

MARGARET ELLEN “ELLIE” SEEHORN

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EDUCATION

University of Michigan

PhD in Computer Science and Engineering

Advised by Anhong Guo and Venkatesh Potluri

Ann Arbor, MI

August 2025-2030 (*expected*)

Grinnell College

B.A. in Computer Science and Sociology, Concentration in Statistics

GPA: 3.95/4.0

Grinnell, IA

May 2025

RESEARCH EXPERIENCE

Computing Research Association Distributed REU [1], [2]

Supervisors: Dr. Anhong Guo, and Jaylin Herskovitz (PhD Student)

June 2024 - Present

University of Michigan

- Developed accessibility-layer application for delivering augmentations such as camera aiming, unknown-unknown surfacing, and model debugging to existing AI-powered mobile assistive technologies
- Explored iOS Shortcuts as a means to integrate app functionality with existing tools
- Presented lab projects to Blind/Visually Impaired (BVI) community members at VISIONS 2024
- Contributed to in-development paper

Carnegie Mellon University HCII REU [3], [4], [5]

Supervisors: Dr. Vincent Aleven, Dr. Haiyi Zhu and C. Naomie Williams (PhD student)

June 2023 - Aug 2023

CMU

- Designed and conducted semi-structured interview protocol to evaluate design futures for integrating Individualized Education Programs (IEPs) into Adaptive Learning Tools (ALTs) in Special Education
- Performed open coding and affinity mapping of interview results to inform guidelines for IEP-aware ALT implementations
- Contributed to in development paper

DUB REU [6],[7],[8]

Supervisors: Dr. Jennifer Mankoff

June 2022 - Aug 2022

University of Washington

- Developed an optimization algorithm to select ideal embroidery textures for textile tactile graphics
- Engineered novel method for creating braille with machine embroidery
- Designed and ran a user study measuring the efficacy of embroidered tactile graphics relative to traditional ones
- Debugged OPTIMISM domain-specific metaheuristic optimization framework
- Explored conductive-thread sonification as a means for adding live audio feedback to tactile graphics

PUBLICATIONS

- [1] **E. Seehorn** and J. Herskovitz, "VISIONS of accessibility: Michigan's Human-AI lab fosters community engagement and real-world technical solutions," *XRDS*, vol. 31, no. 1, 2024. DOI: 10.1145/3688091. [Online]. Available: <https://dl.acm.org/doi/10.1145/3688091>.
- [2] J. Herskovitz, **M.E. Seehorn**, A. Jamoa, J. Meddaugh, and A. Guo, "A1lyextensions: Designing accessibility extensions to augment mobile ai assistive technology in-situ," In progress, 2024.
- [3] C. N. Williams, **M.E. Seehorn**, M. Ellis-Einhorn, H. Zhu, and V. Aleven, "The hidden majority: Examining the inaccessibility crisis as a barrier to equitable education," ser. ISLS '24, Workshop, run on ISLS Community Day 2024, Buffalo, NY, USA: International Society of the Learning Sciences, 2024. [Online]. Available: <https://2024.isls.org/proceedings/>.
- [4] C. N. Williams, **M.E. Seehorn**, H. Zhu, and V. Aleven, "Challenges and design opportunities for technology-enhanced learning in special education," In progress, 2024.
- [5] C. N. Williams, **M.E. Seehorn**, M. Ellis-Einhorn, H. Zhu, and V. Aleven, "The hidden majority: Examining the inaccessibility crisis as a barrier to equitable education," ser. ECTEL '25, Buffalo, NY, USA: Twentieth European Conference on Technology Enhanced Learning, 2024. [Online]. Available: <https://ea-tel.eu/ectel2025/accepted-papers>.
- [6] **M.E. Seehorn**, C. Winston, B. Liu, G. S.-H. Kim, E. White, G. Nupur, K. Glazko, A. Desai, J. Cao, M. Hofmann, and J. Mankoff, "Beyond beautiful: Embroidering legible and expressive tactile graphics," in *The 27th International ACM SIGACCESS Conference on Computers and Accessibility*, ser. ASSETS '25', Denver, CO, USA: Association for Computing Machinery, 2022. DOI: 10.1145/3559400.3565586. [Online]. Available: <https://doi.org/10.1145/3663547.3746336>.
- [7] K. Glazko, **M.E. Seehorn**, M. Lamkin, K. Mankoff-Dey, J. Cha, S. Siganamalla, B. Kosa, and J. Mankoff, "Prompt4good: Co-opting GAI to create fair outcomes for indirect users," In submission to CSCW '26, 2025.
- [8] M. Hofmann, N. Auradkar, J. Birchfield, J. Cao, A. G. Hughes, G. S.-H. Kim, S. Kurpad, K. J. Lum, K. Mack, A. Nilakantan, **M.E. Seehorn**, E. Warnock, J. Mankoff, and S. E. Hudson, "Optimism: Enabling collaborative implementation of domain specific metaheuristic optimization," in *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, ser. CHI '23, Hamburg, Germany: Association for Computing Machinery, 2023, ISBN: 9781450394215. DOI: 10.1145/3544548.3580904. [Online]. Available: <https://doi.org/10.1145/3544548.3580904>.

