

Research Interests

My research focuses on **Human-AI Interaction**, **Accessibility**, **Eye Tracking**, and **eXtended Reality (XR)**. Specifically, my work spans the following areas:

- **Intent-Aware Interfaces**: Understanding human intent across different visual abilities via eye tracking and developing adaptive systems that make visual information more accessible.
- **Situated Well-being**: Building AI-driven just-in-time interventions to support mental well-being via XR.
- **Expressive GenAI Interaction**: Developing novel interactions for fine-grained, steerable content generation & editing.

Education

University of Wisconsin–Madison, Madison, WI

Sep 2021 – May 2027 (expected)

PhD in Computer Science

Research Advisor: Prof. Yuhang Zhao

University of California San Diego, La Jolla, CA

Sep 2019 – Jun 2021

MS in Computer Science

Research Advisors: Prof. Nadir Weibel, Prof. Xinyu Zhang

Shanghai Jiao Tong University, Shanghai, China

Sep 2015 – Jun 2019

BS in Computer Science

Publications

Conference Papers

- [C10] Ru Wang, Rahul Jain, Koichiro Niinuma, and Aakar Gupta. **SemanticSlider3D: Training-Free Continuous Semantic Editing for 3D Objects**. *To appear at UIST '26*
- [C9] Hanxiu 'Hazel' Zhu, Weiyu Zhang, Ru Wang, and Yuhang Zhao. **"It's Like Drinking from a Fire Hose": Understanding and Characterizing Video Learning Experiences for Individuals with ADHD**. *To appear at ASSETS '26*
- [C8] Ru Wang, Ruijia Chen, Anqiao Erica Cai, Zhiyuan Li, Sanbrita Mondal, and Yuhang Zhao. **Characterizing Visual Intents for People with Low Vision through Eye Tracking**. *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25)*
- [C7] Ru Wang, Kexin Zhang, Yuqing Wang, Keri Brown, and Yuhang Zhao. **"It was Mentally Painful to Try and Stop": Design Opportunities for Just-in-Time Interventions for People with Obsessive-Compulsive Disorder in the Real World**. *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25)*
- [C6] Hanxiu 'Hazel' Zhu, Avanthika Senthil Kumar, Sihang Zhao, Ru Wang, Xin Tong, and Yuhang Zhao. **Characterizing Collective Efforts in Content Sharing and Quality Control for ADHD-relevant Content on Video-sharing Platforms**. *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25)*
- [C5] Songlin Xu, Dongyin Hu, Ru Wang, and Xinyu Zhang. **PeerEdu: Bootstrapping Online Learning Behaviors via Asynchronous Area of Interest Sharing from Peer Gaze**. *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)*
- [C4] Ru Wang, Zach Potter, Yun Ho, Daniel Killough, Linxiu Zeng, Sanbrita Mondal, and Yuhang Zhao. **GazePrompt: Enhancing Low Vision People's Reading Experience with Gaze-Aware Augmentations**. *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24)*
- [C3] Ru Wang, Linxiu Zeng, Xinyong Zhang, Sanbrita Mondal, and Yuhang Zhao. **Understanding How Low Vision People Read Using Eye Tracking**. *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*

- [C2] Danilo Gasques, Janet G. Johnson, Tommy Sharkey, Yuanyuan Feng, Ru Wang, Zhuoqun Robin Xu, Enrique Zavala, Yifei Zhang, Wanze Xie, Xinming Zhang, Konrad Davis, Michael Yip, and Nadir Weibel. **ARTEMIS: A Collaborative Mixed-Reality System for Immersive Surgical Telementoring**. *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21)*
- [C1] Zhuoran Song, Ru Wang, Dongyu Ru, Zhenghao Peng, Hongru Huang, Hai Zhao, Xiaoyao Liang, and Li Jiang. **Approximate Random Dropout for DNN training acceleration in GPGPU**. *2019 Design, Automation & Test in Europe Conference & Exhibition (DATE '19)*

Posters & ArXivs

- [P2] Ru Wang, Nihan Zhou, Tam Nguyen, Sanbrita Mondal, Bilge Mutlu, and Yuhang Zhao. **Practices and Barriers of Cooking Training for Blind and Low Vision People**. *Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '23)*
- [P1] Matin Yarmand, Ru Wang, Haowei Li, and Nadir Weibel. **Evaluating Video Conferencing and Desktop Virtual Platforms for Supporting Remote Classroom Activities**. *Proceedings of the 17th International Conference on Computer-Supported Collaborative Learning (CSCL '24)*
- [A1] Ru Wang, Nihan Zhou, Tam Nguyen, Sanbrita Mondal, Bilge Mutlu, and Yuhang Zhao. **Characterizing Barriers and Technology Needs in the Kitchen for Blind and Low Vision People**. *arXiv preprint arXiv:2310.05396*

Patents

- [PA1] Yuhang Zhao, and Ru Wang. **Gaze aware reading assistance system**. *US Patent 12530078B2*

Industry Experience

Fujitsu Research of America , Santa Clara, CA <i>Research Scientist Intern</i> , mentor: Aakar Gupta Worked on slider-based continuous semantic control for 3D generation & editing [C10].	Sep 2025 – Apr 2026 (remote)
Tencent , Beijing, China <i>Software Engineering Intern</i> Worked on a Spark-based real-time data stream processing system for ads.	Jun 2019 – Aug 2019
Clobotics , Shanghai, China <i>R&D Intern</i> Worked on a beverage recognition & tracking IoT system in beverage coolers.	Dec 2018 – Jun 2019

Honors & Scholarships

Departmental Travel Scholarship, CS, UW-Madison	2024
Walsh Research Travel Award, McPherson Eye Research Institute, UW-Madison	2023
Summer Computer Sciences Fellowship, UW-Madison	2022
First-year CS Departmental Scholarship, UW-Madison	2021
Winner of Student Volunteer (SV) happi design contest, CHI 2021	2021
Overseas Research Scholarship (First Class), Shanghai Jiao Tong University	2019

Invited Talks

"Empowering low vision people using eye-tracking and AI" — Optica Vision & Color Summer Data Blast	Aug 2024
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Teaching Experience

CS 571: Building User Interfaces, UW-Madison <i>Teaching Assistant</i>	Spring 2022, Fall 2023
CS 770: Human-Computer Interaction, UW-Madison <i>Teaching Assistant</i>	Spring 2024

Service

Student Volunteer: CHI '21 & '24, ASSETS '22

Peer Review: CHI '23 - '26, UIST '23 - '26, IMWUT '23, ISWC '25, C&C '25, ISMAR '24, MobileHCI '23, DIS '23

Program Committee, Associate Chair (AC): UIST '25 Poster Track

Technical Skills

Programming Languages

Python, C/C++, C#, JavaScript, TypeScript, HTML/CSS, R, Java, SQL, $\text{\LaTeX}$

Development Frameworks

Node.js, React, Next.js, Flask, Express.js, PyTorch, CUDA, LangChain, WebRTC, Spark

Development Tools

Unity, Arduino, Linux, Git, Kubernetes, Docker, AWS, Azure, GCP

UX Design

Adobe Illustrator & Photoshop, SketchUp, Figma

User Research

Interview, contextual inquiry, thematic analysis, usability testing, participatory design, statistical analysis & modeling

Last updated on July 20, 2026