

HAOLIN (HAILEY) LI

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RESEARCH INTERESTS

Introductory CS Education, Equity and Accessibility in CS Education, Software Engineering Education

EDUCATION

University of California, San Diego Fall 2024 – Spring 2026

M.S. in Computer Science. GPA: 3.94/4.00

- Thesis: *A Qualitative Analysis of Debugging Processes and Teachings.* Advisor: Michael Coblenz

Wellesley College Fall 2020 – Spring 2024

B.A. double major in Computer Science and Sociology, Magna Cum Laude. GPA: 3.82/4.00

- Independent Study: *Teacher's Community Engagement in United World Colleges.* Advisor: Matthew Kaliner
- Capstone Project: *Droplet Duo: 2D Platformer Collaborative Game For All Ages.* Advisor: Jordan Tynes

Massachusetts Institute of Technology (MIT) Spring 2021 – Spring 2024

Cross-registered Student, Gordon-MIT Engineering Leadership Program Graduate. GPA: 4.50/5.00

United World College (UWC) Atlantic and Changshu China Fall 2017 – Spring 2020

Bilingual IBDP class of 2020 in UWC Atlantic (Wales, the UK); Pre-DP class of 2017 in UWC Changshu China

RESEARCH EXPERIENCES

University of California, San Diego, SALAD Lab and CER Lab Fall 2024 – Present

Thesis Student and Research Assistant. Advisor: Michael Coblenz; co-advisor: Leo Porter.

- Conducted grounded theory analysis of debugging by 7 professional developers and 5 stream recordings; theorized debugging as a diagnostic process in which programmers update a mental model of the system to guide information gathering. [Contact for preprint]
- Designed and piloted three iterations of debugging pedagogy in undergraduate courses. Designing and conducting a comparative lab study on debugging strategies, mentoring 2 undergraduate research assistants.
- Investigated student-AI interactions in “vibe coding” with 19 undergraduate students in CS1 and SWE classes. Qualitatively analyzed prompting, navigation, and code exploration actions. [Preprint]

EdAI Project, MIT STEP Lab & Education Arcade Summer 2022 – Spring 2024

Data Team and Curriculum Design Team Researcher, Field Investigator. Co-PIs: Irene Lee, Helen Zhang

- Participated in a longitudinal study on how to teach underrepresented middle school students AI with a self-developed AI literacy curriculum. Collected classroom observation data, conducted qualitative thematic analysis on 40+ teaching professional development sessions, and supported the curriculum design. Results were presented in CSCL 2023, the MIT STEP lab, and the 2023 Wellesley College Tanner Conference. [Poster]

Wellesley College, Department of Sociology Fall 2023 – Spring 2023

Research Assistant. Advisor: Markella Rutherford

- Worked on qualitative data analysis in educational sociology. Translated (Chinese to English), annotated, and coded on the social issues and educational focuses reflected through children's graphic novels.

MIT CSAIL, Understanding the World Through Code Project Spring 2022

Instructional Material Designer. PI: Armando Solar-Lezama

- Produced teaching materials for 10+ hours of class time at the undergraduate level. Analyzed coursework materials and studies on neurosymbolic programming, program synthesis, and neural networks.

PUBLICATIONS

- Li & Coblenz (2025). **How Professional Software Engineers Debug: A Grounded Theory Analysis.** (Preprint)
- Geng, Shah, Li, Mulla, Swanson, Raj, Zingaro & Porter (2025). **Exploring Student-AI Interactions in Vibe Coding.** (Preprint) <https://arxiv.org/abs/2507.22614>

- Moore, Zhang, Gupta, Kuhlken, Li & Lee (2023). **Online vs In-person Professional Learning Communities: A Qualitative Comparison of Teacher Learning Experiences.** Proceedings of the 16th International Conference on Computer-Supported Collaborative Learning (CSCL 2023). (Poster; Acceptance rate 30%)
<https://doi.org/10.22318/cscl2023.111030>

TEACHING EXPERIENCES

MIT Introduction to Technology, Engineering, and Science (MITES)

Summer 2025

Computer Science Instructor

- Taught a 7-week remote introduction to computer science class in Python to 18 highly motivated high school senior students. Adopted a flipped-classroom style of learning. Held office hours, issued and graded assignments and quizzes, and provided individualized feedback. Instructed on the group project component. Adapted course content from MIT OpenCourseWare and UCSD undergraduate curriculum, consulting numerous other resources.

