Sophia Fu

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Education

Northeastern University - Khoury College of Computer Sciences Boston, MA

Bachelor of Science in Computer Science, Minor in Computational Social Science *Expected May 2027*

Honors & Awards: FinHacks 1st Place (2025), Dean's List (2025, 2024, 2023), PVSA Gold (2022, 2021)

Relevant Coursework: Algorithms and Data, Object-Oriented Design, Computer Systems, Engineering LLM-Integrated Systems, Database Design, Theory of Computation, Programming Languages, Foundations of Data Science

Skills

Languages: JavaScript, Typescript, Java, Python, C, C++, HTML, CSS, SQL, R

Frameworks and Libraries: React, Express.js, Node.js, Flask, Tailwind CSS, NumPy, pandas, Matplotlib

Technologies and Tools: AWS**,** MongoDB, Docker, MySQL, Supabase, Git, npm/Yarn, Jupyter Notebook, JUnit, LaTeX

Experience

L3Harris Technologies Rochester, NY

Software Engineer Intern *May – August 2025*

- Optimized C++ driver-level caching mechanisms to reduce Web GUI update latency from ~3 seconds to near-instantaneous for satellite communication components (power amplifiers, modems, beacon receivers) within a Linux environment.
- Extended driver functionality by implementing thread-safe getter and setter interfaces, enabling greater flexibility and more efficient access to hardware data.
- Resolved UI layout defects in a mission-critical web GUI for a satellite system by debugging CSS and Flexbox issues; validated fixes across devices and legacy hardware, including older Toughbook displays.

The Brain ImPACT Lab Boston, MA

Undergraduate Research Assistant *September 2024 – Present*

- Collaborate with researchers in incorporating data management and applying computational modeling of the brain using R.
- Aggregate 6000+ data points for TBI clinical trials and write 50+ detailed reports following each session for 12-weeks.

NUROVER Boston, MA

Software Developer *September 2024 – September 2025*

- Implemented interactive UI elements (buttons, LED Matrix) that publish messages to ROS 2 topics, controlling robot behavior and expanding range of customizable behaviors.
- Conducted system integration tests using ROS 2 bring-up to validate and ensure reliability of multi-node communication.

Northeastern Computer Science Mentoring Organization Boston, MA

President *February 2024 – Present*

- Increase organizational visibility by delivering communications to 1000+ students and campus-wide promotional activities, improving club engagement by 750% within 6 months.
- Led club strategy by connecting with students and professionals, prioritizing initiatives, and implementing student activities.

Projects

Text-to-CAD Generation System | TypeScript, Next.js, Node, Express, OpenSCAD, GPT-5 January 2026

An AI-powered web tool for generating manufacturable product designs

- Building a full-stack workflow that converts user prompts into parametric CAD outputs (STL/SVG/DXF) using template-driven OpenSCAD generation and structured JSON outputs from LLMs.
- Implementing an agentic backend with an LLM orchestrator to select product templates, infer parameters, manage assumptions, and drive validation and export pipelines.
- Developing automated export and productization packs, including manufacturing checklists and one-page product summaries (ICP, TAM, pricing, GTM) to support rapid iteration and commercialization.

EduShare Hub | Python, Flask, AppSmith, MySQL, Docker April 2024

An educational resource sharing web application

- Led a 4-member team to develop an educational resource sharing web app, managing 40+ CRUD operations in a MySQL database for real-time resource management.
- Utilized Docker to containerize Flask applications and MySQL database, ensuring a consistent and isolated environment.