

# Roy(Yi Liu)

## Software Engineer

+61 0413 157517 | [royliu810@gmail.com](mailto:royliu810@gmail.com) | Lane Cove, 2066

### SUMMARY

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- **Senior Java Backend Engineer** with 10+ years of experience architecting scalable applications, microservices, and distributed systems across enterprise environments
- **Full-stack solution architect capable** of designing and delivering end-to-end solutions from backend APIs to modern frontend interfaces using React, Vue.js, Next.js, and TypeScript
- **Performance optimization specialist** with proven track record of implementing innovative architectural solutions to enhance system efficiency and scalability
- **DevOps and cloud solution architect** proficient in CI/CD pipeline design using Docker, Jenkins, SonarQube, and Kubernetes orchestration on AWS cloud platforms (AWS-certified)

### TECHNICAL SKILLS

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**Core Technologies:** Java 8+, Spring Boot, REST APIs, Microservices, Python, JavaScript, TypeScript

**Testing & DevOps:** JUNIT, GitHub Actions, Jenkins, Git, Maven, JMeter, Sonar, ELK Stack, Grafana, Prometheus, Docker, Kubernetes

**Web Applications:** Vue, React, React Router, Nextjs, JavaScript, TypeScript, Tailwind CSS, HTML, CSS, WordPress

**Cloud & Database:** AWS, MySQL, HBase, FAISS, MongoDB, PostgreSQL

**Others:** Spring, Flask, Fast API, Redis, Kafka, DUBBO RPC, Elasticsearch, Prompt Engineering, Salesforce

### KEY SKILLS

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**Software & Application Design • Technical Architecture & Development • Performance Optimization • Microservices Implementation**

## PROJECT

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### Full Stack Developer & Solution Architect (Part-time)

Nov 2023—Present

#### KIDSFIRST, Sydney

- Led the end-to-end technical architecture and development of an AI-driven mobile evaluation platform. As the Solution Architect, designed and implemented scalable AWS-based backend architecture supporting the mobile application, including database schema design, RESTful API specifications, and service orchestration. Reviewed outsourced Java Spring Boot codebases, ensured compliance with system design standards, and collaborated closely with the founder, design team, and external developers to drive key technical decisions and align engineering direction with business goals.
- Developed a Python FastAPI backend for AI-evaluation workflows, using modular routers, dependency injection, and observability-focused middleware. Integrated OpenAI, Claude, Gemini, and AWS Bedrock models with advanced prompt engineering, prompt-guardrail enforcement, and PII-sanitization logic to support automated assessment and fully traceable LLM interactions through a clean REST architecture.
- Built and integrated a full-stack AI evaluation platform: Python/FastAPI services for model orchestration and scoring pipelines, consumed by a Next.js + TypeScript + TailwindCSS dashboard. Implemented RBAC with fine-grained access control, designed data collection and evaluation workflows, and built dynamic model configuration interfaces that enable real-time tuning of AI parameters and test datasets.
- Managed and deployed all platform infrastructure on AWS, encompassing EC2, ECS/Fargate, RDS, S3, SQS, SSM, and ELB, achieving zero-downtime deployments via GitHub Actions (OIDC-based CI/CD pipelines). This architecture improved release velocity, enhanced resilience, and eliminated long-lived credentials, ensuring both scalability and security across environments.

**Key Skills:** Solution Architecture, Python (FastAPI), Java (Spring Boot), RESTful API Design, React, Next.js, TypeScript, TailwindCSS, AI Integration (OpenAI, Claude, Gemini), Prompt Engineering, RBAC, AWS (EC2, ECS, RDS, S3, SQS, ELB, SSM, Bedrock), CI/CD (GitHub Actions + OIDC), Full-Stack & Cloud Infrastructure

## Software Engineer(Volunteer)

Nov 2024—Present

### Racial Justice Centre, Sydney

- Refactored and modernized the organization's website using Next.js, React, and TailwindCSS, implementing pixel-accurate UI components from Figma and deploying the production build on Vercel. Improved accessibility (WCAG-level contrast and keyboard navigation), responsiveness, and SEO structure. The redesigned, user-centric experience increased user engagement and enabled fundraising outcomes to scale by 10x.
- Administered and customized the Salesforce CRM system, managing lead pipelines, donor segmentation, and mass email marketing workflows. Integrated marketing campaigns with the redesigned website's donation flow, creating a seamless fundraising experience that improved donor engagement and operational transparency.
- Collaborated with graphic designers, fundraising coordinators, and stakeholders to align technical implementation with creative and funding objectives. Provided system administration and technical support for the organization's infrastructure, including DNS configuration and Vercel-based deployments, ensuring reliable and secure operations across all environments.
- Provided comprehensive IT support and system administration for organizational infrastructure

