

Zhuoran Liu

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Experience

Uber, Software Engineer, Data Infrastructure and Platform

- Real-Time Analytics platform over Apache Pinot, a realtime distributed OLAP database
- Developed a Pinot MCP Server and built Multi-Agent system on top of it, automating table onboarding and query troubleshooting for users via Slack, internal chatbot, and Claude Code.
- Re-architected customer team (Fulfillment) tables on dedicated Pinot clusters with Pinot Upsert Features, reducing costs by 50% and improving 10X improvement in query latency (10s → 1.5s).
- Optimized Logging clusters (50%+ of total Pinot deployment) node sizing for NUMA (Non-Uniform Memory Access), saving 200TB memory and \$3.3M annually.
- Introduced Pinot Upsert OSS features and released into Uber.
- Streaming Platform over Apache Kafka, a distributed streaming engine
- Modernized Kafka Python Producer & Heatpipe client: introducing context propagation, secure producer, topic discovery features, metrics and logger upgrade, unit test coverage from 30% to 90%+.

Sunnyvale, CA
Jan 2025 – present
1 year 2 months

Confluent, Software Engineer, Cloud Infrastructure and Platform

- Cloud Resource Management — orchestrate and manage resource lifecycle on Confluent Cloud
- Used Spring Boot to develop a resource pooling service to orchestrate confluent cloud resources, including Network, Kubernetes, Kafka and Flink cluster, with 300+ resources for internal usage like e2e system tests.
- Implemented complete resource lifecycle management within the service, storing metadata on RDS, and handling resource garbage collection.
- Deployed the service on Kubernetes cluster using Halyard and Helm charts. Utilized ElasticSearch and Datadog for service monitoring and maintenance.
- Application Developer Platform — multi-cloud infrastructure management service
- Implemented runtime library which is for building microservices in golang, using uber-go/fx as dependency injection, helping the service owner to integrate the various platforms (config management, observability, security, etc) into a single integration point.
- Developed runtime network with service mesh as a dedicated layer of infrastructure that facilitates service-to-service communication within K8s network. Used Istio and Gloo mesh for implementation.
- Introduced new test strategy from hourglass to pyramid test distribution. Onboarded the component test and contract test (with pact broker) into 200+ cloud microservices.

Bellevue, WA
Mar 2023 – Dec 2024
1 year 10 months

Snowflake, Software Engineer Intern, Cloud Compute

- Task Resource Profiler Library — profile scheduled tasks resource usage into metrics and allocate resource.
- Async Task Execution Framework — handle asynchronous execution of scheduled Snowflake tasks.

San Mateo, CA
May 2022 – Aug 2022
4 months

StubHub, Software Engineer Intern, Payments

- Transaction Service for Payments Platform — manage transaction activity for sellers & buyers.
- Payment Fraud Order Evaluation Service — manage transaction activity for sellers & buyers.

Shanghai, China
Mar 2021 – July 2021
5 months

Education

Carnegie Mellon University, Information Networking
• GPA: 3.70/4.00

Pittsburgh, PA
Sept 2021 – Dec 2022

University of Electronic Science and Technology of China, Computer Software Engineering
• GPA: 3.95/4.00
• Elite Program

Sichuan, China
Sept 2017 – July 2021

Skills

Programming Languages

Technologies

Frameworks & Tools