Luke Tao

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Summary of Qualification

Languages
- C++, PHP, JavaScript, Python, C , Scheme, ARM64, MIPS

Tools and Frameworks
- MERN stack(MongoDB, Express, React, Node), openCV, TensorFlow, Laravel, MySQL, Jquery

Work Experience

C++ Software Engineer, Kaleidescape 04/2021 –Present(08/2021)
- Resolved image cache loading time using concurrent workers with SQL query callbacks
- Currently building LAN-specific features in a low-memory home cinema system

Full-Stack Developer, Digital Extremes 05/2020–09/2020
- Developed fully async GoogleSheet API scripts using Python and Apache to automate news parsing and content deployment, drastically improving run-time performance by over 3 times
- Assisted in the deployment of Twitch extensions during major events by automating caching and optimizing end-user transactions using Python
- Implemented back-end scripts in PHP to improve site integrity by tracking and optimizing database proxies

Project

FlexiPress, C++,Python 03/2021–Present
- Created an algorithm-complete file compression program that can support almost any combination of data encoding/decoding imaginable
- Constructed to permit full data-tailored encoding operations instead of the standard "zip it all" sequence, decreasing operation time without losing performance (improves most compression ratio by up to 3%)
- Built to perform in low-memory environment, using only C++ standard lib and efficient expected run-time
- Work in progress to support Jpeg, video formats, and ML optimizations for automatic sequence selection

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 + high cohesion)
- Implemented a complete terminal interface using C++'s Ncurse library to support cursor, text-wrapping, screen movement, and smart syntax highlighting

Experience

Stanford University, California, Summer Intern 4/2018–06/2018
- Mechanically constructed an Enigma Machine prototype using a 4070 quad-xor gate and a solenoid switch
- Coordinated with DevOps to modify Enigma algorithms and improved its runtime using Pickle and serializing the data

Education

Candidate for Honours Bachelor of Computer Science, University of Waterloo 9/2019 - 5/2024
- Favorite 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