DAN HUYNH

Mechatronics Engineering | danielryanh7@gmail.com | danielrh.ca | LinkedIn | GitHub

+ SUMMARY

- **Languages:** C/C++, Java, Python, JavaScript/TypeScript, HTML/SCSS, SQL, Swift/Swift UI, PHP
- **Libraries & Frameworks & Tools:** Git, Drone/Harness, Tekton, ROS, Docker, React.js, Node.js, Flask, TensorFlow, PoseNet…
- 4+ years of experience in designing mechanical equipment using **SolidWorks** and **AutoCAD**
- Skilled and personable communicator that loves working with others

+ PROFESSIONAL EXPERIENCE

Software Engineer | Ford Motor Company | September 2022 – December 2022

- Created several dynamic components including a data-model agnostic autocomplete component using **React Typescript**, that queries 1000+ **Firestore** records for objects that fit a **Regex** string on one of 7+ record properties.
- Created asynchronous REST API methods using **Axios** that reads/writes to 1000+ records in a CRUD **Firestore** database.
- Created a reactive filter-drawer using **Invision** designs that filter through 1000+ records by 7+ criterion whilst dynamically updating the present filter state with a visual indication.
- Leveraged TDD by creating mocks with **Jest & JestDom** to develop test suites that authenticate **React** apps and REST APIs.
- Actively participated in Ford's **agile** work environment and demonstrated leadership by contributing to daily stand-ups, weekly IPMs, platform presentations, and aiding co-op students on other product lines.
- Received the **Ford Modernization Recognition Award** ($100) for making significant contributions to the Ford Pro Gateway.

ERP Full-Stack Developer | G.B.I.E | January 2022 – April 2022

- Implemented a self-proprietary method of caching **SQL** results within **PHP** which improved the load time of web pages by up to 643.5% (from 1.48 s to 0.23 s).
- Designed six connected **MSSQL** tables using star schema warehouse data architecture and wrote queries that scraped data from a variety of 73 tables to gather quality data pertaining to the prediction and planning of product shipments.
- Created an essential large-scale internal system used daily by the R&D department using **Python**, **Flask**, **JavaScript** and **MSSQL** that allows employees to create, log time spent, and query lab requests / contributions.
- Created a function using **Openpyxl**, and **Pandas** which automates the generation of excel reports that display lab report details for ISO auditors, and SR&ED applications, saving the R&D more than 30 hours of manual labour per year.

+ PROJECTS

LiftBro | 2022

- Developed an AI-based personal trainer using **React**, **Electron**, **TensorFlow**, and **PoseNet** that tracks demonstrated poses using 17 body indices to train a 3-dense layer sequential model which identifies movements to track one's workout.
- Created several dynamic stateful **React** components that contain the **React-Webcam**, current workout statistics, and an **MUI** naive-select form that houses several movements that the user may train.
- Utilized a pre-trained **PoseNet** estimation algorithm that returns a heat map, and offset vectors that find pose key points, whilst leveraging **PoseNet** functions to visually indicate 17 indices and create a skeletal frame that may be tracked.
- Defined a sequential model by utilizing the **TensorFlow** API and one-hot-encoding, which was fit to a tracked movement and stored within local storage. Prediction functions obtained the movement that corresponds to the demonstrated pose.
- Deployed using a **Heroku CI/CD** pipeline.

ROS Noetic Motor Controller Driver | 2022

- Developed a driver for a speed-controlled motor using **C++ (OOP)** which was wrapped with **ROS Noetic**.
- Wrapped **C++** getters and setters with publishers and subscribers to read/write to the motor's status, speed, and max speed.
- Implemented a 4 threaded AsyncSpinner which stops the motor using a **ROS** Service to avoid freezing on call-backs.

Self-Parking Robot | 2021

- Developed a program written within **C** that allows an integrated LEGO EV3 robot to use ultrasonic, and colour sensors to successfully locate a suitable parking space and perform a parallel park.
- Implemented error handling that utilises a motor encoder and an ultrasonic sensor to prevent the robot from colliding with nearby objects and attempting to park in an opening of a distance within than a predetermined threshold.
- Wrote technical documentation that included function descriptions, a software design outline, and a full system test which resulted in a grade of 99% in conjunction with the project source code in the capstone project of MTE 121.

Project files and a detailed description of each project can be found by visiting my GitHub

+ EDUCATION

University of Waterloo | 2021-Present | GPA: 3.9 | Honours BASc. (Mechatronics Engineering Co-op) Candidate

Queen's University | 2020-2021 | GPA: 4.0 | BASc. (Computer Engineering) Candidate | Queen's University Excellence Scholarship

Glenview Park Secondary School | 2016-2020 | Average: 94% | 16x awards + 8x Honour Roll + Ontario Scholar + Valedictorian Nominee