizer that selects, orchestrates, and schedules distributed multimodal outputs 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 utilization of limited MR devices within a small, low-tech construction team.
  - Documented the design-to-construction process and contributed to academic writing

## SKILLS

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### 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

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| <b>Computational Design Commendation, Carnegie Mellon University</b>         | 2025        |
| <b>Computational Design Commendation, Carnegie Mellon University</b>         | 2024        |
| <b>Merit Scholarship, Carnegie Mellon University</b>                         | 2024        |
| <b>Excellence Award, Shanghai Youth Architectural Design Competition</b>     | 2023        |
| <b>Innovation &amp; Academic Excellence Scholarship, Soochow University</b>  | 2020 - 2022 |
| <b>Overall Excellence Award Winner, Solar Decathlon China</b>                | 2022        |
| <b>First Prize (Top 2%) in “Zijin Award” of Architectural Design Contest</b> | 2022        |
| <b>METTLER TOLEDO Scholarship (Top 2%)</b>                                   | 2019        |

## ACTIVITIES

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