Qianlin Chen

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Education

McMaster University Hamilton, ON
Master of Engineering in Computing and Software *September 2024 – April 2026*

McMaster University Hamilton, ON
Bachelor of Engineering in Software Engineering *September 2019 – April 2024*

Experience

Undergraduate Teaching Assistant January 2024 – April 2024
McMaster University *Hamilton, ON*

- Led weekly labs, conducted code reviews, and assisted **120** students in understanding **Operating System** concepts, such as **mutexes**, **semaphores** and **monitors**.
- Refined lab materials based on student feedback to address ambiguous topics, achieving a **96%** student satisfaction score.

Backend Developer Co-op September 2022 – April 2023
Huawei Technologies Canada Co., Ltd. *Markham, ON*

- Designed and developed a **YANG** data parser using **C++** to optimize YANG schema processing, achieving up to **5x** faster performance compared to industry standards.
- Implemented a C++ API to abstract **SQL** operations in **SQLite**, reducing raw SQL code by **95%** and improving code maintainability.
- Built a caching strategy using **in-memory caching** to handle **1000 QPS**, reducing database query response time by **20%** and enhancing overall application performance by 10% under high loads.
- Applied **RapidCheck** framework for property-based testing, automating the generation of over **1000** unique tests for each property to reduce manual efforts by **50%** and uncover **90%** edge-cases missed by unit testing.

Software Developer Co-op May 2022 – August 2022
Huawei Technologies Canada Co., Ltd. *Markham, ON*

- Developed a talent filtering feature for an HR web tool using **Python** and **Flask**, enabling automated candidate sourcing and filtering based on predefined criteria to accelerate recruitment timelines.
- Designed and integrated a custom dashboard into the web tool using **Jinja** template for data analytics, empowering HR specialists to visualize key metrics such as candidate status and processing time, improving decision-making efficiency by **40%**.
- Refactored legacy code to enhance modularity and code readability, facilitating seamless integration of new features and reducing onboarding time for group members.

Projects

ACME Park | *Academic Project* September 2024 – November 2024

- Collaborated to build a **Spring-powered** smart parking management application utilizing **Microservices** design pattern, focusing on designing and implementing the Access Control Service to regulate users access.
- Leveraged **RabbitMQ** for internal asynchronous communication and built **REST APIs** for seamless user and system interaction.
- Deployed the system with **Docker** for efficient containerization and environment consistency.

CT Image Reconstruction with FBP | *Academic Project* January 2025 – Present

- Designed and Implemented a CT Image Reconstruction tool with **High-pass** and **Low-pass** filters using **Python**, enhancing the CT image quality by filtering out the blurry noise.

Technical Skills

Languages: Java, C++, C, Python, SQL, Haskell, HTML, CSS, Ruby, Matlab
Frameworks: Springboot, RapidCheck, Flask, Rest
Software & Database: Docker, RabbitMQ, SQLite, MySQL