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

Skills

Languages: Java, Python, C++, JavaScript, TypeScript, HTML/CSS, SQL
Frameworks: React, Node.js, Spring Boot, MongoDB, PyQt, ROS, OpenCV, JUnit, GTest
Tools/Environment: Git, AWS, Azure, Linux, VS Code, Visual Studio, IntelliJ, Jupyter, Arduino IDE

Experience

Software Development Engineer Intern May 2022 – Aug 2022
Amazon *Vancouver, BC*
- Working on Amazon Connect Contact Lens, a ML-powered speech analytics tool for contact centers
- Designing and implementing a database for customer call analysis data using AWS services and TypeScript
- Defining test cases and sample queries using SQL for Amazon Cloudwatch and Athena
- Developing formal report including security and release plan to deploy new service to 3500+ companies

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* Mar 2022
- Developed algorithms in Python using OpenCV for lane following, traffic avoidance, and pedestrian detection
- Trained and validated 5 convolution neural networks on 1000+ data points to identify characters on license plates
- Improved neural network accuracy from 60% to 99.9% by writing data augmentation scripts in Python
- Placed 2nd in UBC Engineering Physics program competition

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 out of 16 teams in final competition based on robot performance