Lili Liang

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Education

Carnegie Mellon University California, USA
Master of Science in Software Engineering 08/2024 – now
Northeast Normal University Changchun, China
B.Eng. in Software Engineering, Overall GPA: 88.16/100 09/2017 – 06/2021

Work Experience

ByteDance (TikTok's parent company) Guangdong, China
Backend Software Engineer, Full-Time, TikTok E-commerce Fulfillment Platform 07/2021 – 09/2023

- **Merchant Fulfillment**: supported the construction of the multi-end capabilities for merchant fulfillment as a core developer in the team; participated in various MVP and large-scale horizontal projects.
- **OpenAPI**: reviewed the historical architecture, tracked online issues, identified and promptly addressed 16 historical bugs; based on software development principles, took the lead in formulating interface change specifications.
- **Stability Construction**: took responsibility for the construction of business issue troubleshooting tools and success rate dashboards; completed infrastructure projects, including the full-link tool reporting SDK, data cleaning, and full-scenario data dashboard, etc.
- **Achievement**:
  - *Exceed Expectation* Performance Promotion (top 1%)
  - Global E-Commerce *Spot Bonus* Award (Outstanding Job Performance, top 3%)

Project Experience

Fulfillment Decision System and Configuration SDK Project, ByteDance 09/2022 – 11/2022

Aimed at designing a decision system that can encapsulate business decision logic, achieve configurability, and support a gray release mechanism and abnormal rollback.

- **Rule Engine**: focused on designing a rule engine that incorporates rule factors, rule expression strategies, and rule decisions, which is used for supporting the differential handling of business rules and facilitating decision-making.
- **Rule Configuration**: considered the minimal cost of implementing the MVP version, opting to use the lightweight TCC components for rule-based configuration management.
- **Action Verification Service**: designed an action verification service based on the rule engine, which could offer two integration methods, SDK and RPC, preventing single-point issues.
- **Result**:
  - converged merchant fulfillment business decision-making logic and supported the low-cost integration of new rules in the future.
  - 3 months after being launched, access to SDK QPS: 1.1k, access to RPC QPS: 115 (B-side business).

Research

Solving Diversified Top-k Weight Clique Search Problem 07/2020 – 09/2020

Research direction: algorithm solution

- Proposed two encoding strategies for solving the diversified top-k weight clique search (DTKWCS) problem and two specific practical applications of DTKWCS.
- Conducted experiments to show that our encoding strategies are competitive, allowing to promote the applications of the DTKWCS problem, such as community detection, spectrum sharing, advertising placement, etc.
- **Published** in JCR Q1 journal: ***Science China Information Sciences***.

Research and Implementation of Community Friend Recommendation System Based on K-Plex

Thesis Project *Technologies: Vue. Js, SpringBoot, Redis, Shiro* 12/2020 – 04/2021

- Designed a heuristic search algorithm strategy for maximal enumeration of K-plex by improving the fast enumeration algorithm for large K-plex proposed by Conte et al.
- Conducted experiments to verify the effectiveness of the algorithm.
- Achieved the architecture design and system implementation of the community friend recommendation system based on this algorithm model.

Technical Blog

- [CSDN]: output **60+** algorithm and engineering technical blogs, got **570,000+** views.
- [GitHub] **NENU-Courses** course guide open source project initiator.
- [Personal Blog Site]: Blog website built by myself.
  - Deployed the site in two lines; built CDN based on JsDelivr to optimize resource loading speed; applied site traffic analysis tools; implemented search engine inclusion (SEO).

Awards and Honors

- *Exceed Expectation* Performance Promotion, ByteDance (top 1%) 2023
- Global E-Commerce *Spot Bonus* Award, ByteDance (Outstanding Job Performance, top 3%) 2022
- First Prize Scholarship, Outstanding Student Award, Practical Innovation Scholarship(top 7%) 2021
- *Innovation Star* Award, NorthEast Normal University(top 3%) 2020
- President Scholarship, Outstanding Student Award (top 5%) 2020
- First Prize and Team First Prize in the "National University Green Computing Competition" (top 1%) 2018

Publications

- Junping Zhou, Chumin Li, Yupeng Zhou, Mingyang Li, **Lili Liang**, and Jianan Wang, "Solving diversified top-k weight clique search problem", in ***Science China Information Sciences*** and ***HSI 2020(conjunction with IJCAI 2020)***, [PDF]

Skills

Programming Languages: Golang, Java, C/C++, Python, JavaScript, HTML/CSS, SQL(ranked by proficiency)
Tools and Frameworks: Git, LaTeX, RPC(Thrift), SpringBoot, MyBatis, RocketMQ, Redis, TensorFlow