Ian Lai

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Education

University of Waterloo
Candidate for Bachelor of Computer Science

Skills

Programming
- HTML5 / CSS3
- Javascript ES6
- Typescript
- Angular 4
- RxJS
- NodeJS
- C++
- C
- Python
- Racket

Development Tools
- Mercurial
- Git
- IntelliJ Idea
- Sublime Text
- Vi
- Linux
- BASH

Interests

Dragonboat
Coached UWDBC Recreational team in 2017 and 2018

Taekwondo
Earned a first dan black belt, recognized by the World Taekwondo Federation

Musicals
My favourites include Les Misérables, Dear Evan Hansen, and Hamilton

Chess
Always ready for a game

Trombone
Everything from classical orchestra to big band jazz

Employment

Visier, Software Developer Co-op   September 2017 to April 2018
- Developed methods to consume information and present it in a meaningful manner
- Implemented an application wide high contrast mode to aid with visibility on projectors for sales demonstrations
- Assisted with a complete visual overhaul of the entire application for HR Tech 2017
- Gained extensive experience with Angular 4, RxJS, and CSS

Humber Institute of Technology, Math Learning Support   January 2017 to April 2017
- Supported post-secondary students with their Math and Computer Programming courses
- Learned to efficiently absorb and teach concepts to students
- Organized and executed events for the Math Centre
- Assisted in the migration of the Math Centre's Headstart program from an OpenEducation platform to Learn

Byte Camp Education Society, Lead Instructor in Training   May 2016 to August 2016
- Taught children aged 9 - 14 how to build games with Scratch, Javascript, and PhaserJS
- Gained a deep understanding of core game design principles
- Ensured general safety of the students throughout the week
- Strengthened leadership, communication, and interpersonal skills

Projects

OS/161 Kernel   2018
- Developed in C
- Built on top of Harvard's OS/161 for the MIPS architecture
- Implemented crucial kernel components such as synchronization primitives, system calls, support for multiple processes, TLBs, and page tables

Juggle   2017
- Implemented a basic physics engine to emulate the Facebook Messenger soccer juggling game
- Leveraged CSS to minimize Javascript usage and achieve a smooth playing experience
- Featured a game speed slider to modify difficulty

GraphHax   2017
- Implemented an in browser graph theory visualization tool in Javascript
- Developed a toolbox style interface to access manipulation functions
- Learned to use version control systems to develop alongside others

WLP4 Compiler   2017
- Built from scratch in C++
- Compiled C like language WLP4 to MIPS machine code
- Featured types, pointers, a stack, and functions
- Implemented lexing, parsing, semantic analysis, type checking, and assembling

Quadris   2016
- Used C++ and X11 to create a Tetris style command line based game
- Featured customizable block shapes and an expandable playing field as game options
- Gained a strong understanding of object oriented programming and various data structures