

# Omar Naffaa

omarnaffaa.on@gmail.com | (909) 456 – 5915 | omarnaffaa.github.io/Portfolio | www.linkedin.com/in/omnaffaa

## EDUCATION

**California State Polytechnic University Pomona**

**December 2020**

Bachelor of Science in Computer Engineering (GPA: 3.81/4.0)

## TECHNICAL SKILLS

**Programming Languages:** C, C++, Python, Verilog, Java, C#, HTML, CSS, MATLAB, Bash, Pic Assembly

**Software / Protocols:** Ignition, Linux / Unix, OpenCV, Git/GitHub, TCP/IP, REST, JSON, UDP, Modbus, OPC

**Lab Equipment:** Oscilloscopes, Multimeters, Function Generator, Spectrum Analyzer

## WORK EXPERIENCE

**Systems Engineering Intern – Niagara Bottling**

**May 2020 – Present**

- Designed a secure user management interface to allow external team members to add users to Niagara's Ignition Gateway, reducing employee downtime to access Ignition projects
- Automated Ignition gateway setup for future plants using Python scripting to generate a standardized tag folder structure and connect OPC UA devices with minimal user input
- Developed timer scripts within Ignition to pull data from plant Injection machines using REST API to populate QA HMI fields, reducing QA technician review time from 15 minutes to 5 minutes

**IT Intern – Niagara Bottling**

**June 2019 – August 2019**

- Developed a very low-cost self-checkout kiosk prototype using a Raspberry Pi, USB webcam and open source software libraries including OpenCV and GTK+ 3
- Programmed a responsive UI that sends scanned data to the warehouse database using REST API, opening the warehouse gate without human intervention
- Implemented Modbus TCP/IP client to interface with Modbus server on-board JN10R Ethernet I/O controller

## RESEARCH

**Senior Design Project – 5G Self-Healing Network Simulation**

**September 2018 – May 2020**

- Applied C++ object-oriented design in the implementation of a cross-platform Self-Healing 5G network simulator
- Proposed and implemented a heuristic self-healing algorithm that will be used to heal towers in the simulated network
- Developed a graphical user interface (GUI) with GTK+3 to collect input parameters needed from the end user

**Undergraduate Researcher – Decentralized Wastewater Treatment System**

**June 2018 – June 2019**

- Worked to create an embedded application to monitor various water parameters
- Used REST API to send the state of buttons in an application through the cloud to a mock system
- Created a graphical user interface (GUI) using material design principles to enhance style and readability
- Performed JSON requests to push and pull data from the cloud using Internet of Things (IOT) platform ThingSpeak
- Published conference paper in IEEE 43rd Annual Computer Software and Applications Conference (COMPSAC)

## PROJECTS

**Big Data Analytics for 5G Self-Healing**

- Created a simple decision tree model in Python to determine network basestation statuses using sklearn python library
- Configured a big data system on AWS using S3, EMR, and EC2

**FPGA Based Frequency / Period Meter**

- Implemented Frequency / Period Meter using Verilog, Xilinx Nexys A7, and a Digilent DAC Module
- Programmed Verilog modules to read a frequency from the function generator as a binary value, map the value to a BCD equivalent, and display an accurate reading using the 7-Segment displays present on the FPGA

## CLUBS AND ORGANIZATIONS

**Institute of Electrical and Electronics Engineers (IEEE), Secretary**

**May 2019 – Present**

- Responsible for managing communications with over 50 club members by integrating the Google Suite with our club website, increasing board member efficiency by 20%

**Kellogg Honors College**

**June 2017 – Present**