

## EDUCATION

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### The University of Chicago

Chicago, IL

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

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

## TECHNICAL SKILLS

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

**Libraries & Frameworks:**

**Python:** Flask, Django, Jinja, Cirq, Qiskit, Pytest, NumPy, Pandas, multiprocessing, threading

**JavaScript:** React, Socket.IO, Express, D3

**Tools & Environments:** Git, Linux, Docker, Vim, VS Code, GDB, Tmux, SQLite, PostgreSQL

**Interests:** Backend & Library Development, Computer Systems, High-Performance Computing, Quantum Software

## EXPERIENCE

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### 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 in the Wilkinson Microwave Anisotropy Probe satellite.

- Designed cross-process locks for Python sensor systems to ensure safe shared memory access and prevent data races.
- Implemented multithreaded image capture with fixed-pattern noise correction, synchronizing cameras, and reducing inter-camera timing variance to under 1 second.
- Developed UDP-based safe and bz2 compressed image transmission for infrared cameras, mitigating network overloads and reducing storage requirements.
- Built Python wrappers for C-bindings to enhance code usability and maintainability for infrared camera control.
- Created a Python desktop app for browsing and filtering camera images (by date, time, camera, and type), streamlining debugging, and eliminating manual image review.

### Infleqion (Quantum Software and Hardware Company)

Chicago, IL

#### Quantum Software Engineering Intern in the Compiler Team

June 2024 – December 2024

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

- Integrated control and measurement conversion between Pytket and Cirq, extending compiler's circuit compatibility.
- Enhanced Flask-based authentication by adding password recovery, email validation, and secure legacy hash handling.
- Developed job cancellation to reduce resource consumption and improve user control over quantum job submissions.
- Refactored non-deterministic algorithms to validate user input and ensure consistent test results across random seeds.
- Created Pylint plugins to enforce style consistency and detect typing issues, improving code quality across codebase.
- Built custom GitHub Actions to strengthen CI pipelines and automate testing across quantum research projects.

### 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.

- Built multithreaded backup software with version control and OAuth integration with Tkinter and Boxsdk, automating large-scale file and folder backups.
- Automated faculty publication tracking with a Flask web app, saving 5+ hours weekly in manual data entry.
- Developed a Selenium-based scraper to extract 260+ data points, automating previously manual collection processes.

## PERSONAL PROJECTS

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- [localgit](#) (Python): CLI tool for managing multiple local Git repositories in parallel.
- [licensepy](#) (Rust): CLI tool for Python dependency license checks.
- [GuessTheWiki](#) (Flask, React, Postgres): Multiplayer web game for guessing Wikipedia article titles.
- [crochet-pix](#) (Flask, JS, React): Converts images into crochet patterns with AI-based generation. (In progress)
- [ampy](#) (C++): Python variant with Amharic-language keywords for native-language programming. (In progress)