Mia Hines

(314) 475-8046 | mia.hines01@gmail.com
https://miahines.github.io/

Education

PhD Candidate in Computer Science Expected Completion: May 2028
Washington University in St. Louis, St. Louis, MO.

- AI-ACCESS NRT Fellowship
- GEM Associate Fellowship
- Clare Boothe Luce Graduate Fellowship

B.A. in Computer Science with a minor in Statistics 2024
Grinnell College, Grinnell, IA.

- Henry M. and Theresa P. Walker Endowed Prize for Excellence in Computer Science (2024)
- Marie Nesbitt Promise Prize (2022)

Research Experience

Ph.D. Researcher August 2024 - Present
VIBE Lab with Dr. Alvitta Ottley HCI, Data Visualization, and Health
Washington University in St. Louis, St. Louis, MO.

- Developed a web scraper to collect nearly 100,000 images from 32 public health organizations to comprehensively evaluate real-world communication design decisions.
- Curated a methodological pipeline using human-AI teaming to filter noise and provide annotations, which resulted in a final visualization corpus of over 4,000.
- Analyzed visual embellishments, chart families, color, and structural features in the corpus; ultimately identified stable design profiles through hierarchical clustering.
- Estimating accessibility successes and failures of the visualization corpus; planning to develop relevant guidelines for public health communications.

Research Assistant June – December 2023
Space Enabled with Dr. Danielle Wood Social Justice, Remote Sensing, and Climate
MIT Media Lab, Cambridge, MA.

- Used Daymet data in Google Earth Engine to evaluate heat exposure for over 1,000 U.S. prisons, estimating environmental vulnerabilities for the marginalized community.
- Produced a final dataset that comprehensively examined U.S. prisons' extreme heat during the summer from 1990–2023 and further investigated demographic disparities in heat exposure, providing statistical evidence for community activists and policymakers.

Research Assistant June - August 2022
Dr. Jeff Haung and Dr. James Tompkin HCI and Computer Vision
Brown University, Providence, RI.

- Created an interactive web application that accepted a user's written word and compared it to a trace generated by an ML model, intended for learning new languages and for use in elementary schools.
- Developed frontend and backend features, including UI/UX, data compression models, memory management, stroke-comparison methodology, and ML model integration to ensure smooth application performance.

Publications

Hines, M. & Ottley, A. Hidden Barriers: Evaluating Accessibility in Public Health Data Visualizations **(In Preparation)**

Hines, M. & Ottley, A. (2026). Charting Public Health: A Taxonomic Study of Visualization Practices in the Public Health Field, *In Proceedings of 2026 IEEE VIS: Visualization & Visual Analytics* **(Accepted)**

Ovienmhada, U., **Hines, M.,** Krisch, M., Diongue, A. T., Minchew, B., & Wood, D.R. (2024). Spatiotemporal facility-level patterns of summer heat exposure, vulnerability, and risk in United States prison landscapes. *GeoHealth*

Presentations

Charting Public Health: A Taxonomic Study of Visualization Practices in the Public Health Field, *IEEE VIS: Visualization & Visual Analytics* (Upcoming)

Career Development Panel*, Black Girls Do STEM & Kode with Klossy*. (2026)

Data Visualization: An introduction to data visualization research and "common" best practices, *Schnur Laboratory: University of Texas Health Science Center at Houston*. (2026)

DSS Talk: Visual Choices, Public Voices: Investigating the influence of design in public health infographics, *WashU CSE Department.* (2025)

Teaching and Mentoring Experiences

Research Supervisor January – May 2026

Washington University in St. Louis, St. Louis, MO.

- Developed a research agenda for an undergraduate student and supervised the project to successful completion.

Instructor Assistant March 2025

Kode With Klossy, St. Louis, MO.

- Supported middle and high school girls in learning web development and AI for a workshop that spanned a weekend.

Founding Member & Lead Instructor October 2022 – May 2024

Girls Who Code Chapter, Grinnell, IA.

- Trained assistant instructors and created a robotics curriculum to teach coding for a middle-school girls' after-school program. The program continues to this day and now includes multiple age groups.

Teaching Assistant (TA) for Introductory Statistics August – December 2022

Grinnell College, Grinnell, IA.

- Assisted students in their understanding and application of statistical concepts.
- Fostered a supportive, welcoming learning environment during office hours and in the classroom

Professional Experiences

Administrative Assistant & Full-Stack Engineer August 2017 – May 2022

Sorkins Business Information, St. Louis, MO.

- Improved user accessibility and flexibility with information, cleaned up data, and reduced key operation load times by 15%.
- Developed new user search tools including Family Business Search, Archive Search, Branch Locations Search, and Business Social Media Search. Programmed new download options for the information.

Favored Projects

Data Scientist February 2023 – May 2023

Course Project for Environmental History, Monterey, CA.

- Arranged, cleaned, and managed a large dataset of transcribed daily logbook entries from 1835-1839.
- Served as data liaison to transcribers in the course. Visualized route and sperm whale activity on a world map using ArcGIS. Results were published in a cover-story article of the Earth Island Journal.

Virtual Reality (VR) Project Developer September 2018 – June 2019

Independent Research, St. Louis, MO.

- Designed and programmed Virtual Reality simulations to improve users' mental health. Simulations incorporated mindfulness practices, serene environments, and guided meditations.
- Conducted a mixed-method user study to estimate the simulations' efficiency. Participants' heart rate decreased by 10% on average, and 93% of them recommended the simulation.

Featured Articles and Interviews

- Kode With Klossy, National 10-Year Anniversary Campaign, *Mia: Code x Impact,* April 2025
- KSDK 5, *Supermodel and St. Louis native Karlie Kloss elevates coding opportunities focused on AI and machine learning in her hometown*, March 2025
- Grinnell College, *Computer Science Department Celebrates Outstanding Graduates*, May 2024
- Grinnell College, Grinnell's Girls Who Code group strives to close gender gap in tech jobs, March 2024
- MIT IDSS, *Inclusive research for social change: The MIT Student Research Program pairs underrepresented students with opportunities to examine inequity. . .*, January, 2024
- Grinnell College, *Grinnell Students Attend Grace Hopper Celebration,* October 2023
- MIT OGE Department, *MIT Summer Research Program (MSRP): Student Reflection,* August 2023
- KSQD Community Radio, *Rich King, Mallory Hoffbeck, and Mia Hines Share Their Adventure Into the Past –Guided by Captain Joy's Last Whaling Log*, August 2023
- Earth Island Journal, *Captain Joy's Last Voyage: What a whaling captain's logbook can teach us about sperm whales and our oceans*, Summer 2023
- MIIS, *Sunny Beaches, Sea Otters, and Other Shenanigans,* February 2023

Technical Skills

- **Languages:** Python, C, JavaScript, HTML/CSS, Bootstrap, NCurses, Java, SQL, UNIX, CUDA, R, A-Frame, Assembly, Scheme
- **Software:** RStudio, Google Earth Engine, ArcGIS, Microsoft Excel, Stata