

Jonathan Duffy

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Education

Carnegie Mellon University, Pittsburgh, PA

Graduated May 2020

-Bachelor of Science, Electrical and Computer Engineering

GPA: 3.8

Work Experience

Intern, MIT Lincoln Lab, Lexington, MA

May 2018 to December 2018, May 2019 to August 2019

- Designed and prototyped novel methods of landing and perching for large drones
- Miniaturized and ruggedized various laboratory sensors and equipment for field use
- Designed, built, and tested a smaller, simpler, and cheaper version of the LLRISE radar system
- Built, programmed, and implemented controls for new configurations of multirotors: youtu.be/5DC4_tdu6aM?t=135

Intern, SpaceX Space Launch Complex 40, Cape Canaveral Air Force Base, FL

August 2017 to December 2017

- Tested, debugged, and coordinated installation of launch pad command and control equipment
- Designed, tested, and implemented new sensors and controls

Intern, NASA Jet Propulsion Laboratory, Pasadena, CA

August 2016 to December 2016, May 2017 to August 2017

- Designed, programmed, and tested data acquisition avionics for Peregrine sounding rocket
- Interfaced new components with existing avionics for data logging and control

Electronics Technician, Electronics Technology Group, Ames, IA

November 2015 to July 2016, January 2017 to May 2017

- Solved electronics related problems for students and faculty members
- Troubleshoot lab equipment issues and performed assembly and repairs as needed

Undergraduate Research Assistant, Ashraf Bastawros, Ames, IA

May 2016 to August 2016, January 2017 to May 2017

- Developed a system for measuring resistivity of metals exposed to simulated space conditions

Collegiate Involvement

Co-author, In-Sight, SCS Independent Research Project

April 2018 to May 2019

- Designed and built electronics for a novel device for blind navigation: joaoguerreiro.net/chi19workshop/paper5.pdf

Electronics Team Member, Carnegie Mellon Rocket Command

January 2018 to December 2018

- Designed and built avionics for data collection and processing aboard sounding rocket

Controls Team Member, Cyclone Space Mining

September 2015 to May 2017

- Collaboratively designed control system with other students for a robot in the NASA Robotic Mining Competition

Member, Critical Tinkers

September 2015 to August 2016, January 2017 to August 2017

- Designed, built, and programmed a novel design of multirotor: youtu.be/KTGGI3016OA and youtu.be/Wt8pXwj-qZc?t=191
- Built and programmed networked lights for the ISU snare line: youtu.be/kqavQ3IXFC8?t=58

Skills

- Designing, building, and testing analog, digital, and RF circuits
- Experience with large-scale industrial DAQ systems
- PCB design of analog, digital, and RF boards
- Programming in C, C++, Java, Python, assembly (x86, ARM) and MATLAB
- HDL design with FPGAs and CPLDs
- Performing analog, digital, and RF simulation
- Modeling, assembling, and simulating mechanical 3D components in Solidworks