

Sam Fine

samafine1@gmail.com | [GitHub](#) | [LinkedIn](#) | [Website](#) | Updated May 17, 2026

EDUCATION

The University of Chicago

2021 - 2025

Computer Science, M.S.

Grad GPA: 3.78

Mathematics, B.S.

Notable Graduate-Level Coursework

Quantum Measurements and Metrology, Quantum Computer Systems, The Physics of Computation (QC theory), Intro to Machine Learning, Databases, Distributed Systems, Adv Classical Mechanics, Generative AI

PUBLICATIONS & PREPRINTS

A. Kamen, **S. Fine**, B. Bhattacharyya, F. Chong, A. Goldschmidt. Comparing and correcting robustness metrics for quantum optimal control. arXiv: [2602.10349](https://arxiv.org/abs/2602.10349).

RESEARCH EXPERIENCES

Quantum Error Correction

June 2025 - Present

Advised by [Liang Jiang](#)

Chicago, IL

- Devised fault-tolerant error correction & quantum computation protocols for concatenated qLDPC codes.
- Performed simulations of memory experiments with custom-designed syndrome extraction circuits in Stim.
- Developed hierarchical decoders that utilize soft information from machine-learning-based sub-decoders.

Robust Quantum Optimal Control

May 2025 - Feb 2026

Advised by [Fred Chong](#)

Chicago, IL

- Discovered and repaired a discretization error in a standard robustness metric for quantum optimal control.
- Studied the trade-offs between control complexity and error susceptibility at the pulse level.

Fermilab Mu2e Internship

June - Aug 2024

Advised by [Andrei Gaponenko](#)

Batavia, IL

- Helped develop the model of the [Mu2e experiment's](#) extinction monitor detector.
- Wrote and refactored C++ code to capture the complex geometries and constraints of the detector.

Higgs Boson Self-Coupling Classification

Jan 2023 - Jan 2024

Advised by [Philipp Windischhofer](#)

Chicago, IL

- Built and applied neural networks to extract highly-compressed, information-preserving statistics about Higgs boson self-coupling events from Large Hadron Collider datasets.

AWARDS & RECOGNITION

Accepted to "3+1" Bx/MS Program in Computer Science

2024

Metcalf Research Grant (\$4,500)

2024

[UC Berkeley Regents' & Chancellor's Scholarship](#) (~0.2% of all applicants selected, declined)

2020

PROGRAMMING SKILLS & INTERESTS

Skills: Python, Julia, C++, Git, French (A1)

Interests: Backpacking; Biking; Reading