Zane Dunnings

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EDUCATION

UNIVERSITY OF MICHIGAN **Ann Arbor, MI**
B.S.E in Computer Engineering December 2018
Minor in Entrepreneurship **GPA: 3.65/4.00**
Languages: C/C++, MATLAB, Python, VHDL
Software: Quartus(FPGA), LabView, Multisim, SolidWorks, Sublime, AutoCAD, Microsoft Visio, Microsoft Office
Processors: Arduino, Rasberry Pi, FPGA, PLC
National Society of Black Engineers Member
Bio-Mechatronics Journal Club Member
Awards:

- Power Scholar Award: Presented to students achieving exemplary academic standing
- Dean's List and University Honors, 2014-2016

EXPERIENCE

Stryker Endoscopy **San Jose, CA**
Manufacturing Engineering Intern *June 2016-August 2016*

- Utilized my computer engineering background (on a team of entirely mechanical engineers) to teach teammates on how to implement PLCs, Arduino and electronic controls in manufacturing fixture design
- Designed, built, and tested custom pneumatic coupling fixture to automate assembly of surgical camera equipment
- Designed and implemented all-in-one safety switches for pneumatic coupling fixtures using discrete logic to control solenoid valves, providing over $70,000 in risk savings
- Designed automated test fixture to test for micro-fractures in new product quality fixture
- Delivered presentation on projects at Endoscopy quarterly operations review and final intern review

Collins and Ye Lab **Ann Arbor, MI**
Test Equipment Designer and Undergraduate Researcher *February 2015 – Present*

- Designed and Implemented automated test equipment using Arduino for developmental neural stimulation experiments
- Created test protocols and implemented on automated electronics to perform and record assays
- Co-authored research paper [*Sensory experience shapes development of the nociceptive circuit in Drosophila*] (In review)

MHEAL - Team Pneumonia **Ann Arbor, MI**
Project Team President and Hardware Development Lead *September 2014-Present*

- Developing prototypes of an smart stethoscope to analyze breathing sounds using Fast Fourier Transform analysis in order to diagnose childhood pneumonia in low resource areas
- Programming software to isolate peak frequencies from breathing using quadratic interpolation of frequency data
- Leading 21 members through research and concept generation for new device designs

Michigan Peer Mentorship Program **Ann Arbor, MI**
Peer Mentor *February 2015- Present*

- Advising new freshman students on academic pathways and career development
- Tutored incoming students in Physics, Math, Chemistry, and Computer Science coursework

PROJECTS

***Dropsophila* Larvae Video Tracking Software** *June 2016- Present*

- Developing Python program to track the crawling distance of *drosophila* larvae for neural plasticity research
- Software identifies key markers on the larvae and tracks the movement of markers to log crawling distance [In Progress]

Automated Optogenetics Assay Equipment *February 2015- September 2016*

- Invented automated Arduino controlled light stimulation device and developed custom test protocols for optogeneteic stimulation experiments on *drosophila*
- Programmed PID control algorithms for measurement and correction of light output from LEDs to predefined intensities and wavelengths, which specifically enhanced speed, efficiency, and accuracy of LED stimulation

India Social Challenge Engineering Consultant - Ross School of Business *August 2016- September 2016*

- Investigated feasibility of constructing wearable stun-gun for women in India (circuit design, CAD, safety, pricing)
- Project won first place in the Ross Social Challenge over seven competing teams

Remote Controlled Surveillance Blimp *September 2014 -December 2014*

- Designed and constructed electrical control system for remote operated surveillance blimp using Arduino
- Composed extensive final report to outline the blimp's design and performance capabilities