

Michelle Nguyen

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</> C++, Python, Java

Education

Bachelor of Science (BSc) Honors in Computer Science | University of Calgary

Sep. 2015 – Jun. 2021

Bachelor of Science (BSc) Honors in Biochemistry | University of Calgary

Calgary, Alberta, Canada

- > First Class Honors | Computer Science Major GPA: 4.00/4.00 | Biochemistry Major GPA: 3.68/4.00 | Overall GPA: 3.85/4.00
- > Courses: Algorithms and Data Structures, Distributed Algorithms, Information Theory, Operating Systems, Networks, Security.

Experience

Undergraduate Researcher (Project: Post-Quantum Isogeny-Based Cryptography)

Sep. 2020 – May 2021

Department of Computer Science, University of Calgary

Calgary, Alberta, Canada

- > Investigated optimizations to a cryptographic protocol, by analyzing over 50 publications, to recover two alternative algorithms.
- > Progressed experiments to compare and enhance the run-time of computations, by initiating the development of Magma code implementing the studied cryptographic protocol and its two alternative algorithms.

Teaching Assistant (Course: Operating Systems)

Sep. 2020 – Apr. 2021

Department of Computer Science, University of Calgary

Calgary, Alberta, Canada

- > Led tutorials of 45-55 students by creating presentations and C/C++ programming exercises for 96 one-hour tutorials.
- > Assessed and provided constructive feedback for over 200 C/C++ assignments by testing and debugging students' code.
- > Streamlined the evaluation of assignments by 30% in time, by automating and multithreading the execution of test scripts and writing bash scripts to run on each assignment.

Software Developer

May. 2020 – Aug. 2020

VIKAMI Canada

Calgary, Alberta, Canada

- > Consulted with business owners and deployed an e-commerce website built on WordPress, using PHP, JavaScript, HTML, and CSS; building the business' online presence and resulting in a 20% increase in online sales in the first month.
- > Increased the accuracy of shipping estimates by 10% by implementing algorithmic improvements, while keeping scalability in mind.

Summer Undergraduate Researcher (Project: Effects of Heavy Metals on Lipids)

May. 2018 – Aug. 2018

Department of Biological Sciences, University of Calgary

Calgary, Alberta, Canada

- > Reduced time spent on manual data parsing by 80% by using Python, Excel, and MATLAB to automate data entry and plotting.
- > Awarded with a Natural Sciences and Engineering Research Council of Canada - Undergraduate Summer Research Award.

Projects

More projects and details: michellevynguyen.com#portfolio

dpfplusplus - A C++ Implementation for Cryptographic Distributed Point Functions

Mar. 2021 – Apr. 2021

🔗 michellevynguyen.com/portfolio/dpfplusplus.html

Calgary, Alberta, Canada

- > Maintained and documented the to-be open source codebase of a cryptographic primitive's C++ implementation.
- > Enhanced user-friendliness by establishing three tutorials on how to get started with the codebase, using code examples.

uScholar - A Web Application for Academic Journal Submissions

Feb. 2020 – Apr. 2020

🔗 github.com/jonsantos/uScholar | 🔗 michellevynguyen.com/portfolio/uscholar.html

Calgary, Alberta, Canada

- > Collaborated with an agile team to tackle a web application for academic journal submissions. Built using JavaScript and Firebase.
- > Optimized database efficiency by designing the structure to reduce nesting and flatten data structures.

Jumpy Man - A Desktop Platformer Game

July. 2019 – Aug. 2019

🔗 github.com/michelle-n/JumpyMan | 🔗 michellevynguyen.com/portfolio/jumpyman.html

Calgary, Alberta, Canada

- > Created a desktop game in 6-weeks while learning Java, with GUI built using JavaFX.
- > Improved scalability by restructuring 25 classes to reduce coupling and increase cohesion.

Skills

Proficient with: Developing in C++, Python, and Java; working in Unix, Linux, and macOS environments; using Git version control.

Previous experience with: Developing in C, Assembly; parallel programming and multithreading; packet analysis with Wireshark.

Knowledge of: Processor architecture, virtual memory, inter-process communication (IPC), scheduling, POSIX, synchronization primitives, gdb, valgrind, UNIX scripting and shells, bash, embedded systems programming, TCP/IP, UDP, socket programming, agile.

Clubs and Interests

Information Security Club | University of Calgary - Member

Mar. 2020 – Apr. 2021

Competitive Programming Club | University of Calgary - Member

Sep. 2019 – Apr. 2021

Science Mentorship Program | University of Calgary - Mentor

Sep. 2017 – Apr. 2019

Cycling Team | University of Calgary - Founder/President

Sep. 2016 – Apr. 2018