Jonathan E. Zarger

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Objective

Obtain an Electrical Engineering internship working in embedded systems and control systems

Education

University of Michigan [Ann Arbor, MI] **Expected Graduation - May 2018**

- MSE Electrical Engineering: Systems (Sept. 2017-May 2018)
- BSE Electrical Engineering – Current GPA: 3.625 / 4.000 (Sept. 2013-May 2017)
- Courses: Linear System Theory, Embedded Control Systems, Control System Design & Analysis, Digital Signal Processing, Microprocessor Systems, Navigation & Guidance, Hands on Robotics, Programming and Data Structures, Flight Software, Computer Organization

Work Experience

Delphi Electronics and Safety [Kokomo, IN] – Engineering Intern **May - August 2016**

- Designed, fabricated and tested equipment for frequency based signals in radiated immunity validation testing, including analog circuit design and RF immunity design
- Assessed functionality of prototypes and assisted with failure analysis
- Performed signal integrity analysis on high speed signal printed circuit board traces

BWI Group [Brighton, MI] – Engineering Intern **May - August 2015**

- Led functional and failsafe benchmarking on brake systems to aid project development
- Helped develop platform for control unit validation, including electric motor analysis

Honda R&D Americas [Southfield, MI] – Engineering Intern **May - August 2014**

- Led project to design and fabricate remote controlled obstacles for demonstrating collision detection systems at the Intelligent Transportation Systems World Congress

Team and Project Experience

Michigan Aeronautical Science Association – Avionics Team **September 2014 - Present**

- Avionics Team Lead (2015-2016), Active Control Sub-Team Co-Lead (2016-2017)
- Led team of ten students to design, implement, and test electrical systems
- Co-Led project to prototype active roll control hardware and algorithms for a rocket
- Led project to design, fabricate, and program a recovery control and telemetry device

MHacks Coordinator Team – Hardware **November 2015 - October 2016**

- Designed microcontroller development boards to distribute to event participants
- Planned and ran Introduction to Hardware and Arduino Workshops

EECS 452 Digital Signal Processing Capstone Project **Fall 2016**

- Worked on team to design robot that uses image tracking to follow a laser pointer
- Designed and built mechanical and electrical hardware for project
- Designed and implemented closed-loop controller for laser following

Major Control Systems Projects **2015 - 2016**

- Implemented simulated adaptive cruise control and lane-keep system with Simulink
- Wrote control and guidance software to fly a quadcopter autonomously through a 3D path
- Developed real-time embedded software to control tabletop satellite simulator
- Implemented FPGA design with Verilog HDL to communicate with a video game controller

Technical Skills

Electrical Hardware Related

- Proficient with soldering and wiring harness manufacture, including surface mount
- Proficient with EAGLE and Altium CircuitMaker for schematic design and ECAD
- Proficient with reading electrical schematics and component datasheets
- Significant experience with microcontrollers and embedded systems

Software Related

- Proficient with C, C++, MATLAB, Python; experience with Simulink, Stateflow, Verilog HDL
- Proficient with Windows, experience with Linux
- Proficient with NI Multisim (SPICE), LTSpice, and Synopsys Saber for circuit modeling