

DUNCAN D. CROWLEY

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EDUCATION

Harvey Mudd College - Claremont, CA

B.S. Engineering with an Emphasis in Environmental Studies, May 2018 , GPA – 3.3

Relevant Coursework– Advanced Systems Eng. 1 & 2, Manufacturing Planning & Execution, Microcontrollers, Systems Simulation, Human Centered Design, Life Cycle Analysis, Experimental Eng., Thermal & Chemical Processes, Environmental Eng., Materials Eng., Digital Electronics & Computer Eng., Electrical & Magnetic Circuits, Continuum Mechanics, Computer Science I & II and Probability & Statistics

CLINIC PROJECTS

Toyota Portal Project Group– 5-person team (August 2017 - Present)

Industry-sponsored project to improve the efficiency of Toyota's fuel cell truck using regenerative braking

- Measured the braking energy of semi trucks at the Port of LA and proposed ways to store & use that energy
- Led the 5 person team through the fall research, ideation and evaluation phases of the project

Microsoft Surface Group– 4-person team (January 2017- May 2017)

Industry-sponsored project to characterize radio-frequency propagation in various indoor use cases

- Conducted line-of-sight and non-line-of-sight RF experiments at 5 telecom frequencies (Wifi, LTE, etc.)
- Characterized and modeled the signal power loss through common building materials and separate floors

SKILLS

Computer • Programming Languages: Matlab, Python, System Verilog • In Progress: Java, C, C++, Mathematica

Software: Microsoft Office & Visio, Simulink, LabView, ArcMap, NX, Solidworks, Inventor, KiCAD, Adobe Illustrator

Technical • Systems Simulation • Lean & Six Sigma • Electronics & PCB Design • Digital Design & Verification
Process control and Instrumentation • Rapid prototyping on CNC lathes/mills, 3D printers, laser & waterjet cutters

INTERNSHIPS

NASA's Jet Propulsion Lab Mars 2020 Thermal Team– Summer Intern (June - August 2017)

- Organized demands from the Mars 2020 team to create a thermal adhesive test, passing all JPL test reviews
- Designed test hardware, procured it, supervised flight technicians during assembly and conducted this test
- Found a significant cost reduction opportunity for future thermal hardware installation

NASA's Jet Propulsion Lab Instruments Division– Summer Intern (June - August 2016)

- Finalized the CAD design for an ISS gas monitoring instrument for manufacture after I had left
- Designed and built a vacuum pressure gauge display with serial data collection using microcontrollers
- Wrote a serial C++ pressure controller program to simulate a Venus descent for mass spectrometry

University of Massachusetts Electrical Engineering Dept.– REU researcher (May - August 2015)

- Calibrated and imaged with my advisor's hyperspectral imager, analyzing the parameters affecting SNR
- Developed experiment mounts and the field procedure to image at Craters of the Moon and from a plane

ON-CAMPUS EXPERIENCE

Harvey Mudd Engineering Dept.– Machine Shop Proctor (Fall 2015 –present)

- Teach students how to safely manufacture using shop equipment, counsel students on personal projects
- Implement and optimize the layout and procedures of the newly renovated machine shop (as of Fall 2016)

Skateboard Design and Manufacturing Group– Principal Investigator (August 2015 - May 2016)

- Led 3 student teams working to design, manufacture and document a student-run skateboard factory
- Implemented a human-centered design approach to research and develop sustainable board designs
- Wrote a successful proposal, budget and work breakdown for a project grant to purchase supplies for build

RECOGNITIONS

Eagle Scout: July 2013, **Engineer in Training**: April 2018, **Harvey Mudd College Dean's List**: Jan 2015- Dec 2017