Qiaolin Yu

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Education

University of Liverpool | BS, Computer Science — Liverpool, UK
2019.09 - 2023.06

Xi'an Jiaotong-Liverpool University | BSc, Information and Computing Science — Suzhou, China
2019.09 - 2023.06

Industrial Experience

ByteDance | *OLAP Database R&D Intern* — 2022.01 – Present
Development of Cloud Native OLAP Database ***"ByteHouse"*** — *Beijing, China*

- Inspired by paper: The Snowflake Elastic Data Warehouse (SIGMOD '16), ByteHouse is a cloud native OLAP database based on ClickHouse, with more than **15000 nodes**, a total storage capacity of **600PB** and an average of **110 million queries** per day.
- Refactored 176 public APIs of catalog service in ByteHouse to increase its stability and robustness by **87%**, and add metric support.
- Migrated the storage engine of catalog service to the new version of ByteKV, which is a distributed KV store based on RocksDB and Raft.

Kuaishou | *Graph Database R&D Intern* — 2021.06 – 2021.09
Infrastructure for Distributed Graph Database ***"Nebula Graph"*** — *Beijing, China*

- Built and deployed the monitoring system for the online clusters of **10 billion level data**, which asynchronously collects the monitoring metrics on each machine, achieving full coverage monitoring of Nebula Graph services (Graph service, Meta service and Storage service).
- Collaborated in BenchKwai, a benchmark for Nebula Graph in Kuaishou.
- Liaised with SRE team to implement the automatic operation and maintenance platform for Nebula Graph, which reduces manual operations by more than **80%**.

Publications & Preprints

[1] Hao Wen, **Qiaolin Yu**, Min Wu, Xiaomeng Ye, and Zhichao Cao. "GT-cache: A Two-Level Caching Design for Graph Database Query Improvement." *14th ACM Workshop on Hot Topics in Storage and File Systems*, 2022. **HotStorage '22** (Submitted)

Research Experience

Arizona State University | *Research Intern, Database* — Advisor: Prof. Zhichao Cao
Cache of Graph Database — *2022.1 – 2022.3*

- Proposed and developed a two-level caching scheme, called **GT-cache**, to effectively cache blocks, vertices, and non-existing vertex keys, which can achieve up to **166%** QPS improvement in some graph query workloads.
- Submitted the resulting paper [1] as the second author.

Compaction Optimization of LSM tree — *2021.12 – Present*

- Aiming for FAST '23.
- Focusing on the Compaction Optimization of LSM tree and developing a new compaction pattern on RocksDB.

Extra-Curriculum Experience

XOJ | *Team Leader* — 2021.06 – 2021.08

- Led team members in the full stack development of XOJ (Online Judge for XJTLU students), which is an online judge website with Web IDE.

TheStock.AI | *Developer* — 2021.06 – 2021.08

- Cooperated with team members (including PhD students and master students) from Cornell University in the development of the website "TheStock.AI".

Qielun App | *Co-Founder* — 2020.07 – 2020.09

- Led developers to build the backend architecture of the Q& A community called Qielun using Spring Boot, MyBatis, MySQL and Redis.

Selected Awards and Honors

Main Force of ACM/ICPC School Team 2021

National Third prize at 12th Lan Qiao Cup Professional Computer Contest (**Top 3.5%** in China)

Provincial First prize at 12th Lan Qiao Cup Professional Computer Contest (**Top 10%** in Jiangsu Province).

XJTLU Academic Excellence Scholarship (GPA: 3.85/4.0 – **rank 9/297** in major) 2020

Technical Skills

Additional Curriculum: MIT 6.824, CMU 15-445
Programming Languages: Java, C/C++, Golang, Python
Data Infrastructure: Key-Value Store (RocksDB), Distributed Storage System, Graph Database System, OLAP Database System
Backend Technologies: Linux, MySQL, Spring Boot, MyBatis, Redis, JPA
Developer Tools: Git, Maven