707 Lake Louise Ct.
Gibsonia, PA 15044

LUKE METRO

(724) 831-8199
lukemetro@cmu.edu

EMPLOYMENT

Intern, Software Engineering **Edge Case Research** **May 2017 – August 2017**

- Used Golang and GRPC to develop containerized microservices for a SaaS product that performs automatic stress testing of safety-critical software.
- Implemented a continuous integration pipeline for the testing and building of Docker images for deployment.

Intern, Systems Electronics **Apple** **May 2016 – August 2016**

Apple Watch

- Collaborated with multiple cross-functional teams, some internationally-based, to design a 10-layer, 1600-net development board. Directly responsible for meeting project deadlines, prototype bring-up, and validation.
- Created a circuit board to test PMU load and line transients, allowing for the testing of specifications beyond the capability of off-the-shelf lab bench equipment.

Intern, Hardware Validation **Apple** **May 2015 – December 2015**

Apple Watch

- Used Ruby to create an electronics validation platform that controls lab equipment to automatically perform common validation tasks including host-interface validation, power sequencing, and power supply characterization.

Avionics Engineer **Carnegie Mellon Google Lunar XPrize** **January 2014 – January 2015**

- Conducted a testing program that quantified a prototype lunar rover's performance in the areas of mobility, thermal vacuum performance, and shock- and vibration-survival. The results were submitted to win $500,000 in prize money from the XPrize Foundation.

Teaching Assistant **Carnegie Mellon University** **January 2015 – May 2015**

18-240, Structure and Design of Digital Systems

- Held office hours, graded assignments, and led lab sections where students implemented digital designs on an FPGA using SystemVerilog. Lab projects included a UART transceiver and a small RISC processor.

EDUCATION

Pittsburgh, PA **Carnegie Mellon University** **August 2013 – December 2017**

- B.S. in Electrical & Computer Engineering. GPA: 3.67
- Relevant Coursework: Embedded Systems Engineering, Electronic Devices & Analog Circuits, Introduction to Computer Systems, Introduction to Robotics, Advanced Mobile Robot Design, Mechatronic Design, Industrial Design Fundamentals, Signals and Systems, Introduction to Computer Security, Microelectronic Circuits, Introduction to Machine Learning, Special Topics in Deep Learning

TECHNICAL EXPERIENCE

Selected Projects (More can be found at lukemetro.com)

- **Battery Management System (2017):** Architected and wrote firmware to monitor and control a 720-cell battery pack for an electric vehicle. The firmware interfaces with analog frontends to take measurements and communicates with the rest of the vehicle via a CAN bus. Created for Carnegie Mellon Racing's electric car.
- **Battery Protection Board (2016):** Created a PCB implementing under voltage protection for a battery with ultra-low quiescent current consumption. Created for Carnegie Mellon Racing's electric car.

Technical Skills

- Software: C, Ruby, Python, Golang, MATLAB, Assembly, Arduino, DevOps (Jenkins, Gitlab CI), Bash, Linux/Unix
- Electrical: PCB design (Eagle, Altium, Allegro), Hand soldering, SMT stenciling and assembly, PCB debugging
- Other: 3D printing, Laser cutting, 3D CAD (Autodesk Fusion)