MELISSA CHEN

Design-based researcher researching how to support computing students' motivation and self-efficacy

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EDUCATION

PhD in Computer Science
Northwestern University | Evanston, IL — Sept 2022 – Present

BS in Computer Science, minor in Mathematics
University of Illinois at Urbana-Champaign | Urbana, IL — Aug 2018 - May 2022

RESEARCH EXPERIENCE

PhD Researcher
Delta Lab, Northwestern University | Evanston, IL — Sept 2022 - Present

- Created, led, and evaluated co-design workshops for designing scalable interventions for student self-efficacy
- Designed, conducted, and analyzed qualitative data from longitudinal interviews with students to understand reasons for self-assessments in programming
- Conducted design-based research to iteratively build and test AI-driven, IDE-based real-time intervention through user studies with students to understand usage and perception of tools

Undergraduate Researcher
ORCHID Lab, University of Illinois at Urbana-Champaign | Urbana, IL — Aug 2021 – May 2022

- Designed data visualizations and ran statistical tests to understand disparities in students' self and peer evaluations

Undergraduate Research Intern
National Center for Supercomputing Applications | Urbana, IL — Jan 2021 – May 2022

- Experimented with how data qualities (e.g., color vs. grayscale) impacted model classification accuracy for streetview images of crop field tillage
- Implemented and tested a novel approach using unsupervised clustering to segment satellite images of crop fields into crop and non-crop types to use as training data for a supervised model

SELECTED PUBLICATIONS (2 OF 3)

Chen, M., Li, Y., O'Rourke, E.. 2024. Understanding the Reasoning Behind Students' Self-Assessments of Ability in Introductory Computer Science Courses. *International Computing Education Research.* **Winner: Best Paper Award**

Li, Y. , **Chen, M.**, Hunt, A., Zhang, H., and O'Rourke, E. 2024. Exploring the Interplay of Metacognition, Affect, and Behaviors in an Introductory Computer Science Course for Non-Majors. *International Computing Education Research.*

SELECTED AWARDS

- Graduate Research Fellow, National Science Foundation (2024 – 2029)
- Design Cluster Fellow, Northwestern University Center for Human-Computer Interaction + Design (2023 – 2024)
- Incoming Cognitive Science Fellow, Northwestern University (2022 – 2023)
- Outstanding Course Assistant, University of Illinois at Urbana-Champaign Computer Science Department (2020)

TEACHING EXPERIENCE

Undergraduate Course Assistant, CS 233 (Computer Architecture)
University of Illinois at Urbana-Champaign | Urbana, IL — Jan 2020 – May 2022

- Facilitated in-class group work activities by answering student questions and clarifying course content
- Adapted homework and exam questions to online format to support student learning in the virtual & hybrid settings
- Held office hours to debug and answer questions about labs covering various course concepts

Undergraduate Course Assistant, CS 196 (Freshman Honors)
University of Illinois at Urbana-Champaign | Urbana, IL — Jan 2019 – Dec 2019

- Managed two groups of students (2-4 students each) working on semester-long, full-stack projects by providing guidance on group work skills, project planning, and technical implementation

OTHER EXPERIENCE

Graduate Engagement Opportunities Program Practicum Student
Northwestern / Evanston Township High School Partnership Office | Evanston, IL — Mar 2024 – June 2024

- Conducted focus groups and analyzed qualitative data to elevate student voices and experiences as a part of program evaluation for the Women in STEM and Women in Engineering student clubs
- Connecting Northwestern faculty and ETHS teachers towards developing more inclusive computing curricula

Software Engineering Intern
Lyft Pink & Memberships Team, Lyft | Remote — May 2022 – Aug 2022

- Redesigned existing framework to produce faster, consistent results to improve the user and developer experience
- Presented design documents and presentations to communicate plans and outcomes to cross-functional stakeholders

Software Engineering Intern
Integrity Team, Lyft | Remote — May 2021 – Aug 2021

- Leveraged existing infrastructure to create a P0 version of a feature to put Lyft in line with card network expectations
- Collaborated with cross-functional partners in analytics, data science, product, operations, and engineering to finalize implementation details and understand impacts of designs

Software Engineering Intern
Privacy Infrastructure Team, Facebook | Remote — May 2020 – Aug 2020

- Developed a new framework to test feature extractors used to detect user-identifiable information and created an intuitive user interface to expedite feature extractor development and decrease experiment runtime by half

SELECTED LEADERSHIP

Co-chair & Co-Organizer
Graduate Women in Computing | Evanston, IL — Oct 2022 – Present

- Organized regular events to support graduate and faculty women in computing, such as lunches to build community and seminars to learn essential skills and strategies for graduate school

Board Member
Computer Science PhD Advisory Council | Evanston, IL — Feb 2023 – Present

- Facilitated town hall events to understand student needs and raise concerns with faculty and administration
- Coordinated and presented "DEI Minutes" to share bite-sized pieces of information about diversity, equity, and inclusion topics to encourage conversation about creating a more inclusive department community
- Organized and facilitated panels and events at visit day and new student orientation