Luke Tao

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Summary of Qualification

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

Tools and Frameworks
- Matlab, MySQL, OpenSSL, MbedTLS, Pytorch, openCV, Scikit-learn, MERN stack(MongoDB, Express, React, Node), Laravel

Work Experience

Huawei Canada, Software Engineer, {C, C++} 09/2021 – Present
- Research state-of-the-art cryptographical methodologies to design and innovate secure and efficient data authentication between remote, memory-constricted systems
- Optimize edge case performance on various **NIST** ciphers, AEADs, and hashing frameworks, improving empirical run-time and memory consumption in targeted OS models

Kaleidescape, Systems Engineer, {C, C++} 04/2021 – 09/2021
- Assembled a fully concurrent, user-facing global movie search framework that provides accessible and efficient content navigation on an industry-leading cinema playback system
- Analyzed and resolved run-time performance and caching issues across interfaces, decreasing average content loading time from **SQL** queries by 15%.

Digital Extremes, Full-Stack Developer, {JS, PHP} 05/2020 – 09/2020
- Ironed out the main server data pipeline by creating multiple **Google Cloud** based script frameworks to automate news parsing and content deployment, removing manual labor throttles in the engineering cycle

Project

FlexiPress,{C++, Python} 03/2021–04/2021
- Prototyped and engineered an algorithm-linking compression program, with a custom built-in file format that supports a considerable variety of modern data algorithms like **Lempel–Ziv–Welch**, **Burrows Wheeler**, **bijective Run-Length Encoding**, and etc
- Constructed to permit full data-tailored encoding operations instead of the standard "**zip** it all" sequence, decreasing most operation time without losing performance (improves average compression ratio by up to 3%)

Vm, {C++} 10/2020–11/2020
- Designed and built 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)
- Implemented a complete terminal interface using **C**'s **Ncurse** library to support cursor, text-wrapping, screen movement, and smart **C** syntax highlighting

Education

Candidate for Honours Bachelor of Computer Science, **University of Waterloo** 9/2019 - 4/2024
- **Relevant Courses**: Data-Structures and Data-Management (Enriched),Object-Oriented Software Development (Enriched), Algorithm Design and Data Abstraction (Enriched), Functional Program Design (Enriched)
- **Awards**: Duke of Edinburgh's Award Gold, President's Scholarship of Distinction, President's Research Award