

# Songyan Zhao

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## SUMMARY

Seeking Software Engineer roles starting Nov 2025. Green card holder with 7+ years of full-stack experience. Skilled in Java (Spring Boot) and Python (Flask) for scalable distributed systems, RESTful APIs, and AWS services (Lambda, RDS, Bedrock). Experienced with PostgreSQL, Redis, MongoDB, and microservice architectures.

## EDUCATION

### •University of California, Los Angeles

Sept. 2023 - June. 2025

M.S. Computer Science, advisor: Prof. Nanyun Peng, GPA: 3.88/4.0

Los Angeles, CA

### •Carleton College

Sept. 2019 - Jun. 2023

B.A. Computer Science and Mathematics (double-majors); GPA: 3.86/4.0, Cum laude

Northfield, MN

## TECHNICAL SKILLS

**Languages:** Python, Java, C, C++/STL, SQL, HTML, CSS, JavaScript, Go, Scheme, TypeScript

**Frameworks:** Spring Boot, Flask, Node.js, Vue.js, Pytorch, Angular, Node.js, .Net, JQuery, TensorFlow, Amazon AWS

**Databases/Tools:** MySQL, PostgreSQL, MongoDB, Core Data, Redis, Docker, Dplr, Gradle, Maven, gdb

**Knowledge:** OOP/OOD, Design patterns (MVC, Factory), Large language model, Machine learning, Distributed System, Relational databases, RAG.

## WORK EXPERIENCE

### •XPOWER Manufacture Inc.: AI-Driven Vendor Recommendation & Scheduling System

May. 2025 - Aug. 2025

Software Developer Intern, Machine Learning,

Los Angeles

- Built Spring Boot chat backend with tokenized STOMP-over-WebSocket, Redis/PostgreSQL, Twilio fallbacks, S3 uploads, and mandatory AI-assistant members supporting JSON card messages.
- Shaped Project→Item→Room aggregates with role-scoped REST APIs and Redis-backed delay/archival jobs that keep unread counts, SLAs, and AI-triggered workflows accurate.
- Delivered the Ignite-based Expo client with per-role project/item/chat flows that render Figma-accurate UIs, isolate vendor modules, and surface AI assistant activity inline.
- Hardened the mobile data layer using OpenAPI-typed clients, Zustand chat state, and a SockJS/STOMP bridge that auto-resubscribes rooms and normalizes AI + human payloads with shared error toasts.

### •Research Assistant: AI-Lyric generation, code generation, music generation, and HCI

Sept. 2023 - Present

UCLA PlusLab, Los Angeles, US / C4DM, Queen Mary University of London, remote

Los Angeles

- Led the design of REFFLY, the first melody-constrained lyric revision model based on Llama 2, improving fluency and musicality by 25% over strong baselines. First-author paper accepted at NAACL 2025 (oral presentation).
- Co-developed VDebugger, a critic-refiner system for visual program debugging. Improved error localization and correction accuracy by 3.2% across six visual reasoning benchmarks. Published at EMNLP Findings 2024.
- Built an AI-assisted lyric writing interface based on REFFLY, with FastAPI (backend) and Vue.js + Vite (frontend); paper under submission to UIST 2025, a top-tier HCI venue.
- Built a Variational Autoencoder (VAE) using PyTorch for symbolic music generation with interpretable latent control by regularizing latent vectors, published in Machine Intelligence Research (Impact Factor: 6.4).

### •Baidu: Spring Boot based E-commerce Service Mobile APP

June 2021 - Sept. 2021

Software Developer Intern at Baidu International Department (Do-global)

Beijing, China

- Implemented Rest API via Spring MVC including user registration/login, product listing and search, cart management, order placement, payment processing, and user profile updates.
- Utilized Spring Data JDBC for PostgreSQL database integration, managing products, users, carts, and orders.
- Implemented Spring Security for session-based authentication and authorization.
- Used the Spring framework core technologies to loosely decouple all the components in the application.
- Developed the client side using ReactJS and Ant Design, enabling users to seamlessly add items to their shopping carts and place orders.

## PROJECTS

### •MiniSpotify

- Designed a Kotlin Spotify favorite app by fully leveraging Android Jetpack Library and Hilt Dependency Injection.
- Implemented the BottomBar and app navigation using the Jetpack Navigation component.
- Created a mock RESTful API with `json-server` and handled requests using Retrofit.
- Built the feed/album/favorite UI in Jetpack Compose following MVVM architecture.
- Enabled local cache for favorite features with Room Database, and integrated Google ExoPlayer for global music playback.

### •SocialAI: an AI-based social network

- Designed and implemented a social network web application using React JS.
- Integrated OpenAI's DALL-E 3 to assist users in creating and updating posts.
- Improved authentication with token-based registration, login, and logout via React Router v4 and server-side JWT.
- Developed and deployed a scalable web service in Go for post management on Google Cloud (Google App Engine).
- Deployed Elasticsearch on GCE to enable search for recent and personal posts.