Abbass Ayoub

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Education

Candidate for BASc, Electrical and Computer Engineering **Sept. 2015 – May 2019**
Wayne State University Detroit, MI
Awards: Ford's Blue Oval Vehicle Scholarship, Dean's list (2015-2018) **GPA:** 3.83

Professional Experience

NIO, Systems Engineering Intern – San Jose, CA **June 2018 – Aug. 2018**

- Lead validation engineer for Firmware Over the Air (FOTA) system in test vehicles
- Automated FOTA initialization processes to increase test-time efficiency by 40% using bash scripts
- Monitored ECU signals on the CANBUS using NTester & CANalyzer
- Discussed the status of FOTA with managers and engineers across multiple teams
- Created a standard operation procedure to help future engineers conduct proper validation

CenterLine Ltd, Product Development Intern – Windsor, ON **May 2016 – Aug. 2016**

- Programmed a wireless load cell to measure force on resistance welders
- Optimized strain-gauge circuits for power consumption, raw data accuracy, and RF range
- Designed and assembled PCBs for Cold Spray Technology
- Developed a testing system for reading voltages across a multiplexed platform using I^2C to validate output voltages of LVDTs

Technical Knowledge

Hardware:

- Implemented various hardware technologies including:
  - PIR, Ultrasonic, IMU, and Photodetector sensors
  - MOSFETs/BJTs, OpAmps, PWM, Filters, Rectifiers, and RF transmitters
- Application of programmable microcontrollers such as Arduino and Raspberry Pi
- Knowledge of electronic packaging issues (EMC, interference, tolerance stack-up)
- Troubleshooting circuits for noise and discontinuity with standard EE lab instruments

Software and Design:

- Languages: Python, C/C++, Java, MATLAB, Javascript
- Tools: CANalyzer, PCB Eagle, Multisim, Fusion 360, Linux, Bash

Projects

EMG Signal Amplifier

- Amplified micro-voltage input from electrodes to control DC components
- Utilized an instrumentation amplifier, band-pass filter & full wave rectifier to generate a DC signal proportional to the intensity of the muscular contraction

Alexa, Who's At The Door? – Facial Recognition System

- Created voice-controlled facial recognition system that identifies visitors at your front door
- Top 1% featured projects on Hackster.io with over 20K views – hackster.io/a-ayoub | git.io/door
- Developed with Raspberry Pi, Amazon Echo, Javascript, NodeJS and Firebase database