Aaleyah Lewis

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EDUCATION

2021- present **Doctor of Philosophy**, *Paul G. Allen School of Computer Science and Engineering*
University of Washington, Seattle, WA | *Co-advised by James Fogarty and Jennifer Mankoff*
Recognitions: GEM Fellow, ARCS Foundation Scholar

2021- 2024 **Master of Science**, *Paul G. Allen School of Computer Science and Engineering*
University of Washington, Seattle, WA | *Advised by James Fogarty*

2017- 2021 **Bachelor of Science**, Computer Science
University of Maryland, Baltimore County, Baltimore, MD | Graduated with Honors | Recognition: Merit Scholar, McNair Scholar, LSAMP Scholar, CWIT Affiliate

SELECTED RESEARCH PROJECTS

Ongoing **Operationalizing Context-Sensitive Accessibility for LLM Evaluation** | Lead Researcher | UW |
Skills/Tools: Python, JavaScript

- Developing a web-based annotation tool that enables user to annotate their own LLM conversational data to inform the development of context-sensitive LLM evaluation metrics.
- Operationalizing an empirically grounded typology of identity negotiation into measurable criteria for evaluating context-sensitive accessibility in LLM-mediated communication.
- Designing and conducting human and LLM-as-judge evaluations to assess model performance in context-sensitive LLM-mediated communication support.

Under Review **Identity Negotiation as Part of AI-Mediated Access Work for Multiply Marginalized Disabled People** | Lead Researcher | UW

- Conducted semi-structured interviews and diary studies with multiply marginalized people with disabilities to characterize identity negotiation within AI-mediated access.
- Developed a typology characterizing why, where, and how identity negotiation occurs in AI-mediated access use.
- Identified AI's roles in supporting, undermining, facilitating, and necessitating identity negotiation practices in AI-mediated access use.

ASSETS 26 **(Honorable Mention Award) Me, Myself, and My Voice: Exploring Cultural and Linguistic Identity in AAC AI-Generated Voices** | Researcher | UW

- Developed tool that enabled AAC users to elicit and generate AI-synthetic voices aligned with their cultural and linguistic preferences.
- Designed human-centered evaluation measures to assess synthetic voice quality, cultural and linguistic representation, and alignment among AAC users, examining limitations of conventional speech quality metrics.

CHI 25 **Exploring AI-Based Support in Speech-Language Pathology for Culturally and Linguistically Diverse Children** | Lead Researcher | UW

- Conducted quantitative and qualitative evaluations of ChatGPT-4o with 13 speech-language therapists, examining utility, limitations, and cultural, linguistic, and disability-related biases in AI-generated clinical materials.
- Identified representational harms and contextual limitations in AI-generated text and images, highlighting risks to equitable service delivery.

SELECTED PUBLICATIONS

ASSETS 2026 **(Honorable Mention Award)** Tobias Weinberg, **Aaleyah Lewis**, Ricardo E. Gonzalez Penuela, Weicong Hong, Jennifer Mankoff, Thijs Roumen. **Me, Myself, and My Voice: Exploring Cultural and Linguistic Identity in AAC AI-Generated Voices**. ASSETS 2026.

RESPECT 2026 **Aaleyah Lewis***, Stacy Hsueh*, Jennifer Mankoff. **Integrating Intersectional Framework Into an Accessibility Capstone**. ACM SIGCSE Conference on Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT 2026).

CHI 2026 **Aaleyah Lewis***, Jazette Jonhson*, Jennifer Mankoff, Olivia Banner. **"I Don't Trust it, but I Use it": Navigating Trust, Privacy, and Identity in Disabled People's Use in Generative AI**. CHI 2026. Conference on Human Factors in Computing Systems.

TACCESS 2026 **Aaleyah Lewis***, Aashaka Desai*, Sanika Moharana*, Anne Spencer Ross, Jennifer Mankoff, Christina N. Harrington. **Race, Disability, and Technology: A Call to Action for Accessibility Researchers**. ACM Transactions on Accessible Computing Journal (TACCESS) 2025.