University of California, San Diego

Fall 2024 – Fall 2025

Teaching Assistant

CSE 11 Intro to Programming and Computational Problem-Solving in Java: *Fall 2024 – Spring 2025*

- Designed all exams and practice exam materials; led exam review sessions and held office hours; handled course logistics; designed and configured the autograder for programming assignments.

CSE 8A Intro to Programming in Python: *Summer 2025 – Fall 2025*

- Configured autograders and migrated course materials, led lab sessions, held office hours, and handled course logistics. Fall 2025 head TA of homeworks, leading 2 labs and 3 study group sessions per week.

Wellesley College

Fall 2022 – Spring 2024

Teaching Assistant

- CS 240 Fundamentals of Computer Systems (office hours, grading, recitations, instructional design): *Spring 2024*
- CS 230 Data Structures in Java (office hours, grading): *Fall 2022*
- MATH 225 Combinatorics and Graph Theory (grading): *Fall 2022*

GEC Tutoring Academy Teaching Assistant

Summer 2024

Teaching Assistant

- Provided weekly recitation and supplemental sessions on college-level introduction to AI/ML through Python; managed class logistics and provided individualized bilingual support through asynchronous communication, one-on-one office hours, and team-based meet-up sessions; graded assignments and evaluated student projects.

Dearborn STEM Academy (Boston Urban Teaching Fellowship Program)

Winter 2023

Assistant Teacher for 6th-11th Grades Urban Computer Science Class

- Observed and supported instruction in robotics, digital photography workflow, and senior projects.

INDUSTRY EXPERIENCES

Chicago Public Schools Information and Technology Services

Summer 2024

Information Security Team Summer Associate, Project Management

- Established a software contract tracking dashboard with Google Suite to support the team procurement; contributed to strategic planning by talking to 30+ vendors and evaluated software products' functionalities and costs. Gave 2 security talks to district teachers.

Hundsun Technologies

Summer 2023

Java Full Stack Intern, FinTech

- Joined an Agile team of 9 to implement a carbon emissions trading system that supports million-row dataset processing. Communicated on-site with clients to understand trading logic, identified design needs, and conducted process testing.

SERVICES AND LEADERSHIP

- Mentor, Computing Research Association Undergraduate Research to PhD Mentoring program (UR2PHD). 2025
- Teaching Assistant Mentor, UC San Diego CSE599, CSE 59. 2025

- Volunteer, ACM Technical Symposium on Computer Science Education (SIGCSE) 2025. 2025
- Reviewer, Koli Calling 25th International Conference on Computing Research. 2025
- Mentor, Wellesley College Computer Science Club. 2021 – 2024
- Leadership, Wellesley College Engineering Society. 2022 – 2024
- Volunteer, UWC Great Britain Selection Committee. 2023 – 2025

SELECT AWARDS

- Travel scholarship for Conference on Programming Language Design and Implementation Programming Languages Mentorship Workshop (PLMW@PLDI). 2024
- Alpha Kappa Delta International Honor Society of Sociology. 2024
- Boston Urban Teaching Fellowship. 2023
- Davis-UWC Scholar. 2020

SELECT TALKS

- **PrairieLearn and Teaching at Scale in Undergraduate Classes.** *UCSD CSE 95 Tutor Apprentice*. April 2025.
- **Chatbots, Smart Assistants, & Security.** *Chicago Public Schools Googlepalooza*. August 2024.
- **Your Data is in the Cloud.** *Chicago Public Schools Googlepalooza*. August 2024.
- **EdAI UROP Share of Methods, Findings, and Outcomes.** *MIT STEP Lab & Education Arcade*. April 2024.
- **Research in STEM Education at the MIT STEP Lab: The Everyday AI (EdAI) Project.** *Wellesley College Tanner Conference*. November 2023.
- **Predicting Support Rates of Idol Survival Competition Based on Models of Past Seasons Voting Data.** 2022 *Virtual Student Research Symposium on Statistics and Data Science, American Statistical Association*. April 2022.