Elaine Cui

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Education

Northwestern University

B.S. and M.S. in Computer Science — *Evanston, IL*
- **GPA: 3.94/4.00** | ACT: 35 | Dean's List
- **Relevant Coursework:** Data Structures, Algorithms, Operating Systems, Database Systems, Distributed Systems, OOP, Machine Learning, Artificial Intelligence, Networking, Cloud Solutions, Graphics, CS Education, Functional Coding, Scalable Architecture

Professional Experiences

Netflix — June 2025 - September 2025

Software Engineer Intern — *Los Gatos, CA*
- Spearheaded TV-specific **Redux-Saga DevTool** for visualizing and debugging background tasks, addressing gaps in developer tooling, and allowing **30+** engineers to boost productivity by **+20%** through observable tasks, side effects, and event triggers.
- Led end-to-end development by conducting engineer interviews and deploying with **TypeScript**, **React**, and **Saga generator functions**, becoming an essential tool of the TV Client Foundations and Discovery Viewing Experiences teams.

The Garage Northwestern — September 2023 – Present

Full Stack Software Engineer — *Evanston, IL*
- 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.
- Conducted field study research on needs of participants through **50+** hours of surveys and primary research, focusing on facilitating and engaging **1,500+** startups, **1,000+** students, and alumni in Evanston, Chicago, and San Francisco.

Northwestern University — September 2024 – Present

Computer Science Teaching Assistant and Student-Athletes Tutor — *Evanston, IL*
- Assisted **200+** students in Graphical Programming (CS 351) and C/C++ Programming (CS 211) by conducting **50+** office hours, collaborating with the professor to develop exam questions, and providing support in assignments, projects, and assessments.
- Tailored study plans for **10+** student-athletes through individualized tutoring sessions in Linear Algebra (MATH 240), Single Variable Calculus (MATH 218), Computer Programming (CIS 110), and Fundamentals of Programming (CS 111).

Minnesota Government IT Services | Health Department — June 2024 – September 2024

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, condensing duplicate scripts by **35%**.
- Constructed web application utilizing **Vue.js**, **Spring Boot**, **Maven**, **Hibernate**, **Micronaut**, and **PostgreSQL** to collect language preferences for 10,000+ non-literate refugees to customize **AWS Pinpoint** for the Refugee Division's texting campaigns.

Caraburo IT Consulting — May 2023 - September 2023

Software Engineer Intern — *Minneapolis, MN*
- Facilitated creation of full-stack web application using **React**, **Python**, **Google Maps** and **Places API**, and **MySQL** to search for affordable daycare centers in **20+** states through interactive maps displays, location tracking, and quick view features.
- Created messaging system between **100+** parents and daycare centers with **WebSocket** to allow for image sharing and texting.

Project Experiences

DotByDot | AI Braille Learning Platform — March 2025 - Present

Python, Gemini AI, React, Next.js, DynamoDB, TypeScript, FastAPI, Tailwind, Custom Hardware
- Designed **AI** braille learning platform with custom **LCD keyboard prototype** and lesson adaptation using **Google Gemini**, personalizing difficulty based on performance and translation for **3+** languages with **i18n** to address global braille literacy gap.

Scholarly | Northwestern WildHacks Winner - Best Use of AI in Education — April 2024 - April 2025

Python, Claude-3, React, Next.js, MongoDB, TypeScript, FastAPI, Tailwind
- Co-founded **AI** educational platform 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 and students.

Database Systems Components — Jan 2025 – Mar 2025

C++
- Implemented **disk-backed buffer pool**, **B+ tree index**, and **SQL query executor** (joins, aggregations, and optimizations) for mini relational database system, with support for **multi-threaded access**, **LRU-K eviction**, and **Volcano-style** query plans.

Skills & Interests

Programming Languages: Python, Java, C++, C, TypeScript, JavaScript, Go, Swift, HTML, CSS
Frameworks & Libraries: React, Vue, Next.js, FastAPI, Spring Boot, Redux, Gradle, Maven, Hibernate, Tailwind
Tools & Technologies: MongoDB, MySQL, PostgreSQL, DynamoDB, SQL/NoSQL, AWS, Docker, Git, Graphite, Jira, Figma
Interests: Education, Database Systems, Accessibility, Graphics, Full Stack Software Engineering, ML, AR/VR Programming