

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.
- Automated employee off-boarding using a script to improve process efficiency by up to 200%.
- Renovated 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++ on Linux while collaborating with over 15 developers.
- Designed a PyQtGraph visualizer in Python to watch the AI play soccer in real-time, with features like toggleable layers and real-time logging messages.
- Built unit testing frameworks using GTest for firmware primitives to increase code coverage by 35%.
- Implemented a macro to duplicate tactic classes, reducing development time of new tactics by 100%.

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.
- Performed testing and evaluated over 15 driving algorithms in Gazebo.

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

Jan 2022

- Developed full-stack web application allowing users to create, view, and study interactive lessons.
- 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

- Designed and fabricated 3 autonomous robots including writing software, designing and soldering controller boards, and manufacturing mechanical parts.
- Developed a Finite State Machine software architecture, allowing robot to drive, operate arm, and drop-off cans.
- Implemented and tuned a PID driving algorithm to read from 2 sensors and make robot follow a tape path.
- 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 world in which 10+ entities interact with one another on a 2D field.
- Developed AI for fox and rabbit entity to maximize survival rate and scored in the top 25% of the competition.
- Wrote unit testing frameworks using JUnit for over 8000+ lines of code and used a GUI to visualize the world.