

Wylie Wang Senior Software Engineer

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Summary

Senior Software Engineer specializing in distributed systems, payments infrastructure, and financial platforms. Experience designing and building billing systems, payout platforms, financial ledgers, and event-driven microservices. Skilled in Java, Kotlin, TypeScript, PostgreSQL, Kafka, Redis, and AWS, with a focus on building reliable, scalable, and maintainable backend systems.

Professional Experience

Senior Software Engineer, Payments Platform, Airbnb

04/2023 – Present

Key Project: Subscription Billing Platform

- Worked on the backend systems that handle recurring subscriptions, invoicing, and payment collection.
- Designed a monthly billing workflow that generates invoices and charges customers. Moved invoice generation from a synchronous process to an asynchronous workflow using Kafka to reduce peak load on the primary Postgres database.
- Implemented payment retry and dunning logic for failed payments and added idempotency keys to prevent duplicate charges during retries.
- Added new database indexes and performed a backfill for historical invoices to support new billing queries without locking tables during peak hours.
- Worked with finance teams to ensure invoice and payment data matched financial reporting requirements.

Tech: Java, Kotlin, PostgreSQL, Kafka, Redis, AWS

Key Project: Financial Ledger & Reconciliation System

- Built a ledger service to track billing events, payments, refunds, and payouts.
- After a production incident caused by duplicate ledger entries during a retry storm from a downstream payment processor, introduced idempotent write paths and reconciliation jobs to detect and fix ledger mismatches.
- Designed ledger tables and balance calculation logic using PostgreSQL and ensured all ledger writes were append-only.
- Built internal reconciliation jobs that compared ledger data with external payment processor reports and generated discrepancy reports for finance.
- Wrote design docs and led design reviews for ledger service architecture and data model.

Tech: Java, PostgreSQL, Redis, Kafka

Key Project: Global Payout Processing System

- Worked on services responsible for sending payouts to hosts and tracking payout status.
- Implemented payout retry workflows and failure handling for cases where bank transfers or payment processors failed.
- Built payout status tracking so support and operations teams could trace where a payout was stuck in the pipeline.
- Improved payout success rate by refining retry timing and routing logic between different payment processors.
- Helped investigate payout incidents and added better logging and tracing for payout workflows.

Tech: Java, Kotlin, PostgreSQL, Kafka, AWS

Software Engineer, Backend / Distributed Systems, Lyft

06/2018 – 04/2023

Key Project: Ride Billing & Fare Calculation System

- Worked on backend services that calculated ride fares, fees, promotions, and driver payouts.
- Built services that processed trip events and generated billing records after trips completed.
- Investigated issues where duplicate trip events caused duplicate charges and implemented idempotent event processing.
- Optimized several slow MySQL queries and added indexes after trip volume increased and we started seeing slow queries during peak hours.
- Built internal tools used by operations to reprocess trips and fix billing issues.

Tech: Python, Java, MySQL, Redis

Key Project: Trip Event Processing Platform

- Helped migrate parts of the trip processing workflow from synchronous services to an asynchronous event-driven system using Kafka.
- Built consumers that processed trip events such as trip started, trip ended, and payment completed.
- Implemented retry handling and dead-letter queues for failed event processing.
- Added monitoring and alerts for event processing delays and failures.
- This system became the foundation for several downstream systems including billing, notifications, and analytics.

Tech: Kafka, Python, Java, PostgreSQL, AWS

Skills

Languages — Java, Kotlin, TypeScript, Python, SQL

Frontend — React, Next.js, TypeScript, HTML, CSS

Backend — Node.js, Spring Boot, FastAPI, REST APIs, Microservices

Databases — PostgreSQL, MySQL, Redis, Elasticsearch

Distributed Systems — Kafka, Event-Driven Architecture, Idempotency, Workflow Systems

Cloud & DevOps — AWS, Docker, CI/CD, Monitoring, Logging, Tracing

Financial Systems — Billing, Payments, Payouts, Ledger Systems, Reconciliation

Other — System Design, Scalability, Reliability, Performance Optimization

Education

B.S. in Computer Science, University of Virginia