

# Victor M. Lopez Rodriguez

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- <https://vmlopezr.github.io/Portfolio>
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## Core Technical Skills

**Front End:** React.js, three.js, Angular, Ionic Framework, HTML5, CSS

**Back end:** Python, Node, SQLite

**Other:** C, C++, Git, Shell script, Batch script, LabVIEW, TINA-TI, LTSpice

## Engineering Experience

### Summit ESP, A Halliburton Company — Controls Engineering Co-op

*Tulsa, Oklahoma*

August 2018 - May 2019

- Developed a kivy python front-end application for test, validation and logging of up to 32 pressure transducers, reducing test completion time by 90% down to 1 hour. (Python, SQLite)
- Created a raspberry pi modbus server to store live pressure transducer data retrieved via SPI peripheral. (Python)
- Constructed a batch script that configures ethernet routers via SSH protocol to establish ethernet communications in multi-drive well-sites. (Batch Scripting, Teraterm)
- Built ladder logic on an Idec FC6A+ PLC to enable ModbusTCP in Summit Products for use in ethernet networks. (Ladder Logic)
- Redesigned the existing LabVIEW Product test to replace serial communications with ModbusTCP. Thus allowing stesting of the new company instrument and data logging to SQLite databases. (LabView, SQLite)

### Lyondellbasell, Houston Refinery — Electrical Engineering Co-op

*Houston, Texas*

May 2019-August 2019

- Developed an excel dashboard depicting the electrical sub-system to be used for capital and long term planning.
- Discovered the susceptibility of two critical 12KV motors to insulation failure by identifying increasing negative polarity trend in Partial Discharge monitoring data.

## Projects

### WS2812 Modular Display:

<https://github.com/vmlopezr/modular-ws2812-display-esp32>

August 2019 - May 2020

- Developed phone application that supplies real-time data to ESP32 microcontroller via websockets. (React Native)
- Established firmware to configure an ESP32 access point as well as led display driver state machine. (C++, ESP32)

### RaspberryPi Dashcam:

<https://github.com/vmlopezr/rpi-dashcam>

August 2019 - Present

- Constructed Shell script to configure a wireless Access Point and install the Real Time Clock. (Shell Script)
- Developed website application served from a raspberry pi which records videos and provides livestream via a NodeJS server. (TypeScript, Ionic Framework, Node JS)
- Created a docker image for easy installation on raspberry pi 3b/4b. (Docker)

### OWI Robot Arm Model:

<https://github.com/vmlopezr/owi-arm-model>

April 2020 - May 2020

- Designed a 3D model of a OWI robot arm to visualize the motion of a 4-rotation joint robot arm. (React.js, three.js)
- Vizualize forward kinematics by allowing control of the joint parameters/angles.

### OWI Robot Arm Color Sorting:

[https://github.com/vmlopezr/ECE5330\\_6311\\_Final\\_Project](https://github.com/vmlopezr/ECE5330_6311_Final_Project)

November 2019 - December 2019

- Developed embedded program controlling an OWI Robot arm with an STM32F4 microcontroller. (C, STM32)
- Developed OpenCV Python program for color detection. Camera positioning data transferred through USART peripheral via DMA controller. (Python)

## Education

### University of Houston

*Dual Degree, B.S. Electrical Engineering, and B.S. Mathematics - CGPA: 3.6, EGPA: 3.57, MGPA: 3.81*

May 2020

*Houston, TX*