

# Xiaochen Cui

LinkedIn: [Xiaochen Cui — LinkedIn](#)

GitHub: [XiaochenCui](#)

Blog: [XiaochenCui's Blog](#)

Email: [jcnlxc.new@gmail.com](mailto:jcnlxc.new@gmail.com)

## SUMMARY

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Senior software engineer with fluent English and solid programming practice. Focused on database kernel and system programming.

## EXPERIENCE

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

*Senior Software Engineer - Database Kernel (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.)
- **SQL Optimizer and Planner:** Designed and developed the SQL optimizer and planner for LightningDB, dramatically reducing the query engine's complexity. Designed a new language for SQL rewriting, resolving 90% of legacy bugs.
- 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.

- **Burnish Technology** - Chongqing, China

*Senior Software Engineer - DevOps (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.
- **Cloud-Native:** Built a complete cloud-native environment, reducing the time to deploy a cluster from three weeks to two days, and 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 an Alluxio cluster for the data-analyze team, making them operate 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

## SIDE PROJECTS

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- **small-db:** A toy relational database that supports various storage models, transaction models, and concurrency-control models. <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

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- **Tianjin Polytechnic University** - Tianjin, China

*Bachelor of Software Engineering (2013 - 2017)*