WORK EXPERIENCE

Computer Science Course Mentor

Grinnell College Computer Science Department

Jan 2023 - Present

Grinnell, IA

- Provided assistance to Professor and students during class sessions
- Hosted weekly review sessions to practice and clarify recent material, answer student questions, and provide guidance on student projects
- Courses Mentored:
 - Fall '24:** Operating Systems & Parallel Algorithms w/ Lab
 - Spring '24:** Imperative Problem Solving and Data Structures w/ Lab
 - Fall '23:** Functional Problem Solving w/ Lab
 - Spring '23:** Object-Oriented Programming, Data Structures, & Algorithms

Computer Science Individual Tutor, Functional Problem Solving

Grinnell College Computer Science Department

Aug 2022 - Dec 2022

Grinnell, IA

- Support a student 1-on-1 with targeted feedback and practice material.

Computer Science Grader
Grinnell College Computer Science Department

Jan 2022 - Dec 2022
Grinnell, IA

- Provide substantive feedback and grades on student work in Grinnell's introductory CS courses
- Courses Graded:
 - Fall '22:** Imperative Problem Solving and Data Structures w/ Lab
 - Spring '22:** Functional Problem Solving w/ Lab

Peer Connections Pre-orientation Leader
Grinnell College Intercultural Affairs

Aug 2023 - Present
Grinnell, IA

- Conducted an engaging and inclusive week of programming for incoming Grinnell College students with marginalized identities
- Acted as an individual mentor beyond the week of programming for two students, meeting weekly

Access Student Leader
Grinnell College Disability Resources

Aug 2021 - Present
Grinnell, IA

- Revise documents to be digitally accessible for various campus constituents
- Create engaging social media content for department social media, write and apply alt-text and captions
- Design print visuals for distribution and department promotion around campus

LEADERSHIP

Computer Science SEPC Member
Grinnell College Computer Science Department

Aug 2022 - Present
Grinnell, IA

- Elected by my peers as a liaison between the department and students
- Hosting weekly events to foster community
- Provide an outlet to anonymously express any course concerns
- Offer a student voice to faculty review and hiring processes

Girls Who Code, Grinnell Chapter, Founding Member
Grinnell College

Jan 2023 - Present
Grinnell, IA

- Develop and teach curriculum about computer science to 5th and 6th grade female and nonbinary students at Grinnell Middle School
- Topics to date have included web development and robotics
- Foster sense of belonging in tech for next generation of computer scientists

Grinnell Women and Gender Minorities in Computing
Grinnell College

Aug. 2021 - Present
Grinnell, IA

- Member: 2021-22; President 2022-Present
- Provide space for discussion and community among gender-minority computer science students at Grinnell College
- Host empowering speakers who are gender minorities in technology

Grinnell Computing Peers United
Grinnell College

Jan. 2022 - Present
Grinnell, IA

- Mentee: Jan 2022-May 2022; Mentor Oct 2022-Present; Program Coordinator Sept 2023-Present
- Match early-career and established computer science students at Grinnell College in a mentoring relationship
- Host community-building events each semester for mentors and mentees

ACHIEVEMENTS

Goldwater Scholar, awarded by The Barry Goldwater Excellence in Education Foundation	<i>2024</i>
Phi Beta Kappa (inducted in junior year)	<i>May 2024</i>
Winner of UW CREATE Accessible and Inclusive Textiles Hackfest	<i>July 2022</i>
Grinnell College Dean's List	<i>Fall 2021-Spring 2024</i>
Founders' Scholarship, awarded by Grinnell College	<i>Fall 2021-Present</i>
National Merit Scholar, awarded by National Merit Scholarship Corporation	<i>2021</i>