

# DONGYU CAO

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## EDUCATION

**Chongqing University of Technology**, Master's Degree 09/2020 – 06/2023

- Major: Computer Technology
- Focused on NLP (Text2SQL) research and published papers in EI-indexed journals.

**Chongqing University of Technology**, Bachelor's Degree 09/2016 – 06/2020

- Major: Software Engineering

## WORK EXPERIENCE

**Kwai Inc.**, Beijing, China 12/2022 – now

(Resource Management Platform) *Backend Development Engineer* 07/2023 – now

- Responsible for the development of the CMP multi-cloud management platform. Participated in the design and implementation of the public cloud testing process, Huawei Cloud's access, Alibaba Cloud, Tencent Cloud LB related product access and development, and also involved in platform operation and maintenance, ensuring user public cloud experience optimization and efficient platform resource management.

Tech Stack Used: Django REST framework, Go, Python, Redis, MySQL

Tech Stack for Refactoring: ksboot, Redis, kconf, xxl-job, Mybatis-Plus

1. Solely responsible for the development of the "Public Cloud Testing Process", perfected the setup of the ksboot new project from scratch, including but not limited to meeting modern software engineering design standards, unified exception handling, and RESTful style returns. Additionally, ensured the compatibility of the new system with nacos/star ring; successfully implemented the process call integration with the old cloud platform; switched scheduled tasks to the company's task scheduling platform; adopted a combination of frontend and backend for permission control, improved system security, and perfected the test process reconciliation function. Based on user feedback, I continuously fixed defects and upgraded system functions, significantly improving the efficiency of the test process and the maintainability of the system. By fully managing public cloud testing resources, I implemented process control, overdue reminders, and resource opening functions, greatly simplifying the operation and management of resources for different role users (such as ordinary users and SREs), and improving the convenience and efficiency of the platform.
2. As a core developer in the full process access of Huawei Cloud products to CMP, I was responsible for the design and implementation of network security group, PaaS resource management (especially MongoDB), and cross-language (Django, SpringBoot, Go) development work, significantly improving the efficiency of cloud resource management and system security.
3. Under the multi-cloud environment, I led the design and implementation of the load balancing function upgrade, especially:
  - Designed and implemented the access of Alibaba Cloud Network Load Balancer (NLB), optimized the cloud service SDK adaptation process, and ensured the efficient integration of products from different cloud manufacturers.
  - Responsible for the function expansion and version upgrade of Tencent Cloud Load Balancer (LB), introduced shared and performance capacity specifications, significantly improving the flexibility and performance of the service.
4. In the Huawei Cloud access project, I led the use of the Java tech stack to refactor the original 1 Python and 3 Go services, successfully integrating them into 2 efficient Java applications. From being dispersed to integrated, this transformation significantly reduced system maintenance costs and significantly improved system stability.

(Resource Management Platform) *Backend Development Intern* 12/2022 – 06/2023

- Responsible for the development of the reconciliation platform, built the first phase of the reconciliation platform from scratch, including supplier bill upload and download, parsing and mapping, cloud merchant bill access, supplier alarm function, external email module design and implementation, bill report implementation, completed the reconciliation of self-built CDN, PCDN, improved efficiency (the billing cycle was reduced from the original 25 man-days (5 people5 days) to 5 man-days (2.5 people2 days), improved efficiency by 400%, the reconciliation payment work was upgraded from the original 15 man-days to 7 man-days, improved efficiency by 114%)

Tech Stack Used: Springboot, MySQL, Clickhouse, Redis, Easyexcel, Grafana

1. Utilized ClickHouse to achieve efficient storage and processing of supplier bills, significantly improved system processing speed through its excellent data insertion and query performance, combined with data rule aggregation to MySQL, achieved instant response and seamless experience for users when uploading bills, greatly optimized user operation process and satisfaction.
2. Designed email notification module to remind external suppliers to upload bills, bill validation reminder function, adjusted email sending rate and receipt, ensured suppliers upload and update bills on time and with

quality, shortened the reconciliation cycle.

3. Used the strategy pattern to optimize the bill parsing process, achieved flexible handling of different supplier bill formats, greatly improved development efficiency and system scalability, simplified the maintenance work of subsequent bill format changes.
- Resource operation and asset management direction, supply chain + asset management (including RMS+CMR+power management) completed the full lifecycle management of company assets, budget + forecast + KAS bill as platform support to run a set of operation rules, based on the understanding of the resource management platform, expanded the existing business according to new requirements, added new function modules.

