Yu-Ching Chen

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Education

University of Toronto St. George Campus — class of 2016

Hons. B.Sc.
Computer Science Major (computer systems focus)

Professional Experience

IBM Cloud (Platform LSF)

Staff Software Developer — Jan 2018-Sept 2019

Advisory Software Developer — Sept 2019-Present

Notable projects

- ➔ Played a key role in developing LSF's hybrid-cloud capabilities, including the design and implementation of projects such as the LSF Resource Connector. This component allows LSF to interact with external cloud providers like Google Cloud, Microsoft Azure, Softlayer, and Openstack for high-performance computing needs.
- ➔ Led the team in designing and implementing a new distributed architecture from the ground up, ensuring its successful completion.
- ➔ Designed and implemented new communication protocols for LSF's multiple daemons, tackling challenges like synchronization, information encoding/decoding, compression, scalability, and deadlock/multi-process issues with a focus on high throughput and low latency.
- ➔ Developed and implemented an algorithm to normalize a weighted tree for absolute priority scheduling of users, which improved the efficiency and accuracy of scheduling in LSF.

General

- ➔ The work involves developing new features and addressing issues within a large codebase using C and Linux system libraries. Solutions were designed to be backward compatible, with particular attention given to partial updates on different versions of client and server binaries.
- ➔ Exposure to diverse compiler and kernel standards was gained while working with enterprise software supporting a range of environments, including Windows, Linux, ARM64, ppc64le, Solaris, HP-UX, AIX64, CrayX, and MacOS.
- ➔ Demonstrating a can-do attitude, I approach challenges with enthusiasm and am always willing to seek guidance from and collaborate with fellow developers to find the best solutions by comparing advantages and shortcomings.
- ➔ Efforts are made to communicate the design and ideas to the quality assurance and internal documentation teams. This includes ensuring that test cases are comprehensive and that internal documentation is precise and up-to-date.
- ➔ Extensive use of GDB was employed to debug various platforms including x86-64, ppc64le, and ARM64.
- ➔ Regular participation in meetings with customers was a crucial aspect of my role, where amicable solutions were collaboratively developed and progress updates were provided to ensure customer satisfaction.
- ➔ Authored 3 patents that were filed with the US Patent Office.

Software Developer — Jan 2017-Jan 2018

Internal Tools

- ➔ The work involves developing tools to assist with quality assurance in distributed systems, as well as analyzing a large codebase to gain a better understanding of the 25 years' worth of features.
- ➔ Explored linker options for C and C++ to implement stress programs and test frameworks that interact with LSF's C APIs in C++.
- ➔ Numerous scripts were written in Bash and Python to automate daily tasks.