Yiwen “Molly” Wang

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Summary

I am a third-year PhD candidate in the College of Information at the University of Maryland, College Park (UMD). My research lies at the intersection of Human-Computer Interaction, Aging and Accessibility, and Personal Informatics. My work focuses on exploring technologies to collect and share personal health information among underrepresented populations, including older adults and people with disabilities. Since beginning my PhD, I have worked on a “*teachable activity tracker*” project aimed to support older adults and people with mild cognitive impairment (MCI) or dementia in the data labeling to train their personalized activity trackers. My work informs strategies that enable, empower, and engage older adults and people with disabilities as data collectors and consumers in AI-driven personal informatics systems.

Education

Ph.D. Information Studies, University of Maryland, College Park, US *2022-present*
Advised by Eun Kyoung Choe

M.S. Human-Computer Interaction, Rochester Institute of Technology, US 2019-2022
Advised by Roshan L. Peiris

B.E. Software Engineering, Jiangxi Agricultural University, China 2014-2018
Minor in English

Ongoing Paper Submission

[7] **Yiwen Wang,** Hossein Khayami, Bongshin Lee, Amanda Lazar, Hernisa Kacorri, and Eun Kyoung Choe. 2025. "Toward Enabling Older Adults to Provide High-Quality Activity Labels: Unpacking Accuracy, Precision, and Granularity in Activity Labeling."

Peer-reviewed Publications

[6] **Yiwen Wang**, Mengying Li, Young-Ho Kim, Bongshin Lee, Margaret Danilovich, Amanda Lazar, David E. Conroy, Hernisa Kacorri, and Eun Kyoung Choe. 2024. "Redefining Activity Tracking Through Older Adults' Reflections on Meaningful Activities." In Proceedings of the CHI *Conference on Human Factors in Computing Systems* (CHI 2024).

[5] **Yiwen Wang,** Ziming Li, Pratheep Kumar Chelladurai, Wendy Dannels, Tae Oh, and Roshan L. Peiris. 2023. "Haptic-Captioning: Using Audio-Haptic Interfaces to Enhance Speaker Indication in Real-Time Captions for Deaf and Hard-of-Hearing Viewers." In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI 2023).

[4] Mingming Fan, **Yiwen Wang***, Yuni Xie*, Franklin Mingzhe Li, and Chunyang Chen. 2023. "Understanding how older adults comprehend COVID-19 interactive visualizations via think-aloud protocol." International Journal of Human-Computer Interaction (IJHCI 2023) **equal contribution*

[3] Rezylle Milallos, Vinita Tibdewal, **Yiwen Wang**, Andre Udegbe, and Tae Oh. 2022. "An exploratory study on the low adoption rate of smart canes." In International Conference on Human-Computer Interaction (HCII 2022).

[2] Matt Ryan, **Yiwen Wang**, Qinqin Xiao, Rui Liu, and Yunbo Zhang. 2022. "Immersive virtual reality training with error management for CNC milling set-up." In International Manufacturing Science and Engineering Conference. American Society of Mechanical Engineers (MSEC 2022).

[1] Rezylle Milallos, Vinita Tibdewal, **Yiwen Wang**, Andre Ogueh Udegbe, and Tae Oh. 2021. "``Would the smart cane benefit me?": Perceptions of the Visually Impaired towards Smart Canes." In Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2021).

Research Experience

Graduate Research Assistant
Human-Computer Interaction Lab (HCIL), UMD *Aug 2022–present*

Advised by Dr. Eun Kyoung Choe (working with Dr. Amanda Lazar and Dr. Hernisa Kacorri)

Teachable Activity Trackers for Older Adults (Funded by NSF #1955568):

- ***Enable Older Adults to Collect High-quality Activity Labels***: Conducted a scenario-based co-design study with older adults to explore user-initiated labeling and machine-initiated prompting strategies. Unpacked the definition of accuracy, precision, and granularity in activity labeling through reflexive data analysis.
- ***Explore Teachable Activity Tracker with People with MCI or Dementia*:** Co-designed teachable interfaces that collect high-quality activity labels with people with MCI, dementia, and their caregivers. Examined the feasibility and preferred strategies via codebook thematic analysis.
- ***Design a Teachable Interface for Collecting Low-exertion Activity Labels*:** Collaborating with the ML team to design and develop a smartwatch interface that prompts users to collect low-exertion activity labels while promoting breaks from sedentary activities.
- ***Understand Meaningful Activities of Older Adults in Activity Tracking*:** Conducted reflexive data analysis to understand the underlying values of meaningful activities of older adults deemed worthy of tracking. Informed design of value-driven and personalized activity trackers.

