Hedi H.

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EDUCATION

University of Bath	Bath, U.K.
Master in Science, Major in Computer Science, Merit	Sep 2023 - Oct 2024
Major Coursework: Principles of Programming (80), Databases (78), Software Engineering, Foundations	of Computation (75),
Machine Learning, Reinforcement Learning (75)	
Dissertation: Machine Learning Technologies for Speech Decoding based on Invasive BCI	
Qingdao University of Technology	Shandong, China
Bachelor in Management, Major in Information Management and Information System, 2:1 Class	Sep 2019 - Jun 2023
Major Coursework: Python (93), Java (92), MySQL (90), Matlab (90), Computer Network (89), GIS and Urban Big Data (98),	
Data Structure, ERP Synthesis Design, Principles of Microcomputer	

Dissertation: A Web Competition Management System Based on Flask+Bootstrap+HTML+MySQL

PROGRAMMING INFORMATION

- Java foundation: Have a solid Java foundation, master basic technologies such as strings, collections, and multithreading, read some HashMap source code, and understand ConcurrentHashMap;
- Java concurrency: Familiar with JUC concurrent programming, master the use of thread pools, optimistic/pessimistic locks, CAS, spin locks, Synchronize lock upgrade mechanisms, Volatile, ThreadLocal, etc.;
- JVM: Familiar with the basic principles of JVM, and have an understanding of its memory division, garbage collection, strong/weak references, etc.;
- Relational Database: Master the use of MySQL, and have a deep understanding of its B+ tree index principle, lock mechanism, MVCC, etc.;
- Non-relational Database: Master the use of Redis, have a deep understanding of Redis clusters, understand cache penetration, cache breakdown, cache avalanche, etc.;
- Message Queue: Understand Kafka's message middleware for asynchronous communication;
- Computer Network: Master the OSI seven-layer network model, master TCP, UDP, HTTP, HTTPS and other network protocols;
- Spring: Understand SpringIOC, Spring Framework principles such as AOP, transaction propagation mechanism, object life cycle, SpringMVC processing flow, and SpringBoot automatic configuration.

PROJECT EXPERIENCE

Implement Simplified Message Queue

2025.03

2025.02-2025.03

- Network Communication: Based on Netty 4, efficient communication between the client and the server is built, and a complete timeout mechanism is implemented;
- Service Availability detection: Develop a Broker-side startup check mechanism, decouple Producer and Consumer, and automatically remove faulty nodes;
- Message Filtering: Support TAG-based message filtering to achieve efficient message filtering on the Broker side;
- Message Sending Mode: Support Sync and One-way message sending to meet the needs of different business scenarios;
- Batch Processing: Implement batch sending of production messages and batch confirmation of message status, significantly improving message processing efficiency;
- Fault Handling: Provide failure handling strategies such as Fail-over and Fail-fast to enhance the system's fault tolerance;
- Heartbeat Mechanism: Implement server-side heartbeat detection and add a Ping sending mechanism to monitor the client connection status in real time and maintain the stability of the connection;
- Message Reliability: Follow the At Least Once principle to ensure that the message is successfully consumed at least once.

Personal blog based on Spring Boot+MyBatis+Caffeine+Redis+MySQL

Project description: This project is a personal blog front-end and back-end separation project, including back-end and front-end. I am a back-end developer. The back-end is provided to administrators for maintenance and management of

articles, tags, comments, administrator information, etc.; the front-end can browse articles, like and comment, and view personal projects.

- Permission Management: Integrate Shiro to implement permission management based on the RBAC model;
- Thread Isolation: Use Shiro and ThreadLocal to encapsulate the global context of thread isolation to reduce the number of queries for administrator information in the database.
- AOP Monitoring: Use AOP aspects to realize automatic management and business log recording of Redis, and use AOP proxy mode to realize task tracking, system monitoring and problem tracing;
- Three-level Cache: Use Caffeine and Redis to realize cache preheating and distributed cache, and use MySQL for persistent storage.
- Precise Lock Granularity control: For concurrent scenarios of article likes counting, Redis distributed locks are used to replace database row locks, and the lock granularity is refined to the article ID level to avoid global lock competition.
- Standardized API: Use Swagger to implement API documentation to facilitate joint debugging by front-end and back-end developers.

PROFESSIONAL EXPERIENCE

Shanghai Zhangjiang Development Strategy Research Institute

Information Statistics Lead, Information Department

• Communication Skills: Managed the information statistics team and coordinated with other departments. Coordinated with the Finance Department: Communicated with the finance department to understand their requirements for salary statistics, assisted in completing employee performance checks, and ensured that the salary statements submitted by the information statistics team met the needs of the finance department. Coordinated with the Human Resources Department: Communicated with the human resources department to assist in organizing employee information and conducting second

interviews for applicants.

• Problem-Solving Skills: Communicated with different departments and coordinated to resolve related issues, ensuring that the team's work is completed on time and achieves the expected results.

Information Statistics Intern, Information Department

Feb 2023 - May 2023

Beijing, China

Feb 2021 - Apr 2021

Shanghai, China

May 2023 - Jul 2023

• Coding Skills: Utilized the PyAutoGUI library in Python to organize necessary company information and input it into spreadsheets, establishing automated processes from scratch and providing timely feedback on information organization status.

- Data Quality Management: Responsible for ensuring data quality in the database, including cleaning and organizing data, checking data integrity and accuracy, ensuring the accuracy and reliability of information in the database, and ensuring real-time updates.
- Conducted interviews for candidates and assisted the department head in completing tasks such as employee performance checks and organization.

Zuoyebang Educational Technology (Beijing) Co., Ltd. (Global 500)

User Growth Intern, Product Department

- Zero cost construction of QQ personal private domain traffic pool to cover junior high school users, achieving a growth of thousand users in the QQ group within 60 days.
- With a methodology for rapid growth of private domain traffic, gained practical experience in growth fission of the QQ ecosystem in the early stages, and can adjust growth strategies according to user needs, achieving the goal of promoting activity, improving user stickiness, and sustained growth.
- Optimize operational processes through the AAARR model to achieve sustained growth; Mastering various automated private domain traffic operation growth tools and utilizing them to achieve mass growth fission. By analyzing similar education industry competitors, continuously optimizing growth SOP and establishing a sustainable growth traffic growth model, helped developed results-oriented thinking.