IDC 2026 Aayushi Dangol, **Aaleyah Lewis,** Hyewon Suh, Robert Wolfe, James Fogarty, Julie A. Kientz. **Parent Perspectives on Future Designs of AAC for Children with Speech and Language Difficulties.** ACM Interaction Design and Children Conference. IDC 2026.

ASSESTS 2025 Kelly Avery Mack, Jesse J. Martinez, **Aaleyah Lewis**, Jennifer Mankoff, James Fogarty, Leah Findlater, Heather D. Evans, Cynthia L. Bennett, Emma McDonnell. **Modeling Accessibility: Characterizing What We Mean by "Accessible"**. ASSESTS 2025.

CHI 2025 **Aaleyah Lewis,** Aayushi Dangol, Hyewon Suh, Abbie Olszewski, James Fogarty, Julie A. Kientz. **Exploring AI-Based Support in Speech-Language Pathology for Culturally and Linguistically Diverse Children**. CHI 2025 Conference on Human Factors in Computing Systems.

CHI 2025 **Aaleyah Lewis,** Jesse J. Martinez, Maitraye Das, James Fogarty. **Inaccessible and Deceptive: Examining Experiences of Deceptive Design with People Who Use Visual Accessibility Technology**. CHI 2025 Conference on Human Factors in Computing Systems.

CHI 2025 Kate Glazko*****, JunHyeok Cha*****, **Aaleyah Lewis**, Ben Kosa, Brianna Wimer, Andrew Zheng, Roy Zheng, Jennifer Mankoff. **Autoethnographic Insights from Neurodivergent GAI "Power Users".** CHI 2025 Conference on Human Factors in Computing Systems.

CHI 2025 Aayushi Dangol, **Aaleyah Lewis**, Hyewon Suh, Xuesi Hong, Hedda Meadan, James Fogarty, Julie A. Kientz. **"I want to think like an SLP": A Design Exploration of AI-Supported Home Practice in Speech Therapy**. CHI 2025 Conference on Human Factors in Computing Systems.

AAAI 2025 Jay L. Cunningham, Adinawa Adjagbodjou, Jeffrey Basoah, Jainaba Jawara, Kowe Kadoma, **Aaleyah Lewis**. **Toward Responsible ASR for African American English Speakers: A Scoping Review of Bias and Equity in Speech Technology.** Conference on AI, Ethics, and Society. (AAAI 2025)

ASSETS 2023 Christina N. Harrington, Aashaka Desai, **Aaleyah Lewis***,* Sanika Moharana, Anne Spencer Ross, Jennifer Mankoff. **Working at the Intersection of Race, Disability, and Accessibility**. ASSETS 2023

CHI 2023 **Aaleyah Lewis**, Orevaoghene Ahia, Jay L. Cunningham, James Fogarty. **Towards Intersectional CUI Design Approaches for African American English Speakers with Dysfluencies***.* CUI @CHI: Inclusive Design of CUIs Across Modalities and Mobilities Workshop. CHI 2023.

CHI 2022 Aashaka Desai, Venkatesh Potluri**, Aaleyah Lewis**, Daniel Campos, Jayne Everson, Jennifer Mankoff, Richard E. Ladner. **Using Fiber Arts and Sonification to Improve Data Accessibility of Maker Spaces***.* Reimagining Systems for Learning Hands-On Creative and Maker Skills Workshop. CHI 2022.

