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, C, C++, Python, JavaScript, Bash, PowerShell, Matlab
Frameworks: React, Node.js, Spring Boot, MongoDB, 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 on the AWS 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 OS while collaborating with over 15 developers.
- Built unit testing frameworks using GTest for firmware primitives to increase code coverage by 35%.
- Implemented a view reset button for robot simulator, improving debugging efficiency by 25% for software team.
- Revamped playing tactics to follow competition rules, making robots drive slowly when referee stops game.

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 reading 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.