

Luke Tao

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Summary of Qualifications

Skills

- C++, C, Python, JS, PHP

Tools and Frameworks

- OpenSSL, MbedTLS, (Matlab, openCV, Pytorch, Scikit-learn), (React, Express, Node, MongoDB), (Laravel, MySQL)

Work Experience

Huawei Canada, Software Engineer Intern 09/2021 – 12/2021

- Researched modern cryptographical frameworks from **NIST** and implemented various chip-compatible data authentication modules integrated into **MbedTLS** using **OpenSSL** and **C**
- Designed debug contexts in **C** and built functional unit test scripts in **Bash** for various ciphers to validate run-time correctness, consistency, and performance within different OS
- Took leading initiatives to examine, fix, and document delivery critical bugs using **Valgrind** and **GDB**, recovering code drop stability.

Kaleidescape, Systems Engineer Intern 04/2021 – 09/2021

- Assembled a user-facing global movie search system in **C++11** that is concurrent actionable and provides efficient content navigation on an industry-leading cinema playback system
- Analyzed and resolved internal caching issues within the web **JSON** configurations, decreasing average content loading time from internal queries by 15%.

Digital Extremes, Full-Stack Developer Intern 05/2020 – 09/2020

- Created multiple **Google Cloud** based scripting frameworks in **Python** to automate news parsing and content deployment, eliminating manual input throttles in the engineering cycle
- Developed global web templates and accessible widgets using **PHP** and **JS** in a **Laravel** software stack

Personal Projects

FlexiPress 03/2021 – 04/2021

- Prototyped an algorithm-flexible compression program in **C++**, with a custom file format, to support a combination of modern deflation algorithms
- Constructed to permit fully data-tailored encoding operations, improving certain compression ratios by up to 3% in comparison to **BZIP**

Vm 10/2020 – 11/2020

- Developed a custom version of Vim in **C++** to support over 50 commands, along with flexibility for extension maintained (program wide low coupling and high cohesion following MVC pattern)
- Implemented a complete terminal interface using **Ncurses** library to support cursor, text-wrapping, screen movement, and smart **C** syntax highlighting

Education

Honours Bachelor of Computer Science, University of Waterloo 09/2019 - 04/2024

- **Relevant Courses:** Operating System, Data-Structures and Algorithms (Enriched), Object-Oriented Software Development (Enriched)
- **Awards:** Duke of Edinburgh's Award Gold, President's Scholarship of Distinction, President's Research Award