Dan Brogan

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Personal Website: *https://dan-brogan.github.io/Dan-Brogan-Engineering/index.html*

Education:

University of Southern California (USC)   Expected Dec. 2021
M.S. Astronautical Engineering   **(First Semester)**
University of Rhode Island (URI)   May 2020
B.S. Mechanical Engineering (Summa Cum Laude)   **GPA: 3.94**
Robotics Engineering Minor
Mathematics Minor

Engineering Experience:

Space Engineering Research Center   Aug. 2020-Present
Astronautical Engineering Researcher for Lunar Lander Prototype
- Investigating use of reaction wheels for attitude control system, integrating and testing vehicle systems

USC Rocket Propulsion Laboratory   Sept. 2020-Present
Simulations Engineer
- Using ANSYS to simulate performance of systems for new liquid rocket engine project

NASA RI Space Grant   2019-2020
Rhode Island Space Grant Researcher for *Artificially Intelligent Satellite Servicing*
- Worked with Dr. Jouaneh and Dr. DiFilippo to create an optimized "You Only Look Once" (YOLO) based deep learning fastener detection system with Python

Lockheed Martin   2019-Present
Mechanical Engineering Intern (Secret Security Clearance)
- Technical Lead and Small Business Coordinator for a hydrostatic composite overwrapped pressure vessel (COPV). Used ANSYS for COPV FEA simulation and MATLAB for wall thickness trade study. Presented solution to NUWC.
- Supported the following SBIR projects: AF181-032: *Direct Injection Systems for Small UAV Engines,* N00024-16-C-4537: *Wideband Acoustic Signature Capability for Next Generation Mobile Anti-Submarine Warfare (ASW) Training Target*
- Prepared and conducted a presentation for Lockheed Martin Newport on Deep Learning for Computer Vision
- Attended SBIR Conference at Lockheed Martin Skunk Works in Palmdale, CA

URI Capstone Project: 5-Axis 3D Printer   2019-2020
Lead Mechanical Design Engineer
- Ground up design, fabrication, and testing of a 5-axis 3D printer
- Continued to work on project individually post-graduation

URI Artificial Intelligence Laboratory   2018-2019
Roboticist
- Responsible for constructing robots, hosting Arduino workshops, and facilitating URI's new public AI lab

Raytheon   2018
Mechanical Engineering Intern
- Used CREO Parametric for modelling complex solids for several Internal Research & Development (IRAD) projects
- Supported development of Sonar Transducer and Electronics Systems on Zumwalt-Class Destroyer Ship 3
- Presented work to Bill Dawson, Sr. Director of Mechanical Engineering

Engineering Projects:

NASA Venus Rover Mechanical Sensors   2020
- Worked with Mitch Brogan to design mechanical obstacle avoidance sensors for the public NASA HeroX challenge

Mechatronics Projects   2019
- Used Visual Basic, Arduino and Python to create control code for DC motors, heating elements, stepper motors, etc.

Turbo Jet Engine   2019
- Fabrication and testing of a turbo jet engine comprised of a turbocharger and oil system with pump controller

Pulse Jet Engine   2018
- Fabrication and testing of a valveless pulse jet engine that operates without moving parts

Professional Skills:

Mechatronics, Propulsion, Python, MATLAB, Arduino, Visual Basic for Forms Applications, CREO Parametric, ANSYS Workbench, Microsoft Excel, Composite Lamination, TIG Welding, Metal Shaping

Associations:

URI Astroneering   2018-2020
President and Founder of URI Astroneering Club
- Started Aerospace Engineering Club for Students interested in rocket design and interplanetary colonization

American Society of Mechanical Engineers (ASME)   2017-2019
President of ASME URI Chapter
- Restarted previously defunct ASME URI Chapter. Organized & facilitated build projects, field trips and club meetings