Yongzhao **Li**

Backend Developer · Fullstack Developer

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Open Source Contribution

DCache

C++ Developer

- Dcache, a distributed NoSQL storage system based on Tars, both open source by Tencent.
- Pull issues, fix issues and import documetations.
- Repository: Tencent/DCache.

Experience

Blockchain-based Federated Learning System

RWTH Aachen University

Software Engineer & Master Thesis — *Mar. 2022 - Exp. Sept. 2022*

- Built a blockchain platform with *fabric hyperledge* on which a Federated Learning system was deployed.
- Overrride the network communication protocol with a *Hypercube P2P* topology network model and applied it to the model aggregation on Federated Learning system.
- Implemented a trading system on the blockchain platform for models and data trading.
- Deployed on multiple servers with *Docker* and *Kubernetes*.

Blockchain Hackathon

Germany

Backend Developer — *Nov. 2021*

- Built a blockchain platform with JD Chain on which a simple machine learning platform was deployed.
- Developed trading samples to simulate models and data trading. Implemented smartcontracts for trading on the chain.
- Implemented a web application for users to simulate trading on the platform. The backend was implemented with *go iris*.
- Review of Hackathon: AISpace.

Shanghai Nengjiao Network Technology Co., Ltd.

Remote Work, Part Time

Tech Lead & C++ Linux Server Developer — *May. 2022 - Jul. 2022*

- Developed a linux server program with epoll model to connected multiple embedded devices. The epoll model is implemented to accept connction requests from devices, recieve heartbeat packets and requests from the backend service.
- Created a thread pool and a task queue that can forward packets for the targeting devices. The task queue is implemented for submitting tasks the thread pool. In addition, a message queue that implemented with C++ template was built as a critial section to guarantee thread synchronization.
- Implemented a connection pool that used for connecting and proxying access to the database, where the pool size can be dynamically adjusted in running time to wisely allocate the connection resources.

Tech Lead & Backend Developer — *Mar. 2022 - Jun. 2022*

- Refactor the system with a microservices framework, *Tars* on which creating a C++ backend framework and a go backend framework to fit.
- Those two backend frameworks both include http context, dynamic router, route group control, middleware design and error handling mechanism.
- Implemented a trie tree as the data structure to help developing dynmic router.
- Developed an Object Relational Mapping in go to fit on the go backend frameworks.
- Implemented a connection pool that used for connecting and proxying access to the database.
- Refactor business code to fit in those two backend frameworks as well as *Spring Boot* in *Tars*.

Tech Lead & Backend Developer — *Sep. 2021 - Feb. 2022*

- Implemented backend with python *Django* framework.
- Implemented a Single Sign On system with *JSON Web Token* on authentication and authorization for different applications on stateless login status.
- Tailor-made software development with *apinto*, a microservice gateway, and added a *JSON Web Token* authentication and authorization plugin in gateway.
- Deployed on a distributed system, multiple servers with *Docker*.

Tech Lead & Backend Developer — *Mar. 2020 - Jun. 2020*

- Implemented backend with python *Django* framework and frontend with *vue*.
- Developed authentication and authorization with JSON Web Token by implementing a access token and a refresh token for stateless login status.

Tech Lead & Fullstack Developer — *Nov. 2019 - Mar. 2020*

- Designed the whole architecture for the platform and built a machine learning and mapreduce platform for data prediction in different models.
- Implemented backend with *go iris* and frontend with *vue*.
- Implemented a machine learning platform for data preprocessing and data training with *sparkML* library, a mapreduce framework.
- Mainly deployed *Xgboost* model and *lightgbm* model for data regression analysis on the platform.
- Deployed on a distributed system, multiple servers with *Docker*.
- Main Page: Joinercast

Personal Blog & Main Page

Fullstack Developer — *Sept. 2019 - Dec. 2019*

- Created a C++ backend framework to fit *Tars* and implemented frontend with *vue*.
- Implemented a connection pool for connecting and proxying access to the database.
- Deployed on a distributed system, multiple servers with *Docker*.

Education

RWTH Aachen University — *Aachen, Germany*

M.S. in Computer Science — *Oct. 2018 - Exp. Oct.2022*

- Grade: 2.3/1.0

Guangdong University of Technology (GDUT) — *Guangdong, China*

B.S. in Computer Science — *Sept. 2014 - Jun. 2018*

- Grade: 2.2/1.0

Honors & Awards

Domestic

2021 **Best Technical Implementation and Industry Challenge,** Blockchain Hackathon — *Germany*

2016 **3rd Award,** Oracle Java Development Program Competition — *China*

Skills

Programming C++, Go, JAVA, Python, C#, PHP, Javascript, SQL, R

Back-end Tars(Microservices), go iris, Spring Boot, Django, Laravel, REST API

Front-end Vue, React, HTML5, CSS

Database MySQL, MongoDB, Redis, DCache

DevOps Docker, Kubernetes

Build Tools Makefile, CMake, QMake, Maven

Tools Linux maintenance, Git