BRIX LABS

Liu Kun

Skill Sets

Programming Languages & Data: Python, Golang, JavaScript, MySQL, Redis
Architecture & Tools: React, Flask, Git, Kafka, Aliyun Cloud, Linux

Professional Experience

Beijing Jindi Technology Co. (Tianyan Cha) **04/2019-07/2021**
position: Software Engineer Beijing, China
Batch video generation and delivery architecture:

- Implemented the main video part of the visualization of specified textual information over Python's FFmpeg, OpenCV, and other visualization packages, and was responsible for the coordination of each function.
- Responsible for the backend framework of batch video generation based on mainstream distributed processing ideas such as data consistency and timing assurance. And realize the service of batch concurrent video transfer to Ali cloud based on Redis and SQL, providing timing and automatic update strategy. At the same time, we completed the system design documentation before programming, integration testing of the main functions of the video implementation, and scripting using the Flask framework to serve the video testing on the Linux platform.
- Generated and delivered a total of 3.5 million+ videos of 2-3 minutes and 5-15MB in size with voiceover. Optimization iterations increased the video generation rate by 140% of the initial version; the transfer success rate increased from 67% to 99%, with an average time improvement of 32% and space savings of about 45%.

Defendant identification service for legal documents, owner:

- Based on deactivation cutting + prefix tree word recognition + specific word (original defendant) nearest match technique, we rebuilt the legal document recognition service with packages such as marisa-trie in python. Completed unit tests and integration tests.
- In addition to recognizing company names, we added the recognition of human parties. And increase the accuracy rate from 64% to 97%. In total, 150M+ parties (companies and natural persons) in legal documents are identified and categorized into litigation status.
- After the business launch, we connected upstream and downstream through Kafka, serving 3+ downstream businesses. The main backup mode is implemented to maintain the prefix tree updated regularly to improve the service performance.

Beijing Precision Communication Technology Co. **10/2017-05/2019**
position: Software Engineer Beijing, China
Crawler architecture, owner:

- Crawled and stored 70 million+ industry data such as web news/forum comments to MySQL and Neo4j through python request, selenium, pandas packages, and scrappy-Redis framework, with a daily change of about 100,000.
- Optimized the project, including using bloomfilter to filter duplicate requests, optimizing storage structure and elimination strategy, reducing memory consumption from 80%+ to 30%+, and improving the stability and performance of the project.

Project Experience

- Implementing Distributed Systems Based on Golang - MIT 6.824: **04/2022-07/2022**

- Implementation of mapreduce system, based on cluster to complete the processing of data in multi-thread/multi-process.
- Implementation of Raft protocol, including functions: leader election, log replication and commit, state persistence.
- Fault-tolerant distributed KV storage service based on Raft library to achieve multi-copy storage of data under the condition of linear consistency.

- A react-based implementation of an e-commerce platform: **07/2022-08/2022**

- A React full-stack project to implement a shopping site for personal login and shopping. Uses Redux, GraphQL, ES6+, and firebase storage.

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EDUCATION

Academy of Art University — **San Francisco, CA**
Master's Degree - Visual Effects - Dynamics — 2012–2015
Program-related courses GPA:A-

Xi'an Jiaotong University — **Xi’an, China**
Bachelor’s Degree – Computer science and Technology — 2008–2012
GPA:3.3;twice awarded national scholarship