DUAN LI

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EDUCATION BACKGROUND

National University of Singapore   **Aug 2023 - Feb 2025**
Master of Computing
- GPA: 4.6 / 5.0 (Top 10%)
- Lectures: Data Structures and Algorithms, Big Data Systems for Data Science, Computer Systems and Applications, Stream Processing, Database Modelling and Programming, Software Engineering on Application Architecture

Southeast University   **Aug 2018 - Jun 2022**
Bachelor of Automation (Intelligent Information Processing)
- GPA: 3.76 / 4.00 (88.7 / 100) (Top 5%)
- National patent: Dental veneer model generation and thickness measurement method based on oral scanning point Cloud

PROFILE SUMMARY

Portfolio: https://liduan2000.github.io
Github: https://github.com/liduan2000
Linkedin: https://www.linkedin.com/in/duan-li-14b0bb216

CORE COMPETENCIES

- **Programming Languages**: Proficient in Python, C/C++, Java, and Golang with a strong understanding of low-level programming concepts, including data structures, multithreading, network and operating system.
- **Software Development**: Extensive experience in building microservices and distributed systems using frameworks and tools such as Spring Boot, Flask, Gin and Redis. Skilled in working with various databases, including MySQL, PostgreSQL, and MongoDB. Familiar with high-performance distributed systems (Hadoop, Spark, Kafka, Flink).
- **Cloud & Containerization**: Hands-on experience with Docker, Kubernetes, AWS, and Prometheus for building and monitoring large-scale systems.
- **System Design**: Expertise in designing low-latency, high-performance, and reliable systems. Strong background in REST APIs, Linux-based development, Nginx configuration, and multi-threaded architectures.
- **DevOps & Tooling:** Experienced in CI/CD pipelines, shell scripting (Bash), Git version control, and Agile methodologies.
- **Soft Skills:** Excellent problem-solving abilities, clear communication, clean coding practices, and a passion for tackling complex challenges with a collaborative mindset.

PROFESSIONAL EXPERIENCE

Tencent Games   **May 2024 - Sep 2024**
Software Development Engineer - Intern
- Deeply evaluated various distributed frameworks (Nacos, Consul, Zookeeper, Eureka, Etcd, etc.) and strategically selected Consul for unified service registration, discovery, health check and Service Mesh(sidecar) on Kubernetes environments. Utilized Consul KV for storage of service configuration, routing, and weight information.
- Redesigned Tencent's load balancing agent and configuration center agent, focusing on high-performance, low-latency operations. Implemented a multithreaded mechanism for real-time updates of configuration and routing data from Consul to the configuration center agent, shared memory, and the load balancing agent. Led solution evaluation, development, self-testing, and benchmark testing. Successfully deployed across both CVM and Kubernetes environments.
- Implemented mTLS(HTTPS mutual authentication) on load balancers in TCC, AWS, GCP, and Azure, replacing manual IP whitelisting. Tested the functionalities of mTLS, certificate revocation, periodic certificate rotation, and multi-certificate chains. Additionally, developed a backup strategy by leveraging Cloud LB to forward Layer 4 requests to an Nginx server, where mTLS functionalities were configured on Nginx.

Monetary Authority of Singapore   **Dec 2023 - Feb 2024**
Software Development Engineer - Intern
- Developed and implemented a customized Umbraco Content Management System (CMS) tailored for financial business management, featuring MySQL integration and advanced access control. The solution provided seamless content management capabilities for other modules within the platform and was successfully deployed in the latest release of the financial management system, now fully operational.

Intel Corporation   **Jul 2022 - May 2023**
System Software Development Engineer
- Developed a high-performance Linux kernel-space device management driver and a user-space device simulator, using interrupts to verify the behavior of the device simulator. Led solution formulation, architecture design, module development, and integration testing. Ensured stable operation of the driver on next-generation server CPUs (GNR).
- Optimized data-parallel algorithms for Intel's high-performance GPU architecture using oneAPI, rewrote critical sections of the parallel algorithms with SYCL to ensure low-latency, high-throughput execution, achieving a 5-10x reduction in runtime on PVC GPUs. Analyzed assembly code of parallel algorithms to propose impactful enhancements for the next-generation PVC GPU compiler, driving further optimization and efficiency.

Tencent Technology   **Feb 2022 - May 2022**
Software Development Engineer - Intern
- Contributed to the development of the Cloud Xiaowei Open Platform and voice assistant microservice modules, utilizing the trpc-go framework for service communication. Developed protocol integrations for speech recognition, semantic parsing, and speech synthesis modules. Additionally, managed Redis data migration and cluster deployment.
- Refactored the sports open capability module from C++ to Go services. Spearheaded the project for visually impaired programmers, coordinating with company representatives to provide Python cloud development tutorials on the open platform, while gathering feedback on accessibility support for the Cloud Xiaowei Open Platform.

Alibaba Group   **Jun 2021 - Aug 2021**
Software Development Engineer - Intern
- Developed a lightweight JavaScript compilation engine backend for the Taobao app, focusing on optimizing performance. Led the development of instruction bytecode and JIT compilation modules, achieving a 10% increase in execution speed and enhancing resource efficiency by 7%.
- Developed the file clean-up module for online bypass repair using Java, overseeing the processing of handheld local and platform-delivered files in real-time, aligning with dynamic business push data to achieve seamless hot repairs, resulting in a 15% improvement in repair response times.

PROJECTS

OfferAI – Job Seeking Assistant   **May 2024 - Present**
Software Developer
- Link: https://offer-ai.net
- Tech stack: Python, Flask, MySQL, Redis, MongoDB, Kafka, Nginx, Docker, REST APIs, JWT, OpenAI.
- A job-seeking assistant platform allowing users to register and utilize AI-based features such as resume enhancement, job recommendations, interview preparation, cover letter generation, and job applications. It also provides comprehensive job application tracking, job search, and matching functionalities.
- Responsible for backend development, REST API design, database schema creation, and platform promotion. Developed using Flask with MySQL for storage, Redis for caching and MongoDB for resume data, with Kafka for message queue. Also fine-tuned OpenAI with targeted adjustments based on specific prompt requirements.

Rate Corner – Course Rating Platform   **Feb 2024 - Present**
Project Leader
- Link: https://ratecorner.org
- Tech stack: Java, Spring Boot, Mybatis, Redis, MySQL, JWT, Swagger, Nginx, REST APIs, React,Typescript.
- A course evaluation platform allowing students to register, provide course evaluations, view and filter other course reviews, and manage users' own assessments. Widely used by NUS students, the platform has garnered thousands of favourites on social media promotional posts.
- Responsible for task scheduling, solution implementation, prototype design, REST API design, database schema design, backend development, integration test, service deployment, and promotional activities.

CERTIFICATIONS
- The second prize of National Computer Design Competition
- Special Prize of Jiangsu computer design competition
- Second prize of Southeast University computer design competition
- Puxin Elite Scholarship