

QIQIAN CHEN

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★ RESEARCH INTEREST

Machine Learning Systems, High-Performance Computing, Parallel Computing, Graph Algorithms

🎓 EDUCATION

Tsinghua University, Beijing, China 2020.9 – 2024.7(expected)

B. Eng. (Expected), Software Engineering Cumulative GPA 3.793/4, rank 26/101

University of Waterloo, Waterloo, Canada 2022.9 – 2023.1

Term Exchange, Faculty of Mathematics Term Average 89.8/100

The High School Affiliated to Renmin University, Beijing, China 2017.9 – 2020.7

📖 RESEARCH EXPERIENCES

Research Intern 2023.6 – 2023.9

ALCHEM Group, supervised by Prof. Xuehai Qian Purdue University

- Focused on communication optimization for **distributed GNN training**
- Implemented **staleness-awared quantization strategies** for inter-partition communication

Program Participant, Quantum Circuit Optimization Topic 2022.3 – 2023.3

Student Research Training Program(SRT), supervised by Prof. Zhengfeng Ji Tsinghua University

- Focused on **classical simulations of the quantum circuit** by contracting tensor networks
- Studied tensor network optimization algorithms and parallel contracting implementation

Undergraduate Research Assistant 2021.12 – 2022.11

PACMAN lab, supervised by Prof. Jidong Zhai Tsinghua University

- Worked on a **CPU/GPU high-performance graph mining system** named *GraphSet* (SC'23)
- Improved **Pattern Matching/Frequent Subgraph Mining on multiple GPUs** with adaptive parallel strategies and effective MPI/CUDA implementation

⚙️ INDUSTRY EXPERIENCES

Part-time Intern 2023.2–2024.2

Risk Management Technologies Department, Digital Finance Ant Group

- Focused on **distributed graph mining** in the financial anti-fraud scenario
- Incorporated **billion-vertexes labeled graph's mining algorithm on CPU clusters** with the existing distributed Key-Value database and OLAP systems

✍️ PUBLICATION

Tianhui Shi, Jidong Zhai, Haojie Wang, **Qiqian Chen**, Mingshu Zhai, Zixu Hao, Haoyu Yang, Wenguang Chen. 2023. *GraphSet: High Performance Graph Mining through Equivalent Set Transformations. the International Conference for High Performance Computing, Networking Storage and Analysis (SC'23)*

🧩 PROJECTS

LunchTime, an Android BBS app with Kotlin and Jetpack Compose 2023.5 – 2023.6

Coding Online, a Web Python IDE with Vue3, Typescript and Flask 2022.7 – 2022.8

ThssDB, a toy relational database system with Java, Thrift and ANTLRv4 2022.6

cpp2llvm, a C to LLVM compiler using ANTLRv4 and llvmlite package in Python 2021.12

ThuConqueror, a turn-based strategy chess GUI game with Qt Graphics 2021.9

No Gugu Todo List, a todo list with WeChat MiniProgram framework 2021.2 – 2021.7

ERISC Simulator, a C++ simulator of an extremely reduced instruction set 2020.11

⚙️ SKILLS

- Language: C++, CUDA (Proficient); Python, JS/TS, Java, Kotlin (Familiar); Rust (Novice)
- Framework: Qt, Vue.js, Windows & Android SDK, Flask, PyTorch
- Tools: Linux (cluster experience), Slurm, Git, L^AT_EX, Docker, CMake
- English: IELTS 7.5 (R9.0, L8.5, W6.5, S6.0), TOEFL 106(R30, L27, S23, W26)

♥ SCHOLARSHIPS AND HONOURS

Social Work Outstanding Scholarship ,Tsinghua University	2022.11
Honorable Mention(20%), 2022 The Interdisciplinary Contest in Modeling	2022.2
Comprehensive Outstanding Scholarship(20%), Tsinghua University	2021.11
Third Prize, 2021 China Wechat Program Developing Competition	2021.8
First Prize(20%), 2018 National Olympics of Information, Province(NOIp)	2018.11