

Brian Sun

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EDUCATION

University of British Columbia

Sep 2019 – May 2024 (Expected)

Bachelor of Applied Science in Engineering Physics

Vancouver, BC

Coursework: Applied Linear Algebra, Software Construction, Machine Learning, Math Proof, Instrument Design

SKILLS

Languages: Java, Python, C++, JavaScript, HTML/CSS, Bash, PowerShell

Frameworks: React, Node.js, Spring Boot, MongoDB, PyQt, ROS, OpenCV, JUnit, GTest

Tools/Environment: Git, Azure, Linux, VS Code, Visual Studio, IntelliJ, Jupyter, Arduino IDE

EXPERIENCE

Software Engineer Intern (Incoming)

May 2022 – Aug 2022

Amazon

Vancouver, BC

- Scheduled to complete a 4-month internship at Amazon Web Services on the Elastic Container Services team

Site Reliability Engineer Intern

Jan 2021 – Apr 2021

Oxford Properties Group

Toronto, ON

- Developed scalable and well-tested automation code using Python and PowerShell and deployed on Azure DevOps
- Improved offboarding process efficiency by 200% using a PowerShell script with ServiceNow integration
- Revamped security across DevOps code base of over 8000 lines by implementing Azure Key Vault authentication
- Managed projects of 10 other developers following Agile principles, using Jira to organize work

Software Developer

Sep 2020 – Present

UBC Thunderbots Design Team

Vancouver, BC

- Developed soccer-playing AI in C++ and a simulation visualizer using PyQt while working with 15 students
- Designed a PyQtGraph visualizer in Python with full back-end integration and real-time logging messages to view soccer game simulation
- Increased code coverage of firmware primitives by 35% by writing unit tests using Google Test framework
- Implemented a macro to duplicate tactics, reducing development time of new tactics by 100% during competitions

PROJECTS

Self-Driving Car Simulation | *Python, ROS, OpenCV, TensorFlow, Linux*

Jan 2022 – Feb 2022

- Developed algorithm in Python using OpenCV for lane following, traffic avoidance, and pedestrian detection
- Trained a convolution neural network using Keras framework against 1000+ data points to identify license plates
- Built robot model and simulation in ROS and implemented 3 plugins such as a camera
- Tested and evaluated over 15 PID and reinforcement learning driving algorithms in Gazebo

NwHacks 2022 | *React, Spring Boot, Node.js, MongoDB, Auth0*

Jan 2022

- Developed full-stack web application serving as a learning platform while working in a team of 4
- Spearheaded front-end design with React and created over 10 components including a multiple-choice quiz editor
- Developed RESTful APIs to serve the React front-end, and which interact with a MongoDB database
- Implemented Auth0 API to authenticate users, which allows for a personalized UI

Sample-Retrieving Robot | *C++, STM32 BluePill, VS Code, PlatformIO*

May 2021 – Aug 2021

- Led a team of 3 in designing and fabricating a robot, including its embedded software, chassis, and circuits
- Developed a Finite State Machine software model in C++, allowing robot to transition smoothly between driving, pick-up, and drop off states
- Implemented a PID driving algorithm that takes input from 2 sensors and enables robot to follow a black line
- Placed 3rd place out of 16 teams in final competition based on robot performance

Virtual World Simulation | *Java, JUnit, IntelliJ*

Sep 2020 – Oct 2020

- Built Java program that supports a virtual 2D world in which 10+ entities interact with one another
- Developed AI for fox and rabbit entity to maximize survival rate and scored in the top 25% of the course
- Wrote unit tests using JUnit for over 8000+ lines of code and used a GUI to visualize the world