

JULIAN AWAD

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Clearances Held (Canada): NATO Secret ◇ Controlled Goods Program ◇ Enhanced Reliability

EXPERIENCE

Rocket Lab (Sinclair Interplanetary)

January 2023 - August 2023

Mechanical Engineering Intern

- Redesigned and prototyped the entire mechanical assembly of the 1000Nms reaction wheel, leading to significant improvements in manufacturability, ease of assembly, and performance.
- Analysed and characterized the magnetic field two different rotor magnetic arrays to determine optimal placement of hall sensors, resulting in an increase in measurement reliability.
- Assembled, inspected and tested to the highest available industry standards several satellite components currently operating on orbit.
- Designed and manufactured 7+ Ground Support Equipment to aid in testing, manufacturing, inspection, and assembly across all departments.

MDA

May 2022 - December 2022

Mechanical Engineering Intern

- Automated the entire end-to-end testing infrastructure for the CANADARM2 using Python, Pandas, and NumPy for efficient parsing, analysis and visualization of test data, leading to 10x time savings.
- Building a custom DAQ system using LabVIEW to be used in several testing scenarios, including up to 20 load cells, 10 LVDTs, and 8 thermocouples.
- Performing structural testing and analysis for Lunar Gateway Grapple Fixtures and End Effectors to characterize the stiffness of the latched assembly in all directions.
- Performing end-to-end control systems test campaigns for the CANADARM2 using HITL/SITL simulations.
- Defining system requirements for the GERS project (Lunar Gateway/CANADARM3) using PTC Windchill.

Lockheed Martin

May 2021 - August 2021

Hardware Engineering Intern

- Performed detailed SolidWorks FEA analysis to validate equipment to Military Standard 901D
- Created an Excel VBA tool to generate shock response spectra from an impulse function for shock & vibe testing, resulting in a user-friendly program
- Accomplished overall 2x cost reduction and 4x time savings by performing detailed make-vs-buy analysis on electronics enclosures and presenting to senior engineers

SKILLS

Test Engineering

Data Acquisition Systems, LabVIEW, SolidWorks FEA

Data Analysis

Python/Jupyter, Numerical Methods, Scientific Computing, MATLAB, Git

Mechanical Engineering

SolidWorks, Autodesk Inventor, 3D Printing

Languages

English, French (Native Bilingual)

EDUCATION

Faculty of Engineering, Queen's University, Kingston ON

September 2019 - May 2024 (Expected)

- Candidate for Bachelor of Engineering Physics, Mechanical Stream
- Dean's List with Honours for 6/6 semesters - GPA of 3.75/4.3

Publications

- Julian Awad, Nikhil Menda, William Conway, and David Puddy, "Investigation of Magnetic Radiation Shields for Human Space Habitats," J. Undergrad. Eng. Phys. Phys. Exp. Queens, Section 1, Vol 3.