Aaleyah Lewis

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EDUCATION

Doctor of Philosophy, Computer Science and Engineering   Expected Graduation Date: June 2026
University of Washington / **Recognition:** GEM Fellow, ARCS Foundation Scholar, LEAP Fellow

Master of Science, Computer Science and Engineering   March 2024
University of Washington

Bachelor of Science, Computer Science   Graduated: May 2021
University of Maryland, Baltimore County / Graduated with Honors / **Recognition:** Merit Scholar, McNair
Scholar, LSAMP Scholar, CWIT Affiliate

SKILLS & QUALIFICATIONS

Interests: Accessibility, HCI, Responsible AI/ML, Inclusive Design

Research: Human-Centered AI, Qualitative, Quantitative, Mixed-Methods, Interviewing, Survey Design, Focus
Groups, Participatory Design, Data Visualization

Programming: Python, C++, C, JavaScript, React, HTML/ CSS, SQL, R, RobotC, PyTorch

Software: Jupyter Notebook, Autodesk Inventor, Microsoft Office (Word, PowerPoint, Excel), Figma

SELECTED RESEARCH PROJECTS

**Digital Code-Switching and Masking in Generative AI Use for Multilingual and Multicultural People with
Disabilities |** Lead Researcher | UW   Fall 2024
- Conducting **diary studies** and **semi-structured interviews** with multilingual and multicultural people.
- Examining how digital code-switching and masking manifest in **generative AI** use.
- Examining the advantages and challenges of **generative AI** in supporting, undermining, and necessitating
  such practices for people with disabilities.

Bias and Risks in Multicultural Generative AI Use | Researcher | UW   Fall 2024
- Conducting **focus groups and longitudinal surveys** with multicultural people with disabilities**.**
- Examining **generative AI** for accessibility, embedded biases, ableism, and associated risks and
  challenges.

**Exploring AI-Based Support in Speech-Language Pathology for Culturally and Linguistically Diverse
Children Disabilities |** Lead Researcher | UW | *Under Submission*   Winter 2023
- Applied **human-centered AI** approaches to explore challenges and opportunities for AI-based tools to
  support SLPs deliver therapy for culturally diverse children with speech and language disabilities.
- Conducted **semi-structured interviews** with SLPs to identify challenges and opportunities for AI.
- Conducted **quantitative** and **qualitative surveys** with SLPs to evaluate generative AI's performance in
  creating culturally and linguistically adapted therapy materials.
- Analyzed data using combined **inductive and deductive thematic analysis**.

Autoethnographic Insights from Neurodivergent Generative AI "Power Users"
Researcher | UW | *Under Submission*   Spring 2024
- Examined usage of **generative AI** as an accessibility tool among neurodivergent 'power users.'

- Explored the experiences of **generative AI** as a tool to navigate normative expectation (e.g., code-switching, emotional regulation, information access).

Working at the Intersection of Race, Disability, and Accessibility | Researcher | UW   Spring 2023
- Developed a **theoretical framework** for integrating racial equity perspectives into accessibility research.
- Analyzed three case studies that exemplify how to engage at this intersection.
- Generated guiding principles to help researchers establish and support this research area.

Deceptive and Inaccessible: Examining Experiences of Deceptive Design with People Who Use Visual Accessibility Technology | Lead Researcher | UW   Spring 2023
- Conducted **semi-structured interviews and diary studies** to examine the experiences and impacts deceptive design patterns have on people with disabilities when using online services.
- Analyzed data using a combination of **deductive and inductive thematic analysis**.
- Identified six categories of deceptive design patterns that people with disabilities encounter and compile concrete examples of the direct and indirect harms.

SELECTED PUBLICATIONS & WORKSHOPS

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

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**. Accepted at CHI 2025 Conference on Human Factors in Computing Systems.

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

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**. Accepted at CHI 2025 Conference on Human Factors in Computing Systems.

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

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. CHI 2023.

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. CHI 2022.

