

Xiaochen Cui

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EXPERIENCE

• Shanghai Magus Technology Co., Ltd. - Chongqing, China

Senior Software Engineer (Apr 2021 - Present)

- **Vectorized Query Engine:** Designed and developed the vectorized query engine for LightningDB, speed-up most SQL queries by 20 - 100 times. (LightningDB is a DBMS for online analytical processing.)
Technologies used: SIMD, Golang
- **Real-Time Buffer Pool:** Designed and developed the real-time buffer pool for LightningDB, speed-up SQL queries on real-time data by 10 times.
- Designed the structure of data files and index files for the underlying storage, resulting in a 70% reduction in disk footprint and a nearly 3x increase in system IO speed.
- Built a CI system that reduced the number of bugs in the system by half and increased the speed of bug resolution by two.

• Burnish Technology - Chongqing, China

Senior Software Engineer (2020)

Software Engineer (2019)

Junior Software Engineer (2018)

- **High Performance Gateway:** Designed and developed the IoT gateway, which loads up to 1 million packages per second.
Technologies used: epoll, Golang
- **Cloud-Native:** Built a complete cloud-native environment, reducing the time to deploy a cluster from three weeks to two days, the time required to release a new version from one week to one day.
Technologies used: docker, kubernetes, prometheus, grafana, helm, consul
- Built and maintained a Alluxio cluster for data-analyze team, making them operated data more easily, and also doubles the speed of data processing.
- Done a lot of work for the automation of operations and maintenance.

• Zhicheng Technology - Chengdu, China

Junior Software Engineer (2017)

- Backend Development, Daily Operation, Recruitment, Management

PROJECTS

- **simple-db-java:** A simple relational database written based on mit6.830, which implemented buffer pool, write ahead log, transaction, roll-back, etc. Support underlying storage with heap format and b+ tree format.
<https://github.com/XiaochenCui/simple-db-hw>
- **small-db:** A simple relational database, still under development. <https://github.com/small-db/small-db>
- **distributed key-value storage:** A fault-tolerance key-value storage based on raft consensus algorithm.
<https://github.com/XiaochenCui/mit6.824>

EDUCATION

• Tianjin Polytechnic University - Tianjin, China

Bachelor of Software Engineering (2013 - 2017)