SPENCER CARMICHAEL

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EDUCATION — **April 2017**

UNIVERSITY OF MICHIGAN — **Ann Arbor, MI**
College of Engineering
Bachelor of Science in Electrical Engineering & Minor in Physics
- **GPA**: 3.93/4.00
- **Selected Relevant Coursework**: Digital Signal Processing, Probabilistic Methods, Linear Algebra, Electromagnetics, Introduction to Logic Design, Applied Matrix Algorithms for Signal Processing (current), Digital Communications (current)

EXPERIENCE

MULTIDISCIPLINARY DESIGN PROGRAM — **Ann Arbor, MI**
Jan – Dec 2016
Team Member
- Designing and implementing a smartphone-controlled, ZigBee based, window shade system to showcase the smart home potential of Guardian Industries technology
- Working within a diverse team including computer scientists, a computer engineer, and a UI/UX designer, to holistically define objectives, draft plans, and make presentations to company representatives

GUARDIAN INDUSTRIES — **Carleton, MI**
May – Aug 2016
Science and Technology Intern
- Wrote image processing code and built a photo capture chamber for a new quality control process which was more efficient, reproducible and accurate than previous methods
- Experimented with novel capacitive touch technology with the goal to create a working touch grid utilizing only simple, cost efficient designs

COMPREHENSIVE STUDIES PROGRAM — **Ann Arbor, MI**
Sep – Dec 2014
Calculus 1, 2 and 3 Tutor
- Led students through multiple perspectives on difficult concepts to aid them in developing a stronger approach to mathematical problem solving
- Organized eight individual tutoring meetings weekly and facilitated group studying sessions for exams

INSTITUTE FÜR ASTROPHYSIK — **Göttingen, Germany**
Jun – Aug 2014
Research Assistant
- Constructed a lab setup and program that analyzed the non-homogeneity of output from in-lab optical fibers to estimate the resultant shift this caused in recorded spectra
- Tested optical components by taking spectra with a Fourier transform spectrograph and analyzing the spectra to detect unwanted fringing

UNDERGRADUATE RESEARCH OPPORTUNITY PROGRAM — **Ann Arbor, MI**
Sep '13 – May 2014
Research Assistant
- Converted, in AutoCAD, a quad-ridged waveguide design into a sheet of break-apart, stackable slices and organized its low tolerance fabrication with chemical etching companies
- Experimented with electromagnetic plating methods to prepare for the eventual process of plating pieces of the waveguide together

ADDITIONAL

Honors: Eta Kappa Nu Member (IEEE Honors Society), Phi Kappa Phi Member, Ernest W. Reynolds Endowed Scholarship (Fall 15), EECS Scholar (Fall 15), James B. Angell Scholar (Winter 14 & 15), Dean's List (Winter & Fall 15), University Honors (Fall 12 & 13, Winter 14)
Programming Languages: C++, Matlab, Python, Arduino, and ImageJ Macro
Computer Applications: Microsoft Office Suite proficiency and basic experience with AutoCAD, Cadence Virtuoso, Quartus and Multisim
Foreign Language: Limited working proficiency in German