

Melissa Chen

PHD STUDENT · COMPUTING EDUCATION & HUMAN-COMPUTER INTERACTION

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Education

Northwestern University

PH.D. STUDENT IN COMPUTER SCIENCE

Studying human-computer interaction and computing education, advised by Professor Eleanor O'Rourke

Evanston, IL

Sept. 2022 - Present

University of Illinois at Urbana-Champaign

B.S. IN COMPUTER SCIENCE, MINOR IN MATHEMATICS

Graduated with Highest Honors & as a Distinguished Chancellor's Scholar

Urbana, IL

Aug. 2018 - May 2022

Research Experience

Participatory design for changing students' beliefs in programming

DELTA LAB | PI: DR. ELEANOR O'ROURKE, CO-ADVISOR: DR. DURILONG

- Designing participatory design sessions to engage students in ideating pedagogical and technological interventions for changing students' beliefs about their programming abilities and of the programming process
- Designing a short-term, socially situated intervention to address students' overly critical self-assessment criteria for their programming abilities

Evanston, IL

Sept. 2023 - Present

Understanding reasons for students' self-assessments of their programming abilities

DELTA LAB | PI: DR. ELEANOR O'ROURKE

- Designed and conducted a long-term interview study to understand how environmental factors and prior experience impacts students' expectations of the programming process and their criteria for self-assessing their programming abilities
- Conducted a qualitative analysis of interview data to understand reasons and sources for students' self-assessments

Evanston, IL

Apr. 2023 - Present

Real-time feedback to support beginner programming students' self-efficacy

DELTA LAB | PI: DR. ELEANOR O'ROURKE

- Designed a real-time, IDE-based intervention to support beginner students who are negatively self-assessing their programming abilities based on unrealistic expectations about the programming process and to help them develop more accurate beliefs about their programming abilities
- Ran and qualitatively analyzed short-term user studies to understand student perceptions of the intervention

Evanston, IL

Sept. 2022 - Oct. 2023

Analyzing the impact of data qualities on model accuracy

NATIONAL CENTER FOR SUPERCOMPUTING APPLICATIONS SPIN INTERNSHIP | PI: DR. KAIYU GUAN

- Experimented with how data qualities (e.g., color vs. grayscale) impacted model classification accuracy for streetview images of crop field tillage

Urbana, IL

Jan. 2022 - May 2022

Disparities by gender in self and peer evaluation

CS STUDENT AMBASSADORS / RESEARCH SCHOLARS (CS STARS) | PI: DR. BRIAN BAILEY

- Analyzed disparities in self and peer evaluations in group work settings through data visualizations and statistical testing

Urbana, IL

Aug. 2021 - May 2022

Crop field grassway segmentation using NAIP satellite imagery

NATIONAL CENTER FOR SUPERCOMPUTING APPLICATIONS SPIN INTERNSHIP | PI: DR. KAIYU GUAN

- Implemented 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

Urbana, IL

Jan. 2021 - Dec. 2021

Selected Awards & Honors

Design Research Cluster Fellowship

NORTHWESTERN CENTER FOR HUMAN-COMPUTER INTERACTION AND DESIGN | CO-ADVISORS: DR.

ELEANOR O'ROURKE, DR. DURILONG

Selected as one of seven fellows to receive interdisciplinary mentorship on a design research project

2023-2024

Research Computer Science Conference Scholarship

ASSOCIATION FOR COMPUTING MACHINERY, WOMEN IN COMPUTING (ACM-W)

Awarded a scholarship to attend SIGCSE Technical Symposium 2023

2023

Incoming Cognitive Science Fellowship

NORTHWESTERN UNIVERSITY

2022 - 2023

Selected as one of five incoming first-year PhD students in interdisciplinary fields related to cognitive science

