

SEAN CHEN

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TECHNICAL SKILLS

Programming Languages: Java, Python, C, C++, HTML, CSS, JavaScript, TypeScript

Libraries/Frameworks: LLVM, React, Express, Bootstrap, Jest, Puppeteer, .Net, NestJS

Other: Git, Linux, GitHub, Adobe Suite, MongoDB, Node

EXPERIENCE

Huawei

April 2022 – August 2022

Compiler Software Developer - GPU Compiler Team

Markham, ON

- Developed GPU data profiling application in **Python** to produce parsed and analyzed **JSON** profiles to be used alongside the **PGO (profile guided optimization)** compiler pass
- Utilized **multiprocessing** to read data from 50 gigabyte GPU hardware log files, **reducing read time by 90%**, and **numpy** to analyze thread variation and instruction binaries within the profiler
- Implemented multiple **compiler performance optimizations** in **C++** using the **LLVM** framework reducing instruction cycles after **LLVM IR** lowering thus improving compiler heuristics and performance significantly without impacting compile time

Uptake

September 2021 – December 2021

Full Stack Developer - Equipment Solutions Team

Mississauga, ON

- Used **C#** and **.Net Framework** to create new interfaces to gather log information from quotes retrieved by the **CAT API** and reduced the technical debt for the iMacs application refactoring over **1000+ lines of code** by separating core functionalities into separate projects and creating unit tests
- Created bridge endpoints and wrote tests in **Typescript** using **NestJS** and **Jest** for store procedure calls by the bridge client ensuring a secure middle layer for future backend calls within the SQL database
- Wrote **SQL migration scripts** to add missing/new functionalities for applications used by many dealers, cleaned outdated data tables, and improved multiple features of the front-end user interface

Maplesoft

January 2021 – April 2021

Quality Assurance and Software Tester - MapleSim Team

Waterloo, ON

- Developed automated unit and integration tests within **Typescript** using the **Puppeteer API** alongside the **Jest** testing framework for custom web components utilized by Maplesoft's modelling and simulation software MapleSim
- Reconfigured front-end web components within the **Electron** framework based on bugs found within automated test results

PROJECTS

YelpCamp | JavaScript, Express, MongoDB, Node

- Developed a web application for users to review campsites with custom user authentication, comments, and image uploading features
- Utilized **Express** and **RESTful API** to coherently combine **HTML** and **NodeJS**
- Exercised authentication properties with **Passport API** and stored user data within **MongoDB Atlas**

Multi-threaded PNG-Crawler | C, cURL, pthread

- An application developed in C using shared memory and concurrency concepts used to crawl a web server for PNG slices and concatenate them together
- Developed multiple single thread renditions using shared memory and processes applying the producer-consumer solution using **semaphores** and **multi-cURL**

Automatic Door | C, proteus, MCU

- Prototyped the hardware and software components for an ultrasonic object detection module for an automatic door
- Created using a STM32F401RE MCU with features such as a configurable user interface LCD screen displaying door speeds and fallback collision switches in the case of emergencies

CERTIFICATIONS

Cyber Arts Graduate

Sep 2015 – 2019

Don Mills Collegiate Institute

Toronto, ON

- Graduated from an integrated digital arts program with 4 years of Adobe Suite graphic design experience

EDUCATION

University of Waterloo

Sep 2019 – Present

Bachelor of Science in Computer Engineering

Waterloo, ON

- **Relevant Courses:** Systems Program Concurrency, Digital Computers, Probability Theory and Statistics, and Algorithms and Data Structures