Melinda Chang

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Research Interests

- Programming languages, compilers, type systems

- Language-based security, defensive computing

- Cultural analytics, literary theory, critical and cultural studies

Education

2024–Present **B.A., Computer Science & Comparative Literary Studies**
Northwestern University, Evanston, IL
GPA: 3.79, Dean's List (2 quarters)

Selected Experience

2025–Present University of California, Berkeley
Undergraduate Researcher, School of Information
Advisor: Prof. Timothy Tangherlini. Exploring the affordances of language models in apprehending literary narratives with high social complexity.
Berkeley, CA

2023–2024 University of California, San Diego
Student Researcher, Programming Systems Group
Advisor: Prof. Michael Coblenz. Toward ergonomic programming languages and software processes for computational climate scientists.
La Jolla, CA

2022 University of California, San Diego
Research Assistant, Laboratory for Computational Astrophysics
Advisor: Prof. Michael Norman. Systems programming to support analysis of dark matter halos in early universe simulations.
La Jolla, CA

2022 Hack Club
Software Engineer Intern
Building web tooling for JavaScript-based game engine.
Shelburne, VT (Remote)

Publications

2024   Elizaveta Pertseva, *Melinda Chang*, Ulia Zaman, Michael Coblenz. A Theory of Scientific Programming Efficacy. ICSE 2024 [International Conference on Software Engineering].

Awards & Grants

2024   National Merit Finalist.

2023   4th Place in Computational Systems & Analysis, *California Science & Engineering Fair*.

2023   1st Award in Computer Science & Systems Software, *Greater San Diego Science & Engineering Fair*.

Teaching Experience

2025   NORTHWESTERN UNIVERSITY
Undergraduate Teaching Assistant, COMP_SCI 396 Intro to Web Development

Service

2025–Present   *Staff Writer*, Responsible AI Student Organization (RAISO)
On current events in artificial intelligence ethics, tech policy, and computing culture.

2024–Present   *Director of Technology*, WildHacks
Leading software development at the largest collegiate hackathon in Chicagoland.

2021–2024   *Outreach Volunteer*, San Diego Astronomy Association

2023   *Founder & Director*, Hack the Wave
Organized San Diego County's biggest-ever high school hackathon.

Selected Projects

2022–2023   *Albio*. Lightweight JavaScript compiler to enable reactive web programming directly in markdown. Outperforms Virtual DOM-based frameworks like React, Vue in key benchmarks.

Selected Skills

TypeScript, React, Svelte, SASS, Tailwind · Rust · C/C++ · Python · Java · ELisp · Linux, Bash, Git.

Relevant Coursework

Data Structures & Algorithms · Intro to Literary Theory · C/C++ Programming · Intro to Functional Programming · Intro to Computer Systems · Intro to AI · Multivariable Calculus · Linear Algebra.