Graduate Research Assistant
Center for Accessibility and Inclusion Research (CAIR) Lab, RIT *May 2021–June 2022*

Advised by Dr. Roshan Peiris

- ***Haptic Captioning System for People who are Deaf and Hard of Hearing***: Designed an audio-haptic captioning system to assist speaker identification in multiple-speaker situations. Conducted three-phase system evaluation and quantitative and qualitative data analysis.

Worked with Dr. Kristen Shinohara

- ***Accessible Design with People who are Blind and Vision Impaired***: Conducted design workshops with 12 dyads of BVI designers and sighted participants. Performed user-centered design training for participants. Conducted qualitative data analysis using thematic coding.

Research Assistant
Accessible & Pervasive User Experience (APEX) Lab, RIT/HKUST *May 2020–Feb 2022*

Worked with Dr. Mingming Fan

- ***Older Adults' Visualization Comprehension:*** Conducted usability testing with 18 older adults to evaluate interactive data visualizations using think-aloud protocols. Used qualitative analysis and derived design guidelines for creating aging-friendly interactive data visualizations.

- ***Brainstorming on Virtual Reality and Videoconferencing:*** Conducted within-subject study with 12 groups of three to explore the pros and cons of brainstorming in VR and VC settings. Used mixed methods to examine the objective and perceived productivity and user experience.

Research Assistant
Computational Design Interfacing Manufacturing Education Lab, RIT *June 2021–Nov 2021*

Worked with Dr. Will Yunbo Zhang

- ***VR-based CNC Machining Training:*** Conducted comparative user study and evaluated VR CNC machining set-up training with error management to help novice users with hands-on practice.

- ***AR-based Robot Learning System:*** Designed prototype for robotic arm training, including waypoints defining, path planning, and collision detection. Analyzed qualitative data through an affinity diagram.

Industry Experience

NIO Inc. Shanghai, China
Assistant Product Manager, PLM Team *Feb 2019–June 2019*

- Designed and prototyped user interfaces (UI) using Axure to enhance user experience (UX) for systems such as DVP&R, Design Benchmarking, CAD BOM, and Manufacturing Requirement Management.
- Facilitated product planning and quality assurance by managing workflows in Atlassian Jira, collaborating closely with the Scrum development team to ensure timely and high-quality product releases.
- Conducted stakeholder interviews and collaborated with cross-functional teams, including vehicle engineers, to gather requirements and inform design decisions, ensuring alignment with business goals.

Assistant Engineer, PLM Team *July 2018–Feb 2019*

- Assisted the product manager in prototyping, writing technical specifications for developers, and maintaining documentation, including product requirements and training materials.
- Designed and developed components of PLM systems, such as PLM administration, business process management (BPM), and authority management, using Java and HTML/CSS.

Project Assistant, Intern *Mar 2018–July 2019*

- Worked as Scrum Master for an Agile team, facilitating communication on product requirements and tracking development progress to ensure timely releases.

Honors & Awards

Northrup Gift to Digital Accessibility ($1500)	Mar 2023
Gary Madson Travel Rewards	Feb 2023
SIGACCESS Diversity & Inclusion Scholarship for ASSETS 2021	*Oct 2021*
RIT Merit Scholarship Program (80% tuition per semester)	*Aug 2021*
Third-class Jiangxi Agricultural University Scholarship (Top 8%)	*Mar 2017*
Fourth place prize of Jiangxi Agricultural University Technology Competition	*Dec 2016*

Skills

Research: Usability Testing, Contextual Inquiry, Heuristic Evaluation, Interview, Survey, Focus Group, Thematic Analysis, Statistical Analysis, User Persona, User-Centered Design
Design: Sketching, Storyboarding, Prototyping, Visualization design, Figma, Axure, Balsamiq, Adobe XD, Tableau
Coding: Java, JavaScript, HTML/CSS, C, C#, R, SQL, Unity3D, Arduino, Microbits
Languages: Mandarin (Native), English (Professional), Japanese (Intermediate), Portuguese (Beginner)

Service

Reviewer: ACM CHI 2024-2025, CSCW 2024
Volunteer: Hyattsville Aging in Place (2022-present)