Chi Zhang

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Education

Carnegie Mellon University August 2022(Expected) – December 2023 (Expected)
Master of Science in Computer Science Pittsburgh, PA

Shanghai Jiao Tong University September 2018 – June 2022
B.Eng in Computer Science and Technology Shanghai, China

- GPA 93.58/100, Rank 1/149, National Scholarship 2019 (Top 0.2% national-wide)
- A+ Courses: Operating Systems, Computer Architecture, Computer Networks, and 28 others

Internship Experience

Singularity Data, Inc. August 2021 – July 2022
Database System R&D Intern Shanghai, China

- One of the top contributors of RisingWave — a next-generation streaming database in the cloud. Worked on the development of almost all components related to stream computing and state store.
- Designed and implemented **shared state** to support **streaming index** in RisingWave; implemented **lookup join executor** based on shared state to support efficient **index delta joins**.
- Lead the team to investigate and analyze performance issues in RisingWave with benchmarks; fixed bugs and proposed strategies which improved the system throughput by 10x in a 3-month period.
- Greatly improved RisingWave's development experience by initiating the developer ecosystem, including streaming system dashboard, developers' tool RiseDev, and a benchmark set-up tool based on Terraform. They are now indispensable parts of everyone's development process.

ByteDance, Ltd. June 2021 – August 2021
Storage System R&D Intern, TerarkDB Team Beijing, China

- Implemented **Zone-Aware Garbage Collection** in **TerrakDB** 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 the p999 tail latency by 100x.

PingCAP, Inc. August 2020 – January 2021
Sotrage 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 vallues from LSM tree into value log, so as to reduce write amplification.

Open-Source Contributions

RisingLight Community January 2022 – Now
RisingLight Project Maintainer 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

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

Personal Projects **4k** followers skyzh

- **type-exercise-in-rust** (☆ 870): Learn Rust black magics (GAT, HRTB, bypassing compiler bugs, macros) by implementing an expression framework in database systems.

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