Elaine Cui

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Education

Northwestern University — June 2026
B.S. in Computer Science, Minor in Mathematics — *Evanston, IL*
- **GPA: 3.95/4.00** | ACT: 35 | Dean's List
- **Relevant Coursework:** Data Structures and Algorithms, Computer Systems, Machine Learning, Introduction to C and C++, Java Programming, Discrete Mathematics, Multivariable Calculus, Linear Algebra

Professional Experiences

Minnesota Government IT Services | Health Department — June 2024 – Present
Software Engineer Intern — *Minneapolis, MN*
- Automated immunization SMS messaging system with **AWS Pinpoint**, **Python**, and **JSON** for 200+ campaigns and 100,000+ Minnesotans to keep citizens up to date with recurring healthcare information and updates.
- Constructed web application utilizing **Vue.js**, **JPA**, **Spring Boot**, **Maven**, **Micronaut**, and **PostgreSQL** to collect language preferences for 10,000+ pre-literate adults to customize **AWS Pinpoint** for the Infectious Disease Division's texting campaigns. '

The Garage Northwestern — September 2023 – Present
Full Stack Software Engineer — *Evanston, IL*
- Built dynamic website by leveraging **React**, **Typescript**, and **AWS** to centralize entrepreneurship workshops, alumni databases, and idea creation for **1,500+** startups, **1,000+** students, and alumni in Chicago and San Francisco.
- Conducted field study research on needs of participants through **30+** hours of surveys and primary research, consolidating into initial minimum viable product with focus on simplifying and engaging students with the startup program.

Caraburo IT Consulting — May 2023 - September 2023
Software Engineer Intern — *Minneapolis, MN*
- Facilitated creation of full-stack web application using **React** and **Python** to search for affordable daycare centers in **20+** states by developing **API** requests to retrieve data from backend **MySQL** databases, utilizing **Google Maps** and **Places API**.
- Created messaging system between **100+** parents and daycare centers with **WebSocket** to allow for texting and image sharing.

Project Experiences

Scholarly | Northwestern WildHacks Winner - Best Use of AI in Education — April 2024 - Present
Python, MongoDB, FastAPI, Claude-3, React, TypeScript, Tailwind
- Founded **AI** educational platform with team to promote accessibility, simplifying **10,000,000+** research and academic materials into **6** literacy levels and formats to then be saved and shared digitally in platform classrooms for educators or students.

OurConnection Prototype — April 2024 – Present
Python, React, MongoDB, TypeScript, Tailwind
- Spearheaded platform for incarcerated women to post their stories and increase awareness through a pen-pal program, interviewing **5+** current and past incarcerated women and prototyping with Women Initiating New Directions throughout the design process.

The Garage Launchpad — September 2023 – Present
Python, React, TypeScript, Tailwind, AWS, Next.js
- Developed full stack web application using **React**, **Python**, **AWS Lambda**, **AWS API Gateway**, and **AWS Relational Database Service** to create a dynamic directory of **1,500+** alumni with keyword filtering through **SQL** queries.

Evanston Bus Tracker — February 2024 – March 2024
C, C++
- Retrieved bus information to perform navigation of Open Street Map through **API** implementation and graphical displays — provided **200+** buildings and bus times for **20+** stops on campus to increase ease of navigation for students.

Python Subset Execution Environment — January 2024 – February 2024
C
- Implemented parts of **Python's** scanner, execute, and memory components in **C** by tokenizing input, traversing operational graphs for function calling and variable assignments, and managing memory allocation with pointers, reducing initial complexity by **25%**.

YouTube to MP3 Converter — July 2023 – August 2023
Python, JavaScript, CSS, HTML
- Designed and developed website utilizing **Python**, **HTML**, **CSS**, and **YouTube Data API** to convert YouTube videos into **MP3** files (with error handling) — adopted by school media club for video editing by **50+** students.

Skills & Interests

Programming Languages: Python, Java, C++, C, TypeScript, JavaScript, HTML, CSS
Technologies: React, Vue, AWS, MongoDB, SQL/NoSQL Databases, JPA, Next.js, Spring Boot, FastAPI, Micronaut, NumPy
Interests: Graphics, Machine Learning, AR/VR Programming, Full Stack Software Engineering, Video Creation, Image Processing