

# QIQIAN CHEN

陈启乾

✉ cqqqwq@outlook.com

🌐 ChenQiqian

in Qiqian Chen

✉ cqqthu20@mails.tsinghua.edu.cn

🌐 <https://www.cqqqwq.com>

☎ (+86) 185-1183-7596

## ★ 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** 2023.2–2023.6, 2023.9–2024.2

*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<sup>A</sup>T<sub>E</sub>X, 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