* Both authors contributed equally to this work and are considered first author

GRANTS

University of Washington CREATE - Race, Disability and Technology: **Awarded $15,000**   Spring 2023

SCHOLARSHIPS & AWARDS

College of Engineering Dean's Fellowship	2021
GEM Fellowship	2021

ARCS Foundation Fellowship	2021
Lockheed Martin Scholarship	2021
Cisco Security Business Group Scholarship	2020
Stanford University Scholar Spotlight	2020
ACM Richard Tapia Scholarship	2020
Georgia Tech Focus Scholar	2019
Lockheed Martin Scholarship	2019
UMBC Undergraduate Research Award Recipient	2019
Grace Hopper Celebration Scholarship	2019

INVITED TALKS AND PANELS

Invited Panelist: "**Race, Disability, and Information Technology**"	2025
Invited Panelist: **"Privacy, Security, and Accessibility"**	2024
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	2023
Panelist: **"Inspiring and Supporting the Next Generation of Black Women in Computing + Tech"** - BlackcomputeHER Conference	2019
Panelist: **"Navigating Your Undergraduate Journey"** - LSAMP Summer Bridging Conference	2020

SELECTED EXPERIENCES

Oak Ridge National Laboratory | GEM Fellow   June 2021 – August 2021
Skills/Tools: JavaScript, React, Elasticsearch
- Developed web application using JavaScript/React to assist cyber analysts in detecting anomalous behaviors on machines.
- Implemented interactive data visualizations (i.e., treemap, collapsible tree) with filtering systems using JavaScript.

Stanford University | Summer Undergraduate Research Fellow   June 2020 – August 2020
Virtual Reality in Environmental Education: Investigating the Efficacy of VR as an Educational Tool for Ocean Acidification
Skills/Tools: Python, Pandas, NumPy
- Created python program to calculate and collectively summarize tracking data (i.e. head translation, hand translation) of participants during VR experience.
- Generated python program to organize and generate visualizations of summarized tracking data (i.e. head translation, hand translation).

University of Maryland, Baltimore County | Research Assistant   Sept 2019 – Dec 2019
Sleep Analytics by Analyzing Leg Movements During Sleep
Skills/Tools: Python, Pandas, NumPy, Jupyter Notebook
- Used Python to collect and analyze physiological data (i.e. Blood Volume Pulse, Heart Rate, Accelerometer).
- Used Python to generate visualizations for distribution of physiological data.
- Developed algorithms for calculating various measurements of physiological data (e.g., RMS).

Cornell University | LSAMP Research Scholar   June 2019 – August 2019
Conflict Mediation at Scale: Leveraging Big Data to Mediate Online Conflicts
Skills/Tools: Python, Pandas, NumPy, Natural Language Toolkit, Perspective API, JavaScript
- ● Developed a chrome extension to mediate conflicts on Reddit using JavaScript and Python.
- ● Detected nuances in language indicative of conflict on Reddit using Natural Language Toolkit.
- ● Generated and analyzed toxicity scores for comments on Reddit using Perspective API to identify monotonic trends of toxicity within conversations.

LEADERSHIP AND SERVICE

Publication Reviewer | CHI 2025
Teacher | A Vision for Electronic Literacy & Access (AVELA) | UW   2021 - present
Mentor | Ronald E. McNair Scholars Program | UMBC   2018 – present
Mentor | Louis Stokes Alliances for Minority Participation (LSAMP) Program | UMBC   2017 - present
Ambassador of Special Events | Ronald E. McNair Scholars Program | UMBC   2018 – 2020
Conference Ambassador | Ronald E. McNair Scholars Program | UMBC   2018, 2019
Mentor | National Society of Black Engineers (NSBE) | UMBC   2017
Mentor | Center for Women in Technology (CWIT) Scholars Program | UMBC   2017 - 2021

TEACHINGS

Teaching Assistant - **CSE 482: Accessibility Capstone Software Design |** UW   Winter 2025
Teaching Assistant - **CSE 340: Interaction Programming** | UW   Spring 2024
Teaching Assistant - **CSE 440: Human-Computer Interaction** | UW   Fall 2023, Spring 2023

CLASS PROJECTS

CSE 513: Disability Inclusion & Accessibility for Technologist   Spring 2024
Intersectional Storyteller

Skills/Tools: Python, React.js, Flask, Prompt Engineering

Developed an accessible web interface for guardians and educators to generate personalized stories that reflect diverse disabled and cultural backgrounds. Utilized **prompt engineering** with **ChatGPT 4o**, this interface enhances intersectional representations and reduces harmful biases in AI generated stories. Conducted validation tests that demonstrated a reduction in cultural and disability bias compared to **ChatGPT 4o** generated outputs.