

Research Interests

My research aims to develop tools for people with disabilities to create and customize AI-based applications to improve the accessibility of tasks in their day-to-day lives. In my work, I draw from techniques in end-user programming, mobile sensing, and machine learning, and I adopt various co-design approaches to design and build novel systems.

Areas: Human-Computer Interaction, Accessibility, DIY Technology, AR/VR, Toolkits, Mobile Sensing, Collaboration

Education

- 09/2019 – Present **University of Michigan**
Ann Arbor, MI PhD Candidate in Computer Science & Engineering, advised by Anhong Guo
- 09/2015 – 05/2019 **University of Michigan**
Ann Arbor, MI Bachelor of Science in Computer Science, Minor in Mathematics

Professional Experience

- Summer 2023 **AI/ML Accessibility Research, Apple** Research Intern
Seattle, WA Mentored by Cole Gleason
- Summer 2019 **AI/ML Accessibility Research, Apple** Research Intern
Pittsburgh, PA Developed interaction techniques to make mobile augmented reality accessible for VoiceOver users [C.03]
Mentored by Jeffrey Bigham
- Summer 2018 **EPIC Research Group, Microsoft Research** Research Intern
Redmond, WA Evaluated the potential of current head-mounted augmented reality devices in providing guidance for home improvement projects [P.01]
Mentored by Eyal Ofek and Adam Fourney


Awards

- 2023 **Finalist, CSE Honors Competition, University of Michigan**
- 2023 **CSE Service Award for Excellence in Climate and DEI, University of Michigan**
- 2021–2024 **NSF Graduate Research Fellowship**
- 2019–2020 **CSE First-Year Department Fellowship, University of Michigan**
- Winter 2017 **Excellence in Undergraduate Writing Award: Feinberg Family Writing Prize for Research Based Argument**

Publications

Conference Papers

- C.13 **J. Herskovitz**, E. Seehorn, A. Guo. A11yExtensions: Accessibility Extensions to Augment Mobile AI Assistive Technology In-Situ (*In Preparation*).
- C.12 J. Z. Huang, **J. Herskovitz**, L. Y. Wu, C. Morrison, D. Jain. Weaving Sound Information to Support Real-time Sensemaking of Auditory Environments: Co-designing with a DHH User (*Under Review*).
- C.11 **J. Herskovitz**, A. Xu, R. Alharbi, A. Guo. ProgramAlly: Creating Custom Visual Access Programs via Multi-Modal End-User Programming. In *Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology (UIST 2024)*.
- C.10 R. Alharbi, P. Lor, **J. Herskovitz**, S. Schoenebeck, R. Brewer. Misfitting With AI: How Blind People Verify and Contest AI Errors. In *Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2024)*.
- C.09 **J. Herskovitz**, A. Xu, R. Alharbi, A. Guo. Hacking, Switching, Combining: Understanding and Supporting DIY Assistive Technology Design by Blind People. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2023)*.
- C.08 **J. Herskovitz**, Y. Cheng, A. Guo, A. Sample, M. Nebeling. XSpace: An Augmented Reality Toolkit for Enabling Spatially-Aware Distributed Collaboration. In *Proceedings of the ACM on Human-Computer Interaction (ISS 2022)*.
- C.07 A. Alkayyali, Y. Irvantchi, **J. Herskovitz**, A. Sample. UbiChromics: Enabling Ubiquitously Deployable Interactive Displays with Photochromic Paint. In *Proceedings of the ACM on Human-Computer Interaction (ISS 2022)*.
- C.06 C.Y.P. Lee, Z. Zhang, **J. Herskovitz**, J.Y. Seo, A. Guo. CollabAlly: Accessible Collaboration Awareness in Document Editing. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022)*. [Honorable Mention]
- C.07 J. Lee, **J. Herskovitz**, Y.H. Peng, A. Guo. Multi-Layered Touch Exploration to Encourage Skepticism Towards Imperfect AI-Generated Image Captions. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022)*.
- C.04 M. Nebeling, S. Rajaram, L. Wu, Y. Cheng, **J. Herskovitz**. XRStudio: A Virtual Production Technology Probe for Immersive Instructional Experiences. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2021)*.
- C.03 **J. Herskovitz**, J. Wu, S. White, A. Pavel, G. Reyes, A. Guo, J. Bigham. Making Mobile Augmented Reality Applications Accessible. In *The 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2020)*.
- C.02 Y. Chen, **J. Herskovitz**, W.S. Lasecki, S. Oney. A Hybrid Crowd-Machine Workflow for Program Synthesis. In *Proceedings of the IEEE Symposium on Visual Languages and Human-Centered Computing (VL/HCC 2020)*.