GRANTS

Spring 2025 **Code-Switching and Masking in Generative AI Use for Multilingual and Multicultural People with Disabilities** | UW CREATE - Race, Disability and Technology: **Awarded $15,000**

Spring 2023 **Examining Black Experiences in Accessibility Technologies** | UW CREATE - Race, Disability and Technology: **Awarded $15,000**

INVITED TALKS AND PANELS

2025 Invited Panelist: "**Race, Disability, and Information Technology"**

2024 Invited Panelist: **"Privacy, Security, and Accessibility"**

2023 Moderator: **"Disability Justice: Centering Intersectionality and Liberation with Patty Berne"** – UW Public Lecture Series

2023 Speaker: **"Working at the Intersection of Race, Disability, and Accessibility"** – Paul G. Allen School Accessibility Colloquium

2019 Panelist: **"Navigating Your Undergraduate Journey"** – LSAMP Summer Bridging Conference

2020 Panelist: **"Inspiring and Supporting the Next Generation of Black Women in Computing + Tech"** – BlackcomputeHER Conference

SELECTED AWARDS & HONORS

2026 Honorable Mention Award ASSETS'26 (best 5% of paper) - Me, Myself, and My Voice: Exploring Cultural and Linguistic Identity in AAC AI-Generated Voices

2021 College of Engineering Dean's Fellowship

2021 GEM Fellowship

2021 ARCS Foundation Scholar

2021 Lockheed Martin Scholarship

2020 CISCO Security Business Group Scholarship

2020 Stanford University Scholar Spotlight

2020 ACM Richard Tapia Scholarship

2019 Georgia Tech Focus Scholar

2019 Lockheed Martin Scholarship

2019 UMBC Undergraduate Research Award

2019 Grace Hopper Celebration Scholarship

LEADERSHIP AND SERVICE

2024 - present Publication Reviewer | CHI 2025, 2026, 2027

2021 - present Teacher | A Vision for Electronic Literacy & Access (AVELA) | UW

2018 - present Mentor | Ronald E. McNair Scholar Program | UMBC

2017 - present Mentor | Louis Stokes Alliances for Minority Participation (LASMP) | UMBC

2018 - 2020 Ambassador of Special Events | Ronald E. McNair Scholar Program | UMBC

2018, 2019 Conference Ambassador | Ronald E. McNair Scholar Program | UMBC

2017 - 2021 Center for Women in Technology (CWIT) | UMBC

2017 Mentor | National Society of Black Engineers (NSBE) | UMBC

TEACHING

Winter 2025 Teaching Assistant - **CSE 482: Accessibility Capstone Software Design** | UW

Spring 2024 Teaching Assistant - **CSE 340: Interaction Programming** | UW

Fall 2023 Teaching Assistant - **CSE 440: Human-Computer Interaction** | UW

Spring 2023 Teaching Assistant - **CSE 440: Human-Computer Interaction** | UW

SELECTED EXPERIENCES

June 2021 – August 2021 **Oak Ridge National Laboratory |** GEM Fellow
Skills/Tools: JavaScript, React, Elasticsearch

- Developed web application to assist cyber analysts in detecting anomalous behaviors on machines.
- Implemented interactive data visualizations (i.e., treemap, collapsible tree) with filtering systems.

June 2020 – August 2020 **Stanford University |** Summer Undergraduate Research Fellow
Investigating the Efficacy of Virtual Reality as an Educational Tool for Ocean Acidification
Skills/Tools: Python, Pandas, NumPy

- Analyzed participant physiological tracking data during VR experience.
- Developed data visualizations for tracking data (i.e. head translation, hand translation).

Sept. 2019 – Dec. 2019 **University of Maryland, Baltimore County |** Research Assistant
Sleep Analytics by Analyzing Leg Movements During Sleep
Skills/Tools: Python, Pandas, NumPy, Jupyter Notebook

- Collected and analyzed physiological data (i.e. Blood Volume Pulse, Heart Rate).
- Generated data visualizations for distribution of physiological data.
- Developed algorithms for calculating measurements of physiological data (e.g., RMS).

SKILLS

Interests Accessibility, Human-Computer Interaction, Responsible AI/ML, Inclusive Design

Research Qualitative, Quantitative, Mixed-Methods, Interview Design, Survey Design, Diary Study Design, Focus Groups, Participatory Design

Programming Python, JavaScript, React, HTML/CSS, C++, R

Tools VS Code, Jupyter Notebook, Qualtrics, Figma, Autodesk Inventor, Microsoft Office