Tech Stack Used: SpringBoot, MyBatis, MySQL, Redis, Kafka, XxlJob, Kubernetes, Grafana

1. In the 2023 budget management project, responsible for key research and development work of the basic module and platform dashboard module. My contribution supported efficient budget collection and compilation processes, significantly improved the accuracy and efficiency of company financial planning, and shortened the budget compilation cycle by 20%.
2. In the execution of the 2023 budget, I was responsible for the development and testing of key functions such as budget transfer, budget addition, and budget month-end. The successful implementation of these functions greatly improved the flexibility and accuracy of budget execution, reduced the time required for budget adjustments, and improved the efficiency of budget tracking.
3. Designed and implemented the supply chain arrival dashboard, optimized delivery tracking, significantly improved resource delivery efficiency.
4. Participated in the asset management project using python automation scripts to improve the accuracy of resource (such as network card) management and strengthen online and offline synchronization.

**SAP**, Shanghai, China

06/2022 – 11/2022(three days a week)

(SuccessFactors) *Backend Development Intern*

- Participate in the SF plt-PLS event team's iteration, responsible for the research of migration solutions as well as feature updates and bug fixes.
  1. Responsible for researching multi-cloud message queue solutions (including native Kafka, Confluent, GCP Pub/Sub, Azure Service Bus), supporting the company's multi-cloud strategy and technology selection.
  2. Developed and maintained dependency cleaning tools, effectively removing useless dependencies, improving application performance and maintenance efficiency.
  3. Implemented Kafka feature updates and upgrades, solved key bugs, and ensured the stable operation and performance improvement of the messaging service.

**Dell Inc.**, Shanghai, China

10/2021 – 02/2022

(VxRail VCF&Network Team) *Backend Development Intern*

- Participated in the iteration of the VxRail sub-platform VCF, responsible for the design and implementation of platform auto-configuration functionality and configuration customization GUI.
  1. Familiar with the overall architecture of the VxRail product, familiar with concepts such as HCI, SDS, SDDC; used vSAN to manage server clusters, wrote scripts to deploy configurations; effectively troubleshooted and quickly fixed bugs, ensuring the stable release of the product.
  2. Adopted SpringBoot and Vue to achieve front-end and back-end separation, solved cross-domain and parameter passing issues, improved development efficiency and system maintainability.
  3. Developed a tree node construction and front-end rendering function based on JsonObject, used Tree widget to optimize the user interface, achieved efficient json data positioning and editing.
  4. Implemented json field filtering and multiple field mapping functions based on project configuration, enhanced the flexibility and accuracy of data processing.

## SKILLS

- Familiar with the Java language, understand the concept of object-oriented, master Java encapsulation, inheritance, and polymorphism features
- Understand Go, Python, maintain CMR and carry out functional research and development, understand the concept of object-oriented, master the features of encapsulation, composition and interface
- Familiar with common containers (List, Set, Map), multithreaded concurrency (read-write lock, blocking queue, thread pool, ConcurrentHashMap, etc.)
- Familiar with mainstream frameworks such as SpringBoot, can quickly build and complete engineering configuration, such as Git, Maven, log optimization, configuration file, integration of hot deployment
- Understand JVM related knowledge, such as garbage collection (GC algorithm, garbage collector) and class loading mechanism, parent delegation model
- Proficient in using MVC model for project design, familiar with common design patterns such as singleton, strategy, and factory

- Understand basic Git operations and Linux related basic knowledge, proficient in using Docker and other container technologies for CI/CD
- Familiar with MySQL index principle, query performance optimization, understand storage engine (InnoDB, MyISAM), master-slave replication
- Familiar with database transaction characteristics, transaction isolation level, understand MVCC, Next-Key Locks, snapshot read and current read
- Familiar with Redis data types, understand expired key deletion, data elimination strategy, RDB and AOF persistence mechanism
- Familiar with TCP three-way handshake and four-way wave, understand TCP flow control and congestion control, understand the working principle of TLS's security mechanism
- Actively exploring LLM tools such as ChatGPT 4 and GitHub Copilot to improve coding efficiency. Continual learning, keep up with the technological frontier through technical blogs and open source projects, stimulate passion for innovation, adapt to technological changes.

## THANKS

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- Thank you for taking the time to review my resume. I look forward to the opportunity to work with you.