Harold and Ruth Hayward Tau Beta Pi Scholarship

UNIVERSITY OF ILLINOIS GRAINGER COLLEGE OF ENGINEERING

2021 - 2022

Awarded to a Tau Beta Pi member on the basis of academic achievement and extracurricular service and leadership

Outstanding Course Assistant Award

UNIVERSITY OF ILLINOIS DEPARTMENT OF COMPUTER SCIENCE

2020

Nominated by course professor and selected by department as one of five awardees in fall 2020

Posters

EDITORIALLY-REVIEWED POSTERS

Melissa Chen and Eleanor O'Rourke. 2023. Designing a Real-Time Intervention to Address Negative Self-Assessments While Programming. In *Proceedings of the 2023 ACM Conference on International Computing Education Research V.2 (ICER '23 V2)*, August 7–11, 2023, Chicago, IL, USA. ACM, New York, NY, USA, 2 pages. <https://doi.org/10.1145/3568812.3603473>

OTHER POSTERS

Melissa Chen and Eleanor O'Rourke. Towards a real-time intervention to encourage beginners to develop accurate beliefs about programming ability. *CRA-WP Grad Cohort for Women Poster Circles*, San Francisco, CA. April 21, 2023.

Melissa Chen and Eleanor O'Rourke. Towards a real-time intervention to encourage beginners to develop accurate beliefs about programming ability. *2022 Lambert Conference on the Future of Human-Computer Interaction + Design*, Evanston, IL. October 24, 2022.

Melissa Chen, Wendy Shi, and Brian Bailey. Disparities by Gender in Self and Peer Evaluations. *Undergraduate Research Symposium*, Urbana, IL. April 28, 2022.

Melissa Chen and Maxwell Jong. Producing Training Data for Supervised Learning on Satellite Data. *National Center for Supercomputing Applications SPIN Intern Poster Session (Virtual)*, Urbana, IL. May 2022.

Melissa Chen, Kejie Zhao, Yizhi Huang. Crop Field Grassway Segmentation Using NAIP Satellite Imagery. *National Center for Supercomputing Applications SPIN Intern Poster Session (Virtual)*, Urbana, IL. May 2021.

Teaching Experience

Undergraduate Course Assistant

Urbana, IL

CS 233: COMPUTER ARCHITECTURE

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 enhance student learning in the virtual and hybrid settings
- Held office hours to debug and answer questions about labs covering various course concepts

Undergraduate Course Assistant / Project Manager

Urbana, IL

CS 196: FRESHMAN HONORS

Jan. 2019 - Dec. 2019

- Served as a project manager for two groups of students (2-4 students per group) working on semester-long, full-stack team projects by guiding them through fundamental group work skills, project planning, and technical implementation
- Held office hours to answer student questions about homework assignments and project development

Selected Service

DIVERSITY & INCLUSION

Public Relations Co-Chair & Outreach Team Member

Evanston, IL

GRADUATE SOCIETY OF WOMEN ENGINEERS

2023 - Present

Created content for social media and weekly newsletter to share GradSWE initiatives with members & assisting the outreach team with K-12 community outreach

General Board Member (Outreach Team)

Evanston, IL

GRADUATE SOCIETY OF WOMEN ENGINEERS

2023

Assisted outreach team in planning mentorship events and participated in outreach to the local K-12 community

