

Martin Lu

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EDUCATION

University of California, Berkeley

Berkeley, CA

Bachelor of Arts: Mathematics

Aug 2023 — May 2025

- Courses: Numerical Analysis, Advanced Linear Algebra, Combinatorics, Complex Analysis, Abstract Algebra
- GPA: 3.81, Major GPA: 4.0

University of California, San Diego

San Diego, CA

Bachelor of Science in Mathematics: Applied Mathematics, Minor in Computer Science

Aug 2021 — May 2023

- Courses: Computer Organization & Systems Programming, Data Structures & OO Design, Modern Algebra II

TECHNICAL SKILLS

Libraries: PyTorch, OpenCV, Numpy, Pandas, Scikit-learn, TensorFlow, FastAPI, Pydantic, Mockito, Guice

Languages: Python, Java, Javascript, Typescript, HTML, CSS, SQL, Matlab, LaTeX

Frameworks: Spring, React, React Native, Expo, Next.js, Vue.js, Webpack, Redux, Recoil.js, JavaFX, Tailwind

Developer Tools: Github Actions CI/CD, Smithy, Gradle, Linux, Git, Weights&Biases

Services: EC2, Lambda, DynamoDB, CloudWatch, VPC, CloudFormation, IAM, GCP, PostgreSQL, SQLite

Architecture: Object Oriented Programming, Object Oriented Design, RESTful, Load Balancing

EXPERIENCE

Amazon

Bellevue, WA

Software Development Engineer

Aug 2025 – Present

- Designed and deployed a full-stack warehouse operation configuration service with **DynamoDB** async read through caching, **Redis** in memory caching, and **React** UI, **Redux** state management, serving **26** warehouses, reducing operator configuration times by 78%.

Floz Quotr

Berkeley, CA

AI Research Software Development Engineer Intern

May 2025 – Aug 2025

- Built one-shot symbol-recognition engine (cross-attention + template matching) with Conformer architecture that achieves 80 % mAP at 1.5 second P99 latency, deployed **FastAPI** endpoint on **EC2** using **Pytorch** + **OpenCV**.
- Generated 500 k synthetic doc-symbol pairs (500 symbol classes, 300 domain-randomized backgrounds), boosting recall +20 pp versus real-only training and eliminating **1,500 h** of manual labeling.

Amazon

Seattle, WA

Software Developer Engineer Intern

June 2024 — Aug 2024

- Designed a fulfillment center flow telemetry service that processes 20 k TPS (**AWS EC2**, **ALB**, **DynamoDB**).
- Authored a **REST API** using **Spring** and **Smithy** returning 12 real-time windowed fulfillment center efficiency.
- Provisioned all services with **CloudFormation**, improving scalability, reducing deployment times 1 hr to 10 min.
- Wrote scalable unit and integration tests with **Mockito**, **Jest** and **Cypress**, achieving 100% test coverage.

Headway Technologies, Inc.

Milpitas, CA

Software Engineer Intern

June 2023 — Oct 2023

- Formulated a MILP batch-scheduling model, synthesizing from 3 OR papers; simulation on 12 mo fab data predicted 8 % queue-time reduction using **Python**, **Pandas** and **Pyomo**.
- Developed eight Spotfire UIs used by line managers, driving wafer-lot prioritization and reducing manual SQL report prep.

Phenomena Learning Inc.

Seattle, WA

Full-Stack Developer Intern

June 2022 — Sep 2022

- Created 7 interactive STEM educational experiences covering physics, math and chemistry topics.
- Shipped four UX features (drag-and-drop asset manager, undo stack, etc.) that cut lesson-creation time by 25%.
- Built a 2-D animation engine for block-based scripting using **Vue.js**, enabling non-tech educators to create hundreds animations without code.