

Alex Chi

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Education

Shanghai Jiao Tong University

September 2018 – June 2022 (Expected)

B. Eng in Computer Science and Technology

Shanghai, China

- GPA 93.80/100, Rank 1/149, National Scholarship 2019 (Top 0.2% national-wide)
 - A+ Courses: Operating Systems, Computer Architecture, Computer Networks, and 28 others
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Internship Experience

Singularity Data, Inc.

August 2021 – Now

Database System R&D Intern

Shanghai, China

- One of the top contributors of **RisingWave**, the next-generation streaming database in the cloud. Worked on development of almost all components related to computing and storage.
- Developed RisingWave **state store layer**, which integrated the **executor state** (constantly updating within epoch) with the **cloud-native state backend** (only accepting batch state updates).
- Designed **shared state** support in RisingWave to avoid duplicated states across the system; implemented **lookup executor** based on shared state to support **efficient delta joins**.
- Greatly improved RisingWave's development experience by initiating the **developer ecosystem**, including streaming dashboard, distributed tracing, and *RiseDev* (configures a dev cluster with ease).

ByteDance, Ltd.

June 2021 – August 2021

Storage System R&D Intern, TerarkDB Team

Beijing, China

- Implemented **Zone-Aware Garbage Collection** in **TerarkDB** for Zoned Namespace SSDs, which reduced 3-4x of space amplification caused by interleaving write lifetime in a single ZNS zone. 🔄
- Added observability facilities to **ZenFS** (by Western Digital) to analyze bottlenecks and implemented a **WAL-Aware Zone Allocator**, which reduced tail latency from 1000 to 10 msec. 🔄

PingCAP, Inc.

August 2020 – January 2021

Storage System R&D Intern, TiKV Storage Team

Shanghai, China

- Built LSM-based storage engine **AgateDB** from ground-up. Inspired by WiscKey and BadgerDB, AgateDB separates large values from LSM tree into value log, so as to reduce write amplification. 🔄
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Open-Source Contributions

RisingLight Community

January 2022 – Now

RisingLight Project Maintainer

🔄 [risinglightdb](https://github.com/risinglightdb)

- Leads the development of **RisingLight**, an OLAP database system for educational purpose.
- Designed and implemented a merge-tree **column storage engine** with snapshot isolation support; mentored community members to add functionalities like **filter scan** and **statistics**.

TiKV Community

May 2020 – Now

TiKV Maintainer

🔄 [tikv](https://github.com/tikv)

- Maintains **TiKV Coprocessor**, the push-down execution framework of TiDB.
- Mentored community members to contribute new features to TiKV in the **LFX Mentorship**. 🔄 🔄

Shanghai Jiao Tong University Linux User Group

May 2019 – March 2022

SJTUG Mirror Maintainer, SJTUT_EX Maintainer

🔄 [sjtug](https://github.com/sjtug)

- Leads the development of SJTUG mirror service, serving 2 million requests from 70k users a day. 🔄

Personal Projects

3.3k followers 🔄 [skyzh](https://github.com/skyzh)

- **type-exercise-in-rust** (☆650): Learn Rust black magics (GAT, HRTB, bypassing compiler bugs, macros) by implementing an expression framework in database systems. 🔄
 - **core-os-riscv** (☆224): A simple operating system made with the Rust programming language based on xv6, with multi-core scheduling, simple file system and user-space applications support. 🔄
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Skills

Programming Languages: Rust, C++, Golang, Python and Node.js

Tech Skills: Key-Value Storage Systems, SSD-optimized File Systems, Database Systems, Stream-Processing Systems