

# Alvin Marquez - Electrical Engineering (M.A.Sc.)

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## SKILLS AND PROJECTS

**Programming Skills:** Python, C++, Bash Shell, Java

**Tools:** VS Code, Git, JIRA, MATLAB, Simulink, Android Studio

**Operating Systems:** Linux (Ubuntu & Debian), Windows 7/10

**Others:** Robot Operating System (ROS), Kalman Filter, Sensor fusion, CAN protocol, Ultra-wideband, Test Automation

**Autonomous Ground Vehicles** - Designed and implemented an autonomous ground vehicle for continued indoor positioning research.

Created an indoor positioning system using an IMU, Beaglebone and ultra-wideband transceivers.

Implemented sensor communication and fusion using ROS and Kalman Filter. Produced analytical comparisons and conclusions using MATLAB.

## EXPERIENCE

**Ford Motor Company** – *Stability Engineer - Infotainment Automation*

March 2020 - Current

- Developed automated test cases using Python slash, selenium, and RPyC for stability test scenarios
- Utilized agile methodology to deliver new features/hotfixes, and contributed in code reviews using Github enterprise
- Maintained Python packages using internal pypi and Git servers

**Danlaw** – *Software Engineer - Validation for DataLogger*

February 2019 - March 2020

- Developed scalable test cases using Python pandas & pytest for test automation and entrypoints for a command line interface
- Analysed fleet devices' data using Python & bash to parse logs from DataLogger & CAN bus to effectively catch field issues

**Avidbots Corp** – *Applications Engineer - Autonomous Robots*

November 2017 - December 2018

- Utilized Linux, ROS, Python & bash scripting to manage & debug fleet operation of 100+ autonomous floor scrubbers
- Developed scripts to conclude accurate root cause analyses

## EDUCATION

**University of Windsor, Ontario** – *Master of Applied Science (M.A.Sc.) with Thesis - Electrical Engineering*

- Graduating class of 2017 with a 85.75 out of 100 GPA

**Udacity** – *Android Basics Nanodegree by Google*

Designed and created a News Feed app that gathers and displays articles in the 'Game' category using the Guardian News API.  
(<https://github.com/ehmarquez/GuardianNews>)