

LILI LIANG

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EDUCATION

Carnegie Mellon University	Mountain View, CA
<i>Master's degree, M.S. in Software Engineering</i>	08/2024 – 12/2025
Northeast Normal University	Changchun, China
<i>Bachelor's degree, B.Eng. in Software Engineering</i>	09/2017 – 06/2021

TECHNICAL SKILLS

Programming Languages: Go, Java, C/C++, Python, JavaScript, SQL, HTML/CSS, Markdown

Frameworks: RPC(Thrift), RocketMQ, Kafka, Node.js, Express.js, SpringBoot, React, Vue.js, MyBatis

DevOps and Cloud Tools: Docker, Kubernetes, Jenkins, GitHub Actions, Grafana, Swagger, REST API, AWS, GCP

Databases and Other Tools: MySQL, Redis, MongoDB, Elasticsearch, Hive, ClickHouse, Git, Linux, \LaTeX

WORK EXPERIENCE

TikTok	Shenzhen, China
<i>Backend Software Engineer Full-time, Global E-Commerce Fulfillment Group</i>	07/2021 – 10/2023

- **Merchant Fulfillment:** *Core developer.* Led the development of multi-end merchant fulfillment capabilities, successfully launched 23+ MVP and large-scale cross-functional projects, supporting the growth of global daily order volume from 56k to 10 million.
- **Fulfillment OpenAPI:** *System owner.* Restructured historical architecture and resolved 16 critical bugs, optimizing system capabilities. Led the establishment of interface change standards, providing robust OpenAPI fulfillment capabilities for ISV partners.
- **Stability Construction:** *System owner.* Developed and implemented comprehensive troubleshooting tools, including a full-link reporting SDK, automated data cleaning pipelines, and a full-scenario data dashboard. These tools achieved 80% trace coverage and a monthly average manpower saving of 3.5 person-days.
- **Achievement**
 - **Exceed Expectations (E) Performance Rating and promoted (Top 1%)**
 - Global E-Commerce *Spot Bonus* Award, Outstanding Job Performance

PROJECT EXPERIENCE

Proxy Lab - Native Multi-threaded Web Proxy Server in C, @CMU CSAPP	11/2024
<i>Independent Project. Skills: C, Sockets, System I/O, Concurrency, POSIX Threads, LRU Cache, GDB</i>	

- Developed a fully native multi-threaded web proxy using low-level system I/O (e.g., socket, accept, read, write), handling HTTP/1.0 requests without external libraries.
- Handled concurrent client requests using POSIX Threads, ensuring thread-safe operations with mutex locks and condition variables to prevent race conditions.
- Implemented a LRU cache to reduce redundant server requests, ensuring efficient memory utilization and optimized response times through doubly linked lists and eviction policies.
- Debugged the proxy with GDB and Valgrind, identifying and resolving memory leaks, segmentation faults.
- **Result:** Achieved **full marks** by passing 51 automated tests in PxyDrive with full points in concurrency, cache correctness and system-level stability.

Fulfillment Decision System and Configuration SDK Project, @TikTok	09/2022 – 11/2022
<i>Project Owner. Skills: Go, KiteX, RocketMQ, SDK, RPC(Thrift), Protocol Buffers, Metrics, Grafana</i>	

- Designed and built a scalable action decision system using Go and KiteX, enabling dynamic business rules configuration, grayscale release, and exception rollback.
- Transformed 25 business rules into rule expressions for the MVP, creating a rule engine for logical evaluations.
- Integrated TCC (Toutiao Config Center) to simplify multi-region configuration management, ensuring global disaster recovery and real-time updates, reducing operational risks in a distributed environment.
- Built an action verification service with SDK and RPC (Thrift) integration to ensure high availability and fault tolerance, preventing single-point failures across services.
- **Result:** Achieved 1.1k QPS on SDK and 115 QPS on RPC for B-side business within 3 months of launch.