**Key Skills:** Vercel, Next.js, React, TailwindCSS, Salesforce CRM, JavaScript, HTML/CSS, DNS Management, Figma Integration, Digital Marketing Automation, System Administration

## PROFESSIONAL EXPERIENCE

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### SENIOR SOFTWARE ENGINEER

Nov 2021—July 2024

### Shanghai Ninerun Network Technology Co., Ltd., Shanghai

- Led architecture and technical roadmap for a secondhand collectibles platform serving 100,000+ active users. Mentored junior developers via 1:1s and five internal tech talks (observability, e-commerce search with Elasticsearch, LLM RAG, LLM fine-tuning, AI agentic systems). Ran weekly code reviews, consistently surfacing and driving remediation of 20+ fatal/critical issues per cycle, raising delivery consistency and maintainability.

- Delivered an agentic customer-service dialogue system—LLMs + vector databases + LangChain—deployed as Spring Boot (Java) and Flask (Python) microservices. Integrated external services including WeChat messaging APIs for automated message send/receive flows, and internal account information APIs for end-to-end workflow orchestration. Reduced human-handled inquiries by 50% per day while increasing response consistency and throughput.
- Migrated the core trading domain to an event-driven architecture, refactoring settlement and inventory flows to sustain 3M+ daily transactions; Integrated WeChat Pay and Alipay payment processing, including asynchronous notification handling and reconciliation flows. reduced code size by ~50%, achieved zero post-release defects, reduced test-phase defects by 75%, increased sprint velocity by ~50%, improved code readability, and authored comprehensive trading-order system documentation.
- Built a high-performance search service with real-time indexing and multilingual fuzzy matching, cutting search latency from 150ms to 20ms (-85%) and strengthening discovery and conversion paths.
- Established observability with 300+ custom metrics, layered alerting, and 40+ Grafana panels, enabling end-to-end visibility and reliability across, e-commerce, account, trading, search, and AI services, and cutting production incident response time to <5 minutes.

**Key Skills:** Java 19, Spring Boot, Microservices & Event-Driven Architecture, Concurrency & Performance Optimization; LLM Integration, Vector Databases, LangChain, Search System Design; Prometheus/Grafana, Monitoring & Alerting; Python (Flask/service), Team Leadership, CI/CD.

## SENIOR SOFTWARE ENGINEER

Feb 2018—Sep 2021

Shanghai Lianshang Network Technology Co., Ltd., Shanghai

- Designed and delivered core messaging infrastructure for an IM product serving 2M users. Built the API gateway, configuration center, distributed ID service, notification services, and mobile update mechanisms. Orchestrated a microservices architecture to sustain high-throughput messaging with robust routing and isolation.
- Architected and launched a high-performance API Gateway for 50+ microservices with authentication, rate limiting, routing, IP filtering, and traffic monitoring using Spring Boot + Dubbo. Achieved ~3,000 RPS per gateway instance while maintaining reliability at platform scale.

- Led cross-functional delivery of an end-to-end Content Moderation Platform covering multimedia censorship, content analytics, text filtering, risk control, and integrated manual review workflows. Optimized review tooling and message delivery paths, improving manual audit efficiency by 3–4×.
- Promoted to team lead of a 3-engineer moderation group in an Agile, fast-paced environment with tight deadlines; ran weekly sprint planning, milestone tracking, and code reviews, aligning engineering output with product and risk goals across an 8-developer collaboration scope.

**Key Skills:** Java, Spring Boot, Dubbo/RPC, API Gateway, Microservices, Distributed Systems, Content Moderation, High-Throughput Processing, Team Leadership.

## SOFTWARE ENGINEER

Nov 2015–Sep 2017

Bilibili Inc., Shanghai

- Designed and built Java microservices for the PGC platform serving 60M DAU, supporting high-volume video streaming with scalable, fault-tolerant components. Diagnosed and resolved critical backend issues to protect stability and performance at peak load.
- Refactored the episode-update notification system to a scalable microservice architecture using Spring Boot and Kafka. Designed topic partitioning, producer/consumer flow control, and message schema to handle surge traffic. Reduced delivery time from 12 hours for 500K users to 10 minutes for 4M users (~720×) while maintaining stable throughput and latency.
- Implemented a real-time data processing pipeline for PGC analytics with Kafka + Apache Storm + HBase, enabling watch-history tracking and preference analysis over high-throughput streams for faster product insights.

**Key Skills:** Java 8, Spring Boot, Kafka, Apache Storm, HBase, Microservices & Distributed Systems, Real-time Data Processing, Performance Optimization

## EDUCATION

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Bachelor of Science (Computer science)

• Computer science • Shanghai University • China • 2011

## MISCELLANEOUS INFORMATION

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Nationality: Chinese

Languages: Mandarin & English

Availability: Immediate