Qingyuan Qie

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Education

Honours Bachelor of Science in Computer Science Sep. 2017 – Present
University of Toronto, Faculty of Arts and Science, **cGPA: 4.0**

Awards

Coxeter Scholarship in Mathematics Oct. 2019
Dorothy A. P. Walters Scholarship Jan. 2020
University of Toronto Scholar (2018-2019) Sep. 2019
Dean's List Scholar 2018 Winter, 2019 Winter, 2020 Winter

Experience

Software Developer (Intern) May 2020 – Apr. 2021
SOTI Inc. *Mississauga*

- Worked mainly on the C# backend of MobiControl, the company's flagship mobile device management system.
- Developed new features for MobiControl relating to the remote management of Windows 10 machines.
- Implementation and troubleshooting of automated tests using Behaviour-Driven Development.

Research Opportunity Program (CSC399) student Sep. 2019 – Apr. 2020
University of Toronto *Toronto*

- Worked closely with Professor Peter Marbach to research and develop a novel wireless protocol for a high-performance distributed wireless network on IoT devices.
- Implemented a Linux driver which improves the collective performance of a set of overlapping wireless channels.

Teaching Assistant (CSC148: Introduction to Computer Science) Jan. 2020 – Apr. 2020
University of Toronto *Toronto*

- Organzied tutorials for 30 students weekly.
- Held office hours and marked exams.

Undergraduate Researcher July 2019 – Aug. 2019
Fields Institute *Toronto*

- Project: Image Guided Radiation Therapy Net.
- Developed a convolutional neural network that performs image classification to provide quality assurance for medical image registration

Personal Projects

RAIN Project | *Rust, LLVM* May 2020 – Present

- As a small team, worked on developing a novel RVSDG-based research compiler for a functional language with linearly typed effects, which compiles to LLVM
- Focused on developing the LLVM code generation module in the backend

Technical Skills

- Proficiency in multiple programming languages, including C, C++, Rust, C#, Python, Haskell, and Java.

- Practical experience with concurrent and distributed systems, including multithreading, fault-tolerant distributed computing and networking, and GPU development. Particular experience with pthreads, OpenMP, MPI, CUDA, OpenCL.

- Familiar with computer architecture principles, with a particular focus on operating system development, heterogeneous computing and cache-aware optimization. Experience optimizing highly parallel code for CPUs and GPUs, and developing low-level systems and networking primitives and utilities.

- Experience with numerical algorithms and scientific computing, as well as their applications in Machine Learning. Familiar with TensorFlow, PyTorch, and MATLAB.

- Compiler development and programming language design experience, including the use of LLVM IR as a backend.