- C.01 Y. Chen, **J. Herskovitz**, G. Matute, A. Wang, S.W. Lee, W.S. Lasecki, S. Oney.  EdCode: Towards Personalized Support at Scale for Remote Assistance in CS Education. In *Proceedings of the IEEE Symposium on Visual Languages and Human-Centered Computing (VL/HCC 2020)*. [Best Short Paper Award]

Posters and Demos

- P.03 C.Y.P. Lee, Z. Zhang, **J. Herskovitz**, J.Y. Seo, A. Guo. CollabAlly: Accessible Collaboration Awareness in Document Editing. (ASSETS 2021 Demos).
- P.02 J.Lee, Y.H. Peng, **J. Herskovitz**, A. Guo. Image Explorer: Multi-Layered Touch Exploration to Make Images Accessible. (ASSETS 2021 Demos).
- P.01 **J. Herskovitz**, E. Ofek, W.S. Lasecki, A. Fourney. Opportunities for In-Home Augmented Reality Guidance. (CHI 2019 Late Breaking Work).

Workshops and Consortia

- W.02 **J. Herskovitz**. DIY Assistive Software: End-User Programming for Personalized Assistive Technology. ASSETS 2023 Doctoral Consortium.
- W.01 **J. Herskovitz**, J. Chinnam, I. Wong, M. Liu, J. Mo, S.W. Lee, W.S. Lasecki. Crowdsourcing for Effortless Creation of Collaborative AR Spaces. In *CHI Workshop on Novel Interaction Techniques for Collaboration in VR*. 2018.

Patents

- U.01 J.P. Bigham, **J. Herskovitz**, S. White, J. Wu. Accessible Mixed Reality Applications. United States Patent Application 18/239,018, filed August 28, 2023.

Invited Talks

- 06/2024 **AI-Powered Visual Assistive Technologies from the UMich Human-AI Lab**
Ann Arbor District Library VISIONS 2024: Technology and Services for the Blind, Visually Impaired, and Physically Disabled
Anhong Guo and Jaylin Herskovitz
- 03/2024 **Hacking, Switching, Combining: Understanding and Supporting DIY Assistive Technology Design by Blind People**
University of Michigan Disability Visibility in Engineering Symposium
- 01/2022 **Making Mobile Augmented Reality Accessible**
Adobe Research Seminar
- 12/2021 **Making Mobile Augmented Reality Accessible**
Cornell's XR Access Initiative Seminar

Service

Program Committee

2024 ACM CHI 2024 Late Breaking Work AC

Organizing Committee

2021–2022 **Web Co-Chair**, ACM ASSETS 2022 Organizing Committee

University of Michigan

2023–2024 **MISC Student Coordinator**, Michigan Interactive and Social Computing

2022–2023 **DEI Chair**, UMich Computer Science and Engineering Graduate Student Organization (CSEG)

2022–2023 **Volunteer Mentor**, University of Michigan CSE Wellness Buddy Program

Fall 2022 **Volunteer Mentor**, University of Michigan CSE PhD Application Feedback Program for Underrepresented Students

Fall 2022, 2024 **Volunteer NSF GRFP Coach**, University of Michigan

Spring 2022, 2023 **Volunteer Speaker**, University of Michigan Visit Day DEI Student Panel

2021–2022 **Student DEI Representative**, University of Michigan CSE DEI Committee

2020–2022 **Secretary**, UMich Computer Science and Engineering Graduate Student Organization (CSEG)

Reviewer

2019– **ACM CHI**: 2021, 2022, 2023**, 2024*, 2025**

ACM UIST: 2021*, 2024

ACM ISS: 2024

ACM DIS: 2022

ACM CHI Late Breaking Work: 2019, 2021, 2022, 2024*

* Denotes special recognition for outstanding reviews

Outreach

Winter 2023 **Volunteer Speaker, Washtenaw Community College Stem Scholars Program**: Presented to underrepresented students on research opportunities and career paths in computer science.

Summer 2020 & Fall 2020 **Volunteer Mentor and Team Lead**, Bold Idea Website Development course for 4th–12th grade students, won Outstanding Mentor Award.

November 2017 **Wolverine Pathways Visit Day Volunteer**: Led HCI research activity for high school students.

Teaching

- Fall 2024* **Graduate Student Instructor: Human Computer Interaction (EECS 593)**
- Developed new rubrics and grading standards for a class of 50 graduate students learning human-centered research practices.
 - Developed lecture materials introducing students to accessibility in both HCI research and design practice.
- Winter 2021* **Graduate Student Instructor: User Interface Development (EECS 493)**
- Administrative work for a class of 300+ undergraduates learning web design and development, and human-centered design practices.
 - Developed and graded course materials such as projects, quizzes, and exams.
 - Held office hours and moderated an online course forum.
- Summer 2016* **M-STEM Academies Academic Facilitator**
- Led discussion sections for a calculus course for incoming freshmen.

Mentoring

- Summer 2024* **Ellie Seehorn** (Grinnell College, visiting REU student)
- 2022–2024* **Andi Xu** (University of Michigan, project mentor)
First Position: Software engineering at Meta and CS Masters at Stanford
- 2021–2022* **Yi Fei Cheng** (University of Michigan, project mentor)
First Position: PhD at CMU HCII