

# YIFEI WANG

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## Education

### University of California, Irvine

09/2024 – 12/2025

Master of Software Engineering; GPA: 4.0 / 4.0

Irvine, CA

Courses: Building Scalable Distributed Systems, Computer Systems, Cloud Technologies, Advanced Software Development

### Southwest Jiaotong University

09/2019 – 06/2023

Bachelor of Engineering in Civil Engineering

Chengdu, China

Courses: Data Processing and Analysis, Python Programming, Database System, Data Structures and Algorithms

## Skills

**Languages:** Java, JavaScript, TypeScript, Python, Go, Kotlin, C++, C, HTML/CSS, SQL, Swift

**Cloud Technologies:** AWS, GCP, Azure, Docker, Kubernetes, Message Queues (Kafka, RocketMQ, RabbitMQ)

**Frameworks and Platforms:** Spring Boot, React, Node.js, Next.js, Django, Hibernate, Flask, FastAPI, Microservices

**Databases:** MySQL, PostgreSQL, MongoDB, NoSQL

**Tools:** Git, JUnit, Figma

## Experience

### Software Engineer Intern

07/2025 – Present

SubMarts Inc - B2B/B2C e-commerce marketplace specializing in subscription services

Irvine, CA

- **Order Management System:** Developed ongoing order management **Spring Boot APIs** handling subscription lifecycle tracking, implementing multi-status order processing with complex data aggregation across **8+** database tables and dynamic order action resolution for cancellations, returns, and refunds.
- **Real-time Notification Service:** Developed real-time user notification service using **Redis message queuing** and **RPC-based APIs**; implemented event-driven workflows for order state changes, achieving **99.5%** delivery success rate.
- **Third-party Integration:** Implemented **OAuth2** authorization flows with **PKCE** enhancements for integrating **Stripe Connect**, enabling secure third-party billing and reducing manual reconciliation workload by **85%**.
- **API Development Integration:** Built review and rating **RESTful API** endpoints with **Hibernate** ORM, implementing duplicate prevention logic through database constraints and custom validation; developed rating aggregation functions for weighted merchant scoring algorithms.
- **Cloud Infrastructure Optimization:** Optimized **AWS** deployment, configuring **EC2** auto-scaling groups and **RDS** Multi-AZ setup that **reduced infrastructure costs by 30%** compared to fixed instances while ensuring **zero-downtime** processing for **high-volume** subscription orders.

### Graduate Student Researcher

07/2025 – Present

Institute of Transportation Studies, UCI | Python, CLI Tools, Workflow Automation, Data Integration

Irvine, CA

- **System Integration:** Integrated and configured transportation modeling systems for cross-platform compatibility, resolving **Python** environment conflicts and implementing **pandas** data pipeline fixes to enable seamless simulation execution on research infrastructure.
- **Workflow Automation:** Diagnosed and resolved complex workflow failures in multi-scenario simulation pipelines, developing **Python CLI** diagnostic tools with **argparse** and **YAML** configuration validation to streamline **script** automation and **pandas** data preprocessing workflows.
- **Debugging Framework:** Implemented comprehensive debugging framework using **pytest** validation and **debugpy** remote debugging, creating systematic troubleshooting procedures that reduced system setup time by **50%** and established reproducible simulation environment for ongoing research.

## Projects

**PromoMall - Marketing Platform Lottery System** | Java, React, Spring Boot, MySQL, Redis, Kafka, ElasticSearch

- **System Architecture:** Architected **DDD-based** microservices lottery system handling **5,000-8,000 TPS** peak traffic, implementing domain-driven service boundaries across rule engine, lottery strategy, activity management, and prize distribution modules to support rapid business iteration and reduce development costs.
- **Performance Optimization:** Optimized high-concurrency inventory management from database row-level locking to **Redis** sliding block locks, eliminating lock contention bottlenecks; integrated **Kafka** async messaging to decouple lottery and prize distribution workflows, achieving **sub-100ms** response times with zero overselling.
- **Data Infrastructure:** Developed custom **database sharding middleware** for unified routing and **Redis** inventory partitioning, supporting differentiated sharding strategies and sliding inventory blocks; built reusable **Spring Boot** components for horizontal scalability across multiple promotional campaigns.
- **Rule Engine Design:** Implemented decentralized rule engine using Composite and Factory patterns with binary tree logic for dynamic user segmentation (demographics, risk control, A/B testing), **reducing repetitive development overhead** and **enabling configurable rule orchestration** for operations teams.