Rongzhao Chen (荣钊 陈)

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🎓 Education

M.Eng. (Thesis), Software Engineering, Tsinghua University   Sep. 2022 – Present
GPA: 3.82/4.0   **Advisor:** Jianmin Wang
Research area: distributed system, time series database, load balancing

B.Eng., Software Engineering, Tsinghua University   Sep. 2018 – Jun. 2022
GPA: 3.61/4.0   **Advisor:** Jianmin Wang

📖 Publication

Rongzhao Chen, Xiangpeng Hu, Xiangdong Huang, Chen Wang, Shaoxu Song, Jianmin Wang. Migration-Free Elastic Storage of Time Series in Apache IoTDB. On *revision* process of VLDB2025.

⚗ Research & Project

IoTDB – Top 10 Contributors & ConfigNode Group Leader   Oct. 2020 – Present

I am the principal designer of ConfigNode, which is responsible for cluster management and data distribution. I led a team to develop it from the ground up. I proposed a suite of load balancing algorithms tailored for Internet of Things (IoT) scenarios as the default configurations of IoTDB:

- **Migration-Free Data Partitioning and Allocation.** Time to Live (TTL) is often implemented in time series databases. By leveraging TTL, unnecessary data migrations can be avoided if new data partitions are evenly allocated across cluster nodes, thereby facilitating cluster expansion.
- **Storage-Balanced and Fault-Tolerant Replica Placement.** As the number of IoT devices grows, time series database clusters must scale accordingly. In this context, I demonstrated that finding the optimal replica placement schemes is an NP-complete problem. Thus, I constructed a graph theory model and proposed an approximation algorithm with rigorous proofs. Compared to my algorithm, the disk usage standard deviation of the state-of-the-art solution is at least 70% greater.
- **Write-Balanced Leader selection.** To handle intensive write loads, I refined the classic cost flow algorithm to evenly select leader replicas, resulting in a 15% improvement in write throughput.

vLLM – Top 100 Contributors   Oct. 2024 – Present

Model Support. The extensive integration with HuggingFace (HF) Transformers is a core feature of vLLM. To accelerate the compilation process for supported models, the vLLM community has proposed enabling the *torch.compile*, despite the significant compatibility challenges it presents. Joining the community, I contributed to improving the compilation process for over thirty models.

🏆 Selected Awards

2023 Student of the Year, School of Software, Tsinghua University.	Jun. 2024
First Prize, Comprehensive Excellence Scholarship, Tsinghua University.	Oct. 2023
Apache IoTDB Committer.	Jan. 2023
Outstanding Graduate, School of Software, Tsinghua University.	Jun. 2022
Bronze Prize, National Olympiad in Informatics.	Jul. 2017
Silver Prize, International Olympiad in Informatics China Team Selection Competition.	May 2017

⚙ Skills

- **Algorithm.** Proficient in algorithm competition, rating 2173 on Codeforces.