Zixi Qu

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Education

University of Toronto Mississauga *Sep 2019 - Now*
Bachelor of Science (BSc) Computer Science Specialist **CGPA: 3.80** Mississauga, ON

Work Experience

Internship - Software Engineer (DevOps) for Distributed Database *May 2022 - June 2023 (13 months)*
Huawei Technology Inc. Markham, ON

- Design and manage distributed database systems, construct and uphold tools for distributed systems that facilitate effortless initiation, access, and control for team members.
- Actively participated in various performance experiments and was responsible for conducting experimental manipulations and the collection and organization of essential data
- Worked as a key member of the quality assurance team, design and maintained testing frameworks. Ensured the consistent upkeep of development pipelines

Teaching Assistant, CSC108H5, CSC209H5 *sessional*
University of Toronto Mississauga Mississauga, ON

- Designed and conducted weekly labs; exam proctoring and grading
- Wholeheartedly dedicated to support student with their professional inquiries related to Computer Science.
- Passionate for problem-solving and continuous improvement to enhance the overall quality of teaching
- Demonstrate strong interpersonal skills by fostering open communication and building meaningful connections with students

Projects

URLShortner | Orchestration, Fault tolerance, Scalability, Disaster Recovery, Consistency, Availability

- URLShortner system that ensures high performance, consistency and availability
- Integrates advanced features including data replication and partitioning, reverse proxy, automatic re-healing, load balancing, resource monitoring and data caching while ensures orchestration with minimal effort.
- Rebuild with Docker, Redis, and Cassandra as a separate project.

Parallel Computation Project | C, Multi-Processing

- Multi-processing based computational geometry problem that fully leveraging CPU and memory resources.
- Using a divide-n-conquer approach. Compute each piece of work in parallel.
- Compare to Single-Processed, the performance is improved by 21 times.
- Able to calculate the closest pair of points among 10000000 points in less than 2 seconds (on intel i9-12900k).

Xmodem | C, Socket, Web Structure

- Internet Transportation Protocol
- Receive multiple files in parallel (without using multi-threading or multi-processing).
- Package lost and Corrupted data detection and handle according incident to ensure lossless transfer
- Light weight file transfer tool

ext2fs | C, File System, Operating System, Concurrency

- A simulation of ext2 file system.
- Implements linux command mkdir, cp, rm, hl(hardlink), sl(softlink).
- Indirect Pointer is implement to support large file storage.

On Going Project - Algorithm Collections | Python, Data Structures, Algorithms

- Reproduce a wide variety of algorithms, data structures. Mostly written in python

Skills

Python | C | C++ | Java | SQL | HTML | CSS | JavaScript | Bash | Git | Algorithm Design | Data Structures | Operating System Principles | Concurrency | Orchestration | System design | Data Security | Scrum | Software Development | Quality Assurance | AWS | Docker | Redis | Cassandra | Apache Spark | cuda | Markdown | Latex