Runze Liao

He/Him, Seeking opportunity for SDE internship
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SKILLS

Languages: Java, Python, C/C++, Go, JavaScript, TypeScript, PHP, C#, Visual Basic, SQL, R

Frameworks: CUDA, MPI, Spring, Django, Flask, .NET, Node.js, React, Next.js, Angular, Express,js, Laravel, Flutter

Tools: k8s(Kubernetes), AWS, Maven, Azure, Nginx, Redis, Tailwind, Figma, Selenium, GIT, Docker

Databases: Spark, AsterixDB, MySQL, Microsoft SQL Server, Hadoop, PostgreSQL, Firebase, Supabase

PROFESSIONAL EXPERIENCE

iFLYTEK Co., Ltd Hefei, China

Software Engineer Intern *May. 2023 – Augest 2023*

- Imported user action statistics from the database to the Action Center and improved the recommender system's feed and search accuracy. Used Apache **Kafka** stream processing framework to accelerate dumping speed.
- Automatically parsed events from the user event log to generate a RocksDB database file and deployed this service by running **Docker** daily on distributed instances.
- Provided a control tool for machine learning engineers to check different models' end-to-end effect on our recommender system's feed service. Reduced the average delivery time of deep-learning models by **13.3**%.
- Renovated service deployment scripts and transferred offline files from Alibaba Cloud to iFlytek's **HDFS**, saving $3000 per month. Wrote unit tests, system tests, and end-to-end test code to ensure code quality.

SELECTED PROJECTS

MPI-Based Parallel Computing for Prime Number Gerneration, (GitHub): Enhanced a C-programmed, **MPI-based parallel**. Implemented **block decomposition** techniques to improve data retrieval and cache hit rates, coupled with reducing communication overhead and adopting **synchronous** computation on multi-core systems. Conducted benchmark tests on a high-performance computing cluster with various MPI core configurations. The improvement resulted in a significant reduction time from 23.20 seconds to **0.30 seconds**.

Distributed System Design for Order, Supply Chain, and User Behavior Analysis (GitHub): Developed a highly efficient distributed data analysis system using **Hadoop**, **ZeroTier** and **Spark**, achieving precise recommendations for e-commerce user orders and supply chain optimization. Led the development process, including building scalable backend services, implementing **distributed computing** and parallel data stream processing, and integrating these components seamlessly. Enhanced system performance for large-scale real-time data processing in production by optimizing deployment pipelines.

SWU Book Management System (Demo, GitHub): Implemented advanced categorization and search techniques, performed, performance optimization, reducing latency by **25%**, and conducted stress testing, ensuring system robustness.

SELECTED PUBLICATIONS

Conference: ReconHC: Reconstruct Hidden Content in Physical Envelopes

- Developed a deep learning-based system for analyzing and reconstructing physical mail content, utilizing CNNs and **transformer** architectures to handle diverse envelope colors and textures. Integrated **OCR** for accurate text extraction from complex backgrounds. Our paper will be appeared at top-tier conference **AAAI** 2025.

EDUCATION

University of California, Riverside

MS, Computer Engineering *Sep. 2024 – March 2026 (Expected)*

Southwest University

BE, Computer Science (with Hons.); Ranking: 5/120 (Top 4%) *Sep. 2020 – July 2024*