

Alvin Huang

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Education

Northeastern University Sep 2024 – Dec 2026
Master of Science in Computer Science Seattle, WA
Courses: Data Structures, Algorithms, OOD, Database Systems, Distributed Systems, Operating Systems

Shanghai University Sep 2011 – Jul 2015
Bachelor of Arts in Economics (Awarded Scholarships - First Prize, Perseverance) Shanghai, China
Courses: Probability & Statistics, Linear Algebra, Calculus, Computer Fundamentals, Information Processing

Experience

Omron Automation Company Ltd. Jun 2020 – May 2024
Software Engineer Shanghai, CN

- Led the **end-to-end development** of the critical **order/checkout** flow, designing the backend **APIs (Express)** and building the responsive **UI (React/Next.js)** used by more than 10k customers daily.
- Enhanced perceived speed by tuning **MongoDB** indexes to cut **API TTFB** from 220ms to 90ms and implementing **UI skeletons** and **client-side caching (React Query)** to reduce page **LCP** by 20-30%.
- Improved code quality and developer velocity by building a library of reusable forms with **React Hook Form** and **Zod**, which standardized validation and led to a 30% reduction in client-side bugs.
- Implemented **Kafka Saga** workflows for inventory/order/payment **microservices** and provisioned environments with **Terraform** to enable **feature flags** and safe rollbacks at scale.

STS Certified Ltd. Aug 2015 – May 2019
Data Engineer Shanghai, CN

- Simplified data access for the front-end team by building a modern data service with **GraphQL (Apollo)** and **REST** APIs, which eliminated overfetching and streamlined queries for charts and tables.
- Addressed the root cause of API slowness by re-architecting the **PostgreSQL** schema with normalized hot paths and materialized views, cutting **p95** latency on **analytics endpoints** by 65%.

Projects

E-Commerce Microservices Distributed System April 2025 - June 2025

- Architected a full-stack, distributed e-commerce platform using **Next.js** for the front-end and decoupled microservices built with **Express.js** and **MongoDB**.
- Designed an event-driven backbone with **Kafka** for asynchronous messaging and secured all services with role-based access control (**RBAC**), reducing integration effort by 40%.
- Built and automated a **CI/CD** pipeline with GitHub Actions to deploy **Docker** containers to **AWS ECS**, which increased the deployment frequency by 2x.

Character Management System April 2025

- **Java MVC** app for managing celebrity profiles with search / filter / sort, add / remove wishlist and persistence supported by **JSON** (Gradle). Implemented **TDD** with unit tests and one-command build/run.

Scene-Based Music Recommender (Qualcomm Edge AI Hackathon) Mar 2025

- Integrated front-end and Spotify API using **Flask + React** and offline AI engine with **PyTorch** to build a complete website for music recommendations.

Skills

Languages: Java, TypeScript/JavaScript, Python, C/C++
Frontend: React, Next.js, React Query, React Hook Form + Zod, Jest, Playwright, HTML/CSS, Tailwind
Backend: Node.js (Express), Spring Boot, REST, WebSocket, JWT/RBAC, PostgreSQL/MySQL/MongoDB, Redis
DevOps: AWS (EC2, S3, ECS), Docker, Terraform, GitHub Actions

Certifications & Activities

AWS Certified Solutions Architect – Associate Certification Dec 2024 – Present
Teaching Assistant, CS5001: Python Programming, Northeastern University Sep 2025 – Present
Selected Participant of CodePath TIP102 – Algorithms & Coding Bootcamp Sep 2025 – Present