Brian Tran

3A Computer Engineering

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// SKILLS

Languages
JavaScript, Python, SQL, C#, C++, C, Java, HTML, CSS

Libraries
Node.js, Express, React, jQuery, three.js, Bootstrap, Polymer, Jasmine, Selenium, .NET

Tools
AWS, Bash, Git, Perforce, npm, Karma, WebRTC, WebSockets, Visual Studio, Webstorm

Miscellaneous
TCP/IP, Linux, Windows, macOS, Agile, Scrum, Object-Oriented Programming

// EDUCATION

University of Waterloo
Computer Engineering, 2020
Algorithms and Data Structures
Operating Systems
Digital Computers
Embedded Systems
Compilers

// AWARDS

Dean's Honours List, Winter 2016
President's Scholarship of Distinction
Top Ontario Scholar, DPCDSB
3rd Place, Gamemaker Contest
Ontario Volunteer Service Award

// LEADERSHIP

Orientation Week Leader
Technology Lead for CUTC 2017
PLASP Child Care Volunteer, 5 years

// INTERESTS

Gaming, Singing, Fitness, Psychology, Computer Graphics, Computer Vision

// EXPERIENCE

Software Developer, *National Instruments*
September 2017 - December 2017

- Created communication channels to stream and view real-time data over WebRTC
- Worked on a scrum team to develop Multisim Live, a web app for circuit simulation
- Optimized browser memory usage by preventing duplication of identical datasets
- Improved reliability and maintainabilty by building up a Selenium testing suite
- Designed a state manager in JS to notify all peers of status updates from hardware devices
- Improved time to fetch web resources using caches in order to increase responsiveness

Full-Stack Web Developer, *VIQ Solutions*
January 2017 - April 2017

- Built a RESTful Web API used to control Windows video recording software from a mobile app
- Created a custom MPEG-DASH streaming video player with JavaScript Media Source Extensions to reduce bandwidth costs and improve security
- Developed quiz distribution and grading for an education portal using .NET and SQL Server
- Designed and implemented a modified back-end infrastructure for an existing audio/video product ecosystem
- Demonstrated products to potential clients with the sales team to help secure high-value contracts worth over $400k

Web Developer, *Intellisoft Development Inc.*
May 2016 - August 2016

- Rebuilt a college's course search tool using AJAX and caching to return results over 2x as fast
- Implemented custom user analytics on the course search tool to gather detailed user data from over 1 million visits per year
- Collaborated with teammates and stakeholders to implement a shopping cart for adding and comparing courses
- Stored and analyzed page visit data to recommend popular related courses to users

// PROJECTS

threeRTC, *3D browser game with real-time communication*

- Developed a 3D game in the browser that uses a phone as a motion controller
- Communicated real-time gyroscope data from the phone to the desktop browser with WebRTC
- Calculated motion of 3D objects and implemented collisions using three.js and cannon.js

Autonomous Driving, *UW Robot Racing Design Team*

- Developing robust lane detection for an autonomous driving robot competing in IARRC 2018
- Prototyped image processing methods in MATLAB and implemented in C++ using OpenCV on ROS
- Researched current computer vision techniques to account for lighting variations on the road

Cartastic, *Object classification*

- Teamed up at MSFTHacks to build an app that adds food items to a cart and provides recipes
- Identified food items from photos using Microsoft's Computer Vision API

Chocolate Sweeper, *Minesweeper-inspired game*

- Applied OOP principles to organize object hierarchies and functions in a Minesweeper game
- Wrote a breadth-first search algorithm to reveal adjacent tiles upon user click