Co-Organizer	<i>Evanston, IL</i>
GRADUATE WOMEN IN COMPUTING	<i>2022 - Present</i>
Coordinated community-building events for graduate students, research staff, and faculty in the computer science programs	
General Board Member	<i>Evanston, IL</i>
WOMEN IN SCIENCE AND ENGINEERING RESEARCH	<i>2022 - 2023</i>
Assisted in day-of logistics for events	
CS Student Ambassador / Research Scholar	<i>Urbana, IL</i>
DEPARTMENT OF COMPUTER SCIENCE	<i>2021 - 2022</i>
Planned and participated in outreach events for the local K-12 community and prospective students	
Summer Orientation CS Department Lead Mentor & Ambassador	<i>Urbana, IL</i>
WOMEN IN ENGINEERING	<i>2021, 2022</i>
Assisted incoming freshmen & admitted students by building community and answering questions	
Growth Chair	<i>Urbana, IL</i>
WOMEN IN COMPUTER SCIENCE	<i>2021 - 2022</i>
Piloted avenues for member feedback and formed committee to support student advocacy	
Explorations (Technical) Co-Chair	<i>Urbana, IL</i>
WOMEN IN COMPUTER SCIENCE	<i>2020 - 2021</i>
Designed workshops and resources for members to learn technical skills and hosted a book club to create space for discussions about technology ethics	
Curriculum Planning Co-Lead	<i>Urbana, IL</i>
GIRLS WHO CODE @ UIUC	<i>2022</i>
Coordinated the first curriculum planning initiative to improve workshop quality	
Workshop Facilitator	<i>Urbana, IL</i>
GIRLS WHO CODE @ UIUC	<i>2019 - 2021</i>
Taught programming and computing workshops to girls in the local community	
STUDENT SUPPORT & ADVOCACY	
Member	<i>Evanston, IL</i>
COMPUTER SCIENCE PHD ADVISORY COUNCIL	<i>2023 - Present</i>
Advocated for student needs with the department and hosting events to support PhD students' research and academic development	
Member	<i>Evanston, IL</i>
PHD VISIT DAY & ORIENTATION COMMITTEE	<i>2023</i>
Helped to plan and coordinate visit day events for admitted PhD students	
Member	<i>Urbana, IL</i>
COMPUTER SCIENCE STUDENT LEADERSHIP COUNCIL	<i>2021 - 2022, 2019 - 2020</i>
Relayed student sentiment and feedback to department chair and staff and helped to plan events	
COMMUNITY BUILDING	
Co-Organizer	<i>Evanston, IL</i>
COMPUTER SCIENCE EDUCATION READING GROUP	<i>2023 - Present</i>
Planned weekly reading group meetings to discuss computing education research and teaching	
Content x Diversity Co-Chair	<i>Urbana, IL</i>
REFLECTIONS PROJECTIONS STUDENT-RUN TECH CONFERENCE	<i>2020</i>
Led a team to plan largest speaker track to date for the first virtual edition of the conference	
Co-Director	<i>Urbana, IL</i>
HACKILLINOIS STUDENT-RUN OPEN SOURCE HACKATHON	<i>2019 - 2020</i>
Led a multidisciplinary team to run a beginner-friendly open source hackathon	

Professional Experience _____

Graduate Engagement Program Practicum Student
NORTHWESTERN - ETHS PARTNERSHIP OFFICE

Evanston, IL
Mar. 2024 - June 2024

Software Engineering Intern

Remote

LYFT | LYFT PINK & MEMBERSHIPS TEAM

May 2022 - Aug. 2022

- Redesigned existing framework to produce faster, consistent results and improved the user and developer experience
- Created design documents and presentations to communicate project plans and results to cross-functional stakeholders
- As a member of the Lyftern Advisory Committee, co-coordinated two projects to help interns network across locations and practice presentation skills and provided input on intern programming and synthesized feedback about the intern experience

Software Engineering Intern

Remote

LYFT | INTEGRITY TEAM

May 2021 - Aug. 2021

- Leveraged existing code and 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 pros and cons of major decisions

Software Engineering Intern

Remote

FACEBOOK | PRIVACY INFRASTRUCTURE TEAM

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

Professional Development _____

Reflective & Effective Teaching Program (2023-2024), Participant

2023 CRA-WP Grad Cohort for Women, Participant

Google Computer Science Research Mentorship Program (2021 A Cohort), Mentee

Professional Memberships _____

Association for Computing Machinery, Student Member (2020-)

Tau Beta Pi Engineering Honor Society (Illinois Alpha Chapter), Member (2019-)