

Zhuoran Liu

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EXPERIENCE

- **Uber** –*Data Infrastructure and Platform, Software Engineer* Sunnyvale, CA | Jan. 2025 – Present
 - **Real-Time Analytics platform** -over Apache Pinot, a realtime distributed OLAP datastore
 - * 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%+.
- **Confluent** –*Cloud Infrastructure and Platform, Software Engineer* Bellevue, WA | Mar. 2023 – Dec. 2024
 - **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. Use 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.
- **Snowflake** –*Cloud Compute, Software Engineer Intern* San Mateo, CA | May. 2022 – Aug. 2022
 - **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
- **StubHub** –*Payments, Software Engineer Intern* Shanghai, China | Mar. 2021 – Jul. 2021
 - **Transaction Service for Payments Platform** -manage transaction activity for sellers & buyers
 - **Payment Fraud Order Evaluation Service** -manage transaction activity for sellers & buyers

EDUCATION

- **Carnegie Mellon University** Pittsburgh, PA
 - *M.S. in Information Networking; GPA: 3.70/4.00* Sept. 2021 – Dec. 2022
- **University of Electronic Science and Technology of China** Sichuan, China
 - *B.E. in Computer Software Engineering, Elite Program; GPA: 3.95/4.00* Sept. 2017 – Jul. 2021

SKILLS

- **Programming:** Java, Golang, Python, C/C++, Kotlin, JavaScript, HTML, CSS, Scala, C#, Swift, PHP, Rust, SQL
- **Tech:** Distributed System, Cloud, Agent, MCP, Microservice, Machine Learning, LLM, Database, Data Stream, Network
- **Framework & Tool:** Kafka, Pinot, Flink, Docker, Kubernetes, Spring Boot, ElasticSearch, AWS Tools