

# Jonathan E. Zarger

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[jzarger.me](http://jzarger.me)

<b>Objective</b>	Obtain an Electrical Engineering position working in embedded systems and control systems	
<b>Education</b>	<b>M.S.E. in Electrical and Computer Engineering: Controls</b>	<b>Expected Graduation - May 2018</b>
	<i>University of Michigan [Ann Arbor]</i> <ul style="list-style-type: none"><li>Courses (tentative): Self-Driving Cars: Perception and Control, Matrix Methods for Digital Signal Processing, Advanced Embedded Systems, VLSI for Digital Signal Processing</li></ul>	
	<b>B.S.E. in Electrical Engineering</b>	<b>September 2013 - May 2017</b>
	<i>University of Michigan [Ann Arbor] - Graduated Magna Cum Laude, GPA: 3.621/4.000</i> <ul style="list-style-type: none"><li>Courses: Linear System Theory, Embedded Control Systems, Control System Design &amp; Analysis, Microprocessor Based System Design, Navigation &amp; Guidance, Flight Software, Computer Organization</li></ul>	
<b>Work Experience</b>	<b>Northrop Grumman [Rolling Meadows, IL] – Engineering Intern</b>	<b>May - August 2017</b>
	<ul style="list-style-type: none"><li>Worked on team to develop standard internal test automation software in Python and Robot Framework for remotely controlling test equipment like signal generators, spectrum analyzers, etc.</li><li>Validated software functionality with test cases and demonstrated to product owner</li></ul>	
	<b>Delphi Electronics and Safety [Kokomo, IN] – Engineering Intern</b>	<b>May - August 2016</b>
	<ul style="list-style-type: none"><li>Designed, fabricated and tested equipment for frequency based signals in radiated immunity validation testing, including analog circuit design and RF immunity design</li></ul>	
	<b>BWI Group [Brighton, MI] – Engineering Intern</b>	<b>May - August 2015</b>
	<ul style="list-style-type: none"><li>Led functional and failsafe benchmarking on brake systems to aid new project development</li></ul>	
	<b>Honda R&amp;D Americas [Southfield, MI] – Engineering Intern</b>	<b>May - August 2014</b>
	<ul style="list-style-type: none"><li>Led project to design and fabricate remotely controlled obstacles for demonstrating collision detection</li></ul>	
	<b>Michigan Aeronautical Science Association – Avionics Team</b>	<b>September 2014 - Present</b>
	<ul style="list-style-type: none"><li>Avionics Team Lead (2015-2016)</li><li>Led team of ten students to design, implement, and test electrical systems</li><li>Managed instrumentation and data acquisition systems during hybrid engine testing</li><li>Led project to design, fabricate, and program a recovery control and telemetry device</li></ul>	
	<b>MHacks Coordinator Team – Hardware</b>	<b>November 2015 - October 2016</b>
	<ul style="list-style-type: none"><li>Designed microcontroller development boards to distribute to event participants</li><li>Planned and ran Introduction to Hardware and Arduino Workshops</li><li>Provided mentoring and assistance at event to participants working on hardware-based projects</li></ul>	
	<b>Digital Signal Processing Lab Senior Capstone Project – DOGBOT</b>	<b>Fall 2016</b>
	<ul style="list-style-type: none"><li>Worked on team to design robot that uses image tracking to follow a laser pointer</li><li>Designed printed circuit board for chassis, containing motor drivers and microcontroller</li><li>Designed and implemented observer and closed-loop controller embedded software for laser following</li></ul>	
	<b>Microprocessor Based System Design Final Project – Motion Based Game Controller</b>	<b>Winter 2017</b>
	<ul style="list-style-type: none"><li>Worked on team to design device to convert foot motion and orientation to wireless game control</li><li>Designed printed circuit board with microcontroller, FPGA, Bluetooth module, and inertial sensor</li><li>Implemented data interpretation and communication algorithms in C and Verilog</li></ul>	
	<b>Other Control Systems and Embedded Systems Projects</b>	<b>2015 - 2017</b>
	<ul style="list-style-type: none"><li>Implemented simulated adaptive cruise control and lane-keep system with Simulink and Stateflow</li><li>Wrote control and navigation software to fly a quadcopter autonomously through a 3D path</li><li>Developed real-time embedded software to control rotation of tabletop satellite simulator</li></ul>	
<b>Technical Skills</b>	<b>Electrical Hardware Proficiencies</b>	
	<ul style="list-style-type: none"><li>Printed circuit board and schematic design with Altium CircuitMaker and EAGLE</li><li>Through-hole and surface-mount soldering (soldering iron and hot-air reflow)</li><li>Reading electrical schematics and component datasheets</li><li>Using standard EE tools: oscilloscopes, bench power supplies, waveform generators, logic analyzers</li></ul>	
	<b>Software Proficiencies</b>	
	<ul style="list-style-type: none"><li>C, MATLAB, Python, Verilog, ARM, C++, Simulink, Stateflow</li><li>Proficient with NI Multisim (SPICE), LTSpice, and Synopsys Saber for circuit modeling</li></ul>	