Brian Tran

4A Computer Engineering

Email: brian.tran@edu.uwaterloo.ca
LinkedIn: linkedin.com/in/tranbrian10
GitHub: github.com/tranbrian10

// SKILLS

Languages

C++, JavaScript, Python, Bash, C#, SQL, MATLAB, HTML, CSS

Libraries

STL, Unreal Engine 4, OpenCV, ROS, .NET, Node.js, React, three.js

Tools

Git, Docker, Visual Studio, WebRTC, WebSockets

// EDUCATION

University of Waterloo

Computer Engineering, April 2020

Algorithms and Data Structures
Cooperative and Adaptive Algorithms
Operating Systems
Computer Networks
Computer Security
Embedded Systems
Digital Hardware Systems
Robot Dynamics and Control

// AWARDS

Best Security Hack, EngHack 2018
Dean's Honours List
President's Scholarship of Distinction
Top Ontario Scholar, DPCDSB
3rd Place, Gamemaker Contest
Ontario Volunteer Service Award

// LEADERSHIP

Waterloo Orientation Week Leader
Technology Lead for CUTC 2017

// INTERESTS

Simulations
Human-Computer Interaction
Robotics
Bouldering
Photography

// EXPERIENCE

Software Developer, *NVIDIA*

Santa Clara | Jan 19 - Apr 19

- Designed a lane assignment algorithm in C++ for autonomous vehicle localization
- Developed error metrics to track localization performance using Python scripts
- Generated metrics in parallel on a GPU-accelerated cloud using Docker containers

Undergraduate Research Assistant, *University of Waterloo WISE Lab*

Waterloo | Sept 18 - Dec 18

- Investigated accuracy and performance improvements for time-to-collision metrics

Autonomous Vehicle Simulation Developer, *University of Waterloo WISE Lab*

Waterloo | May 18 - Aug 18

- Built up a simulation environment for AV testing using Unreal Engine 4 and ROS
- Simulated the output of the car's LIDAR sensor and object detection module
- Designed a framework for calculating, monitoring, and visualizing metrics

Software Developer R&D, *National Instruments*

Toronto | Sept 17 - Dec 17

- Developed features for Multisim Live, a web app for circuit simulation
- Managed a remote test probe in real-time using WebRTC data channels
- Improved time to fetch resources using caches to increase responsiveness

Full-Stack Web Developer, *VIQ Solutions*

Toronto | Jan 17 - Apr 17

- Created a RESTful Web API to control video recording software from a mobile app
- Built an MPEG-DASH streaming video player to reduce bandwidth costs
- Demonstrated products to clients to help secure over $400k in funding

Web Developer, *Intellisoft Development Inc.*

Toronto | May 16 - Aug 16

- Rebuilt a college's course search tool with caching to return results over 2x as fast
- Stored and analyzed page visit data to recommend popular related courses to users

// PROJECTS

Simulation Developer, *Coursera Self-Driving Cars specialization*

- Finalized simulation environments and developed course materials

Autonomous Driving, *UW Robot Racing design team*

- Developed robust real-time lane detection for an autonomous racing robot
- Implemented image processing algorithms in C++ using OpenCV running on ROS

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 phone gyroscope data to the browser using WebRTC

WAV Audio Player, *Embedded audio player on an Altera FPGA*

- Worked with buffers in C to play audio files from an SD card with minimal distortion
- Implemented features such as fast-forward, rewind, play/pause, and skip