

YIFAN LI

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ACADEMIC BACKGROUND

University of Rochester, NY

Ph.D. Computer Science (Sep 2022 - Present)

Yale University, CT

M.S. Computer Science (Jan 2021 - May 2022)

Rensselaer Polytechnic Institute, NY

B.S. Computer Science (Sep 2016 - Dec 2019)

B.S. Mathematics

RESEARCH INTEREST

Assistive Technologies for Communication: AI-mediated systems that support effective, real-time, and inclusive communication with multimodal sensing and recommenders.

Accessibility: Approaches that reduce communication barriers, especially supporting ASL interactions and language development for DHH children.

PUBLICATIONS

Leveraging Usefulness and Autonomy: Designing AI-Mediated ASL Communication Between Hearing Parents and Deaf Children

Yifan Li, Hecong Wang, Ekram Hossain, Madeleine Mann, Jingyan Yu, Kaleb Slater Newman, Ashley Bao, Athena Willis, Chigusa Kurumada, Wyatt C Hall, Zhen Bai; Proceedings of the 24th annual ACM Interaction Design and Children Conference (IDC), 2025

RhymASL: An Interactive Rhyming ASL Story Generator

Yifan Li, Athena Willis, Zhiyuan Yan, Zhen Bai; Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS), 2025

Predicting Human Intent to Interact with a Public Robot: The People Approaching Robots Database (PAR-D)

Sydney Thompson, Alexander Lew, Yifan Li, Elizabeth Stanish, Alex Huang, Rohan Phanse, Marynel Vázquez; Proceedings of the 26th International Conference on Multimodal Interaction (ICMI), 2024

Supporting ASL Communication Between Hearing Parents and Deaf Children

Ekram Hossain, Ashley Bao, Kaleb Slater Newman, Madeleine Mann, Hecong Wang, Yifan Li, Chigusa Kurumada, Wyatt Hall, Zhen Bai; Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS), 2023

RESEARCH EXPERIENCE

University of Rochester Computer Science Dept. *Research Assistant*

Sep 2022 - present

- Developing AI-mediated assistive technology to help hearing parents and DHH children's ASL interactions, and designing a 3D interactive system to support more inclusive conversations in small group discussions.

Yale Computer Science Dept. *Research Assistant*

June 2021 - May, 2022

- Implemented computational methods to track and label pedestrians' behaviors, and train machine learning models to predict their engagement intentions with a public interactive display.
- Designed the state/action abstraction, sub-policy design, and multi-objective reward modeling to support reinforcement learning on a photo-taking robot from explicit human feedback and refine its movement, timing, and interaction strategy.

PROJECTS

Tabletop Interactive Play System (TIPS) *Project Lead* 2022–Present

- Designed and developed a real-time ASL recommendation system integrating multimodal data detection (speech, hand interaction, gaze), ASL generation, LLM-based recommendation strategies, and varied display formats to support ASL interaction between parents and DHH children.
- Led multiple user studies with hearing parents-DHH children pairs, deaf parents, and experts to investigate stakeholder needs in ASL-supportive technologies and evaluate different ASL recommendation conditions.
- Designing an at-home user study to collect real-world hearing parent-DHH child interaction data and developing adaptive models for just-in-time and just-enough ASL recommendations.
- Developed a prototype that leverages ASL phonological features and LLMs to support interactive rhyming ASL storytelling and playful parent-child engagement.

Cat Moment *Project Lead* 2022–Present

- Designing visualizations of group dynamics, such as participation, turn-taking, and emotional cues, to support more inclusive small-group communication.
- Developing an Augmented Reality (AR) prototype on Microsoft HoloLens 2 that delivers visualization to raise awareness of group dynamics and foster more inclusive conversations.

PAR-D *Project Member* June 2021–May, 2022

- Investigated pedestrian behavior around a public interactive display and implemented a multi-target tracking function using the Hungarian algorithm to maintain consistent person identifiers across consecutive video frames.
- Designed computational models linking each individual’s spatial trajectory, velocity, and body-joint kinematics to human-annotated engagement labels; Applied the model on the unannotated data to automatically infer engagement labels.
- Trained and evaluated multiple machine learning models to predict whether a pedestrian intends to engage with the display and to estimate the time-to-engagement prior to the interaction onset.

TEACHING EXPERIENCE

Graduate Teaching Assistant University of Rochester

- CSC 216/416: AR/VR Interaction Design, Spring 2024
- CSC 212/412: Human-Computer Interaction, Spring 2023
- BCS/CSC 229: Computer Models of Perception & Cognition, Fall 2023

WORK EXPERIENCE

Ericsson, Nanjing, China *Intern* May - Aug, 2019

- Visualized KPI network data of overloaded telecommunication cells and recognized the overloaded telecommunication cells
- Shared the clustered graphics with senior engineers to evaluate the clustering performance and label the problems of overloaded cells; presented the results to ~ 20 engineers from other teams in a workshop

Yale Library Preservation Dept. *Software Emulation Configuration Worker* March - Aug, 2021

- Tested the access of old database via emulation and reported the issues in emulator trouble shooting

SKILLS

Languages Fluent in Chinese (Mandarin) and English
Programming Python, C++, Java, JavaScript, PostgreSQL, MATLAB
Large Language Models, Unity C#