

LANG LIU

▪ Chicago, Illinois ▪ 8722799937 ▪ langinteger@outlook.com ▪ <https://blog.langinteger.com>

SUMMARY

With over 5 years of experience in the software industry, I have honed my expertise in API design, distributed systems, database management, service monitoring, and performance optimization. I am committed to delivering high-quality software solutions and leveraging my diverse skill set to drive innovation and organizational success, which contains but is not limited to the areas:

- Programming Language: Java, Dart (fluent), Python, Bash (intermediate), C#, Swift, Javascript, C (working knowledge)
- Frameworks: Spring Framework, Spring Cloud, Vert.x, Quarkus, Hibernate, Mybatis, Java EE, React, Flutter, Django
- Middleware: Zookeeper, Consul, Hazelcast, Kafka, RocketMQ, Nacos, Nginx, MySQL, PostgreSQL, Redis, Skywalking
- DevOps: Git, Gradle, Maven, Junit5, Spock, TestContainer, Docker, Kubernetes, Jenkins, ELK, Prometheus, AWS, GCP

WORK EXPERIENCE

PRESENCE INC. - A STARTUP INVESTED BY WORLD-CLASS VENTURE CAPITAL

April 2022 – July 2023

Full-Stack Engineer; Proudly be one of the first 10 employees. Where it demonstrated the meaning of a One-man hero

- Developed backend service clusters for the Metaverse social app from inception to launch, supporting over 10k daily users.
- Oversaw agile development process and CI/CD platform, ensuring the weekly service deployments to AWS/GCP and app publishing on Google Play and Apple Store. Achieved over 2x efficiency increase for releasing new features to customers.

TENCENT TECHNOLOGY (SHENZHEN) COMPANY LTD. - A WORLD-LEADING TECH COMPANY

July 2021 – April 2022

Senior Engineer; Cloud & Smart Industries Business Group. Where I was evaluated by handling high-volume requests

- Implemented Reversed Instance, positioning Tencent Cloud as a formidable competitor to AWS regarding pricing models.
- Optimized legacy code, resulting in a 20x reduction in prod database pressure and improvements in application availability.

WANGUOYOU (SHENZHEN) TECHNOLOGY COMPANY LTD. - A SOFTWARE STARTUP

July 2018 – July 2021

Software Engineer (Software Manager since Dec 2019), Technology Department. Where software engineer career began

- Promoted to software manager after 1.5 years, led the tech department in developing and launching a B2B online travel agency platform. Achieved 10x improvement in internal process efficiency, optimizing processes from flight bookings to financial operations. Laid the foundation for a decade of company-wide success and growth in the coming future.
- Integrated APIs with over 10 suppliers of flights, trains, and hotels, enhancing product offerings of the system successfully.

TEACHING & RESEARCH

Teaching Assistant of CS351 System Programming, Computer Science Department, Illinois Institute of Technology

- Collaborated with Dr. Melanie Corneliuss to assist in course instruction, and grading during the Fall 2023 semester.

Researcher of Bricks: A Configurable Coordination Service with Multiple Consistency Models

- Collaborated with Professor Francis Leung to implement a Zookeeper-compatible middleware named Bricks, enabling developers to utilize in-memory data stores with simultaneous support for Causal, Sequential, LWSR, and Linearizability consistency models at the same time. It is also a successful practical application of FOP (Feature Oriented Programming).

EDUCATION BACKGROUND

ILLINOIS INSTITUTE OF TECHNOLOGY, COLLEGE OF COMPUTING

Master of Computer Science, GPA: 4.0/4.0

Expected Graduation: Dec 2024

CENTRAL SOUTH UNIVERSITY, SCHOOL OF CIVIL ENGINEERING

Bachelor of Civil Engineering, GPA: 86.89/100

Graduated: Jun 2017

BLOGS & OPEN SOURCE CONTRIBUTIONS

[AN ODESSEY OF PUSH NOTIFICATION TO UNTIY MOBILE APP](#)

- Discussed integrating push notifications into a mobile app developed in Unity, with APNS and FCM.
- Highlighted challenges including extracting payload, ensuring idempotency, and dealing with Android 13 and Unity bugs.

[AN ODESSEY OF SOLVING ONLINE DATABASE PROBLEMS](#)

- Introduced all the efforts taken to solve the database alerts in the system of our production environment.
- Root causes varied from a specific billing logic, queries from a legacy system, and mismatched indexes for order tables.

[TUNING DEVELOPMENT PROCESS WITH FLYWAY](#)

- Made SQL scripts of the team version-controlled to protect data structure integrity among various environments.
- Solved flyway's conflict with the init SQL in projects' integration tests.

[AN ODESSEY OF SOLVING MEMORY LEAK PROBLEM](#)

- Observed a serious memory leak problem in one of our production applications and tried to find the problem source.
- Summarized a common pattern for solving the memory leak problem of JVM-based applications.

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SO TOP ANSWER - VALIDATION OF A LIST OF OBJECTS IN SPRING

- Read the source code of the Spring framework to find a solution targeting the question with a detailed explanation.
- Guess 90 percent of Spring framework users once faced the problem, but it's strange that no one got that deep earlier.

VERT.X REDIS CLIENT - A Reactive Redis Client Based on Vert.x

- Improve the [reconnection mechanism](#), taking the normal 4-way-handshake end of the TCP connection into consideration.
- [Fix a bug in mget command](#) when connecting to the Redis cluster with multiple keys in different slots.

V-Swagger - A Productivity Tool for Frontend and Backend Developers

- A VS Code extension that is able to parse and preview Swagger/OpenAPI definition with Swagger UI.