Tommy Lau

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EMPLOYMENT

Tesla, Software Engineer Intern **Aug 2018 – Present**

- Added user interface features, improving ease-of-use for users remotely updating and monitoring data on the global fleet of Powerpacks/Powerwalls. (JavaScript, Python)
- Developed an application in Python to speed up an alerting engine by distributing tasks using Apache Airflow/Celery.
- Created containerized testing and development environments with Docker.

Tesla, Firmware Engineer Intern **May 2018 – Aug 2018**

- Developed real-time software for the Model 3 electric parking brake system in C, contributing to safety-critical functions.
- Created a feature to handle fault conditions and malfunctions caused by erroneously disconnecting the parking brake.
- Reduced false alarms across the Model 3 fleet of 80,000 cars, cutting down service costs for Tesla and customers.
- Designed unit and integration tests to validate system behavior using Cgreen, reducing review time.

University of British Columbia, Undergraduate Teaching Assistant **Sept 2015 – May 2018**

- Taught up to 30 students at a time in labs for multiple courses in Data Structures and Algorithms (CPSC259/CPSC221)
- Mentored students in topics for data structures, algorithms, memory management, and complexity using C/C++.

Arista Networks, Hardware Engineer Intern **Sept 2016 – Aug 2017**

- Developed a circuit breaker monitoring system on the Linux-based BeagleBone microcomputer in Python for monitoring fault conditions, enabling network access, and controlling power-supply ports. The system was produced in small quantities for internal use, increasing throughput of QA by supplying power to Devices-Under-Test.

LMI Technologies, Hardware Engineer Co-op **Jan 2016 – Aug 2016**

- Designed electronics for a fan-adapter system to be sold as an attachment for cooling down existing 3D laser-scanners.
- Determined the performance of laser diodes for selection to be used in the next-generation 3D line-profile scanner.

PROJECTS

Bumper – Multiplayer Game bumper.ubclaunchpad.com **Jan 2018 – Present**

- Designed and developed a multiplayer bumper-car and physics based browser game
- Front-end rendering developed in Javascript using React and HTML Canvas.
- Developed a game server using Go, connecting client-server communication using the WebSocket protocol
- Automated build, test, and deployment using Docker, Travis CI, and AWS EC2.

BestBuy Automated Price Match BizHacks 2018 **March 2018**

- Awarded 4th place prize overall in BestBuy's sponsored hackathon, each team member receiving 50$ gift cards
- Designed a web application to read URL's or flyers using optical character recognition and automatically match the lowest price-offering by comparing a product with BestBuy's competitor price database
- Developed front-end components using JavaScript/React and parsed product data in JSON format

Mazdis – Mobile Application Senior Year Capstone Project **Sept 2017 – April 2018**

- Collaborated with Mazdis Innovations to create a cross-platform mobile application (Android, iOS) for an automated bicycle parking system. The application communicates with secured parking structures to store and release bicycles
- Developed an alpha version of the mobile application using JavaScript/React Native and Firebase REST API.

EDUCATION

University of British Columbia – B.ASc. Electrical Engineering **Sept 2014 – May 2019**

SKILLS

Languages: C++, C, JavaScript, Python, Go, Verilog
Frameworks: React, React Native, Firebase
Tools: Git, Firebase, Docker, Vagrant, Jenkins