

WILLIAM SUN

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EDUCATION

Northeastern University, Boston, MA

Expected December 2025

B.S. in Computer Science and Mathematics (AI Concentration)

- **Honors:** American Mathematics Contest Distinguished Honor Roll (**Top 1% of USA**); 3x American Invitational Mathematics Exam Qualifier (**Top 2.5% of USA**); 3x MIT PRIMES STEP Researcher (**Top 10 in MA**); Harvard-MIT Math Tournament Bronze Medalist; Dean's List (2022–2025); Varsity Athlete Scholarship 2024

WORK EXPERIENCE

Chewy, Boston, MA

June 2024 – Dec 2024

Software Engineer Intern

- Designed and implemented an end-to-end UI using **React.js** and **Spring Boot** to visualize order history and force stuck orders in the fulfillment ecosystem, cutting troubleshooting stuck order time from **30 minutes** to **5 minutes**.
- Developed **infrastructure as code (IaC)** in **Terraform** and integrated Chewy's authentication protocols to create a dedicated **DynamoDB** table and high-throughput **AWS SQS** module for isolated scalable data management.
- Created **4 new RESTful API endpoints** and improved logging in **AWS CloudWatch** and **Splunk** for more granular data emissions and trigger forced order progression functionality.
- Led a **design review** comparing trade-offs between multiple frameworks and cloud services on a design document to architect a robust solution that met performance and scalability goals for two teams.

Fidelity Investments, Boston, MA

July 2023 – Dec 2023

Software Engineer Intern

- Built an **MVP** for a financial management platform by integrating designer-provided **Figma** design elements into a responsive web application built with **React.js**, **Express.js**, and **Node.js** for a new user demographic.
- Spearheaded development of an **NLP-powered** internal project matching tool leveraging **Named Entity Recognition** to process **250+ anonymized resumes** from HR, matching employees to projects based on skills.
- Designed and implemented scalable object-oriented databases in **PostgreSQL** and **MariaDB** for both projects, complete with documentation and **Entity Relationship Diagrams** to manage user profiles, skills, and interests.
- Applied the **design thinking framework** to identify and address pain points for a new user demographic by conducting extensive background research, hosting **12 moderated user interviews**, and doing competitive analysis.

Advanced Microsystems and Materials Laboratory, Boston, MA

May 2022 – June 2023

Researcher

- Formulated an algorithm to clean bulk .CSV breathalyzer sensor data using **Signal-to-Noise Ratio (SNR)** analysis to standardize data and nullify swings from real-world testing inconsistencies with ultrasensitive sensors.
- Designed and implemented a **logistic regression model** to diagnose Covid-19 from cleaned breathalyzer data, achieving an accuracy rate of **99%** on **127** ground truth test samples.
- Integrated the logistic regression model into the back end of a sensor-paired mobile application via **Android Studio**, enabling real-time Covid-19 diagnoses from breath samples.

PUBLICATIONS & RESEARCH

- **Novel, accurate pathogen sensors for fast detection of SARS-CoV-2** in the aerosol in seconds for a breathalyzer platform published in [Biosensors and Bioelectronics: X](#)
- **Alternator Coins** published in [MIT Mathematics](#), [Cornell University Library](#), and [Math Horizons Volume XXV](#)
- **Who Is Guilty?** published in [MIT Mathematics](#), [Cornell University Library](#), and [Recreational Mathematics Magazine](#)
- **PRIMES STEP Plays Games** published in [MIT Mathematics](#) and [Cornell University Library](#)

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, SQL

Frameworks: Spring Boot, React.js, Node.js, Express.js, JUnit

Tools: PostgreSQL, Docker, AWS (Lambda, ECS, DynamoDB, SNS, SQS), GraphQL, Jenkins, Postman, Git

Interests: Game Theory, Poker, Competitive Pokémon, Cooking, Road Trips