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 **|** Selected Coursework: HCI, Artificial Intelligence, Machine Learning, Data Visualization

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, Ethnographic Observation, 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

Advancing AI Technologies for Early Screening and Ability-based Intervention for Children with Speech and Language Disabilities | Researcher | UW — Winter 2023 - Ongoing

- Using **human-centered AI** approaches to inform the design of AI technologies to support speech language pathologists (SLP) in interventions for culturally diverse children with speech and language disabilities.
- Conducting **surveys, semi-structured interviews, and co-design** sessions with SLPs.
- Conducting bias assessments within existing **large language models** and culturally adapted SLP therapy material.
- Analyzing data using **inductive thematic analysis**.

Examining Experiences of Speech Recognition Systems with African American English Speakers with Speech Disabilities | Lead Researcher | UW — Fall 2023 - Ongoing

- Conducting **surveys and semi-structured interviews** to examine the experiences, perceptions and amplified challenges of African American English Speakers who have speech disabilities when using speech recognition systems.

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 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 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.

SELECTED PUBLICATIONS & WORKSHOPS

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**, 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.

GRANTS

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

TEACHINGS

Teaching Assistant - **CSE 340: Interaction Programming** | UW — Spring 2024
Teaching Assistant - **CSE 440: Human-Computer Interaction** | UW — Fall 2023, Spring 2023

INVITED TALKS AND PANELS

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

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

LEADERSHIP AND SERVICE

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