Robert C. Crimmins

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OBJECTIVE: Detail-oriented Electrical Engineer with 5+ years of experience looking for exciting opportunities

EDUCATION:

Worcester Polytechnic Institute

- Master of Science: Electrical and Computer Engineering — December 2018
- Bachelor of Science: Electrical and Computer Engineering — May 2016
- Bachelor of Science: Robotics Engineering — May 2016

PROFESSIONAL EXPERIENCE:

Argo AI – Hardware Engineer, Princeton, NJ — **October 2021 – Present**

- Designed schematics and layouts for multilayer high-speed rigid and flex PCBs
- Characterized, verified, and validated all PCBAs within the LiDAR Sensor Head
- Triaged and resolved issues for current and legacy LiDAR sensors on fleet vehicles
- Collaborated with OEM partners towards automotive qualifying Argo LiDAR (ISO, USCAR, SAE, AEC)
- Scaled prototype designs to 2000+ unit production with global contract manufacturers (DFM, fixtures, calibration)
- Incorporated and validated automotive functional safety techniques at the board level within the LiDAR

Raytheon Technologies – Electrical Engineer, Princeton, NJ — **February 2020 – October 2021**

- Designed PCBAs to bring up our next-generation low-power, small form factor, short wave infrared cameras
- Developed electrical equipment for evaluating and characterizing readout integrated circuits (ROICs)
- Resolved day to day technical problems on production lines to minimize disruption
- Wrote python scripts to automate data collection for performance and reliability testing of products
- Devised a modular and scalable test fixture solution for current and future camera platforms

Self-Employed – Property Manager, New York, NY — **February 2019 – October 2019**

- Conducted full renovations for multiple apartments and properties
- Learned multiple skilled trades – networks, plumbing, electrical, framing, painting, tiling, flooring

Tesla, Inc. – Hardware Technology Engineer Intern, Palo Alto, CA — **August 2017 – January 2018**

- Developed a high-performance power distribution and communication architecture for the Model Y
- Evaluated impacts of implementing a decentralized architecture
- Built a full-scale operational prototype vehicle utilizing the new architecture for performance testing
- Improved processes to streamline and automate wire harness assembly into production
- Implemented significant cost reduction methods within vehicle platform and assembly
- Patented Wiring System Architecture - Application #16231314 - Publication #20190217794

SpaceX – Avionics Integration Engineer Intern, Los Angeles, CA — **August 2016 – January 2017**

- Created a data acquisition printed circuit board for a family of sensors on the vehicle
- Contributed towards development of the Block 4 avionics upgrade for Falcon 9 and Falcon Heavy
- Built and tested hardware-in-the-loop test rack used to simulate various launch scenarios
- Drew wiring harness schematics for testing and engineering development applications
- Developed onshore and offshore landing pad network and power architecture for post-mission vehicle operations
- Designed a payload separation simulator to validate flight computer electrical signal performance

SKILLS:

Hardware: Xilinx Zynq MPSoC, Altera Cyclone V, ARM Cortex M-Series, Atmega (AVR), MSP430, Arduino
Software: C, C++, Python, Java, MATLAB, Assembly, ROS, HTML, CSS
FPGA: Embedded Systems, RTOS, Verilog, VHDL, Logic Synthesis, Simulation, Testable Design
Applications: Altium PCB, Zuken E3, Visio, Multisim, Subversion, NX, CATIA, SharePoint, Salesforce, ENOVIA

PROJECTS:

Robocart: Converted a golf cart into a drive-by-wire autonomous ground vehicle with vision and sensor networks
Computer Vision: Incorporated obstacle detection, navigation, mapping, path planning algorithms in ROS
Robots: Integrated actuators, sensors, feedback, signal processing, and networks on numerous platforms
Robotic Arms: Developed control software for light assembly line manufacturing using a Dobot robotic arm
Networking: Built enterprise network with fault tolerant data arrays, scripting, automation, and virtual machines