

EDUCATION

The University of Chicago, Chicago, IL

Bachelor of Arts in Computer Science focusing on Computer Systems expected June 2025.

Thesis: Benchmarking sliding and parallel window decoding for CSS qLDPC codes with BP-LSD inner decoders.

Honors: Winter Tech Showcase Best Overall for GuessTheWiki (2024), University of Chicago Advanced Scholar (2024), Dean's List (2021/22), Odyssey Scholar.

TECHNICAL SKILLS

Programming Languages: Python, C, JavaScript, HTML/CSS, Rust, C++17/20, Bash, SQL.

Libraries: [Python]: Flask, Django, Jinja, Cirq, Qiskit, Pytest, Numpy, Pandas, Multiprocessing, Threading, [JavaScript]: React, Socket.io, Express, d3

Tools: Git, Linux, Docker, Neovim, VsCode, Gdb, Tmux, Sqlite.

Interests: Library and Backend Development, Quantum Software, Computer Systems, High-Performance Computing.

EXPERIENCE

Meyer's Group (Astrophysics Research Group at the University of Chicago)

Chicago, IL

Research Assistant focusing on Computer System Development

September 2024 – Current

Focusing on system development for sensors to be used in the Wilkinson Microwave Anisotropy Probe satellite.

- Implemented new cross-file locks for shared memory used by sensors with Python to improve system robustness.
- Implemented system-wide sensor status check, terminate, and restart protocol to ensure sensors are always functional while using the device.
- Implemented safe data writing via UDP for infrared cameras to prevent network and system crashes.
- Developed Python wrappers for C-bindings to improve code usability and readability for the team.

Inflection (Quantum Software and Hardware Company)

Chicago, IL

Quantum Software Engineering Intern in the Compiler Team

June 2024 – August 2024

Focused on developing testing, linting, and formatting tools, improving the website, and quantum computing.

- Developed measurement and classical control conversion between Pytket and Cirq expanding circuits handled by the Superstaq compiler.
- Implemented password recovery, email validation, and deprecated password hash handling with Flask to enhance website security.
- Implemented job cancelation for multiple target hardware reducing the cost of large job submissions for users.
- Reimplemented non-deterministic algorithms to catch bad user inputs, and avoid test failing for random seeds.
- Developed custom Pylint plugins to enforce code styling consistencies and catch typing errors.
- Implemented Github workflows to improve continuous integration to a research repository.

University of Chicago Biological Science Division

Chicago, IL

Student Data Analyst and Programmer

November 2023 – September 2024

Focused on automating the department's fiscal and analytical work.

- Developed multithreaded data backup software with version checks and OAuth using TKinter, Boxsdk, and Python that handles multiple folders and files simultaneously to automate manual and tedious backup processes.
- Automated department's publication tracking with Flask web software to save more than 5 hours per week.
- Implemented web scraper with Selenium and Python to fetch 260 data points to automate manual copy-pasting.

PERSONAL PROJECTS

- [localgit](#) (Python): Command line tool to simultaneously manage multiple local git repositories.
- [licensepy](#) (Rust): Command line tool for Python dependency license checks with recursive dependency handling.
- [GuessTheWiki](#) (Flask, React, Postgres): Wikipedia article title guessing web game with multiplayer gameplay.
- [crochet-pix](#) (Django, Js, HTMX): Image to editable crochet pixel art conversion website. (80%)
- [ampy](#) (C++): Python programming language with Amharic keywords. (50%)