Rongzhao Chen (荣钊 陈)

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Education

Tsinghua University - **Software Engineering** - **Bachelor**　　　　　　　　　Sep 2018 - Jun 2022
GPA: 3.61/4

Tsinghua University - **Software Engineering** - **Master**　　　　　　　　　　Sep 2022 - Present
GPA: 3.82/4　　　　　　　　　　　　　　**Advisor:** Jianmin Wang
Research area: distributed system, timeseries database, load balance

Research & Project

Apache IoTDB - **ConfigNode group leader**　　　　　　　　　　　　　　　　Oct 2020 - Present
Statistics: About 250 times of commit, which ranks 9th among all contributors.
Paper: "Migration-Free Elastic Storage of Time Series Data in Apache IoTDB". (in progress)
Scope: I am the **principal designer and implementer of ConfigNode** in Apache IoTDB. ConfigNode is the master node in the IoTDB cluster and is responsible for managing **load balance**. Initially, I led a team to complete the **development of ConfigNode from scratch.** Subsequently, I independently developed the load balance framework. I have now designed and implemented **load balance algorithms** suitable for industrial IoT scenarios, including:

　　(i) **Partition Allocation:** By considering the characteristics of time series data, I partition time series data by series and time dimensions. These balanced data partitions are then evenly allocated to the cluster's data shards, within this process, Time to Live (TTL) is involved to avoid unnecessary partition migration.

　　(ii) **Replica Placement:** Using probability theory and graph theory, I designed and implemented the shard replica placement algorithm, which improves the cluster's **storage load balance and fault tolerance**.

　　(iii) **Leader selection:** I designed and implemented the theoretically optimal shard replica group leader selection algorithm based on the cost flow algorithm, enhancing the cluster's **computational load balance**.

Internship

Alibaba (China) Co., Ltd. - **Baisc data platform RD**　　　　　　　　　　　Sep 2020 - Nov 2020
Completed the development of the materialized view feature.

Beijing Zitiao Network Technology Co., Ltd. - **Seed Department**　　　　　May 2024 - Jul 2024
Model parameter storage performance tuning.

Skills

Algorithm: Proficient in algorithm competition, rating 2173 on Codefoces
Programming Language: Proficient in Java; familiar with C++, Python, Go, etc. Check my Github Profile for more details.
Teamwork: Acquainted with team cooperation in open-source communities.

Selected Awards

- 2024.6, 2023 Student of the Year, Tsinghua University School of Software
- 2023.11, First Place in Beijing, China Collegiate Computer System Development Capability Competition
- 2023.10, First Prize of Tsinghua University Comprehensive Excellence Scholarship
- 2023.8, Bronze medal in Martial Arts Sanda Championship of Chinese college students
- 2023.1, Apache IoTDB Committer
- 2022.6, Outstanding Graduate of Tsinghua University School of Software
- 2021.11, Second Prize of Tsinghua University Social Work Excellence Scholarship
- 2019.11, Second Prize of Tsinghua University Science and Technology Innovation Excellence Scholarship
- 2019.10 & 2018.11, Silver Prize of China Collegiate Programming Contest (CCPC)
- 2017.7, Bronze Prize of National Olympiad in Informatics
- 2017.5, Silver Prize of China Team Selection Competition