Will Covington

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Education

University of Maryland, College Park | College Park, Maryland August 2020 - May 2025
Bachelor of Science in Aerospace Engineering
Summa Cum Laude, Aerospace Engineering Honors
8 Time Dean's List, Dinah Berman Memorial Award Recipient, Aerospace Engineering Junior Merit Award Recipient

Work Experience

Johns Hopkins University Applied Physics Lab | Laurel, MD May 2024 - August 2024
Mechanical/Electrical Engineering Intern (Research and Exploratory Development)
- Analyzed models of cantilevered rails within pressure chamber for lithium-ion batteries onboard NASA's Dragonfly octocopter mission, and recommended/implemented changes to design to accommodate the required 240 kg loading
- Designed, prototyped, and installed testing equipment for RF hardware and hardware packaging for military sponsors

NASA Jet Propulsion Laboratory | Pasadena, CA June 2023 - May 2024
Operations Engineering Intern (Psyche Spacecraft Mission)
- Developed activity editing software in Python for Psyche spacecraft sequence generation to improve user clarity, reduce conflicts with automatically generated activity sequences, and ensure the precision of time-relative events
- Defined constraints in Java for automatically generated activity plans in JPL's Blackbird adaptation to help reduce the likelihood of unwanted activity overlap during operations
- Assisted full-time engineers with reviewing code for both Psyche's Plan Editor tool and JPL's Blackbird adaptation to improve pre-existing architecture, add functionality for both tools, and improve mission-planner and scientist experience

NASA Goddard Space Flight Center | Greenbelt, MD January 2023 - May 2023
NASA Pathways Thermal Engineering Intern (Mars Sample Return Mission)
- Modeled mechanical components in Thermal Desktop for the upcoming Mars Sample Return (MSR) Capture, Containment, and Return System (CCRS) to better understand heat transfer during hot and cold cases of various Martian orbits, as well as operations to during the capture of Martian soil samples in low Martian orbit
- Analyzed simulations for extreme hot and cold expected conditions for the CCRS platform during launch, transfer to Martian orbit, Martian orbit, and return to Earth to identify problem points during each flight scenario

NSROC | NASA Wallops Flight Facility, VA August 2022 – December 2022
Mechanical Engineering Intern (Sounding Rocket Program)
- Designed testing apparatus for IMU slip rings necessary for powering flight hardware with the goal of reducing I&T issues. Engineered with a focus on rotational stability of apparatus, in order to attain minimum 10 Hz rotational speed
- Modeled, designed, and drafted dozens of components for both flight hardware and structural members of various sounding rocket payloads, with an emphasis on designing for manufacturing and assembly

Research

UMD Space Systems Lab | College Park, MD February 2021 - May 2025
Mechanical Design Engineer, Software Engineer
- Developed, assembled and operated a custom linear wheel testing apparatus and soil characterization tool (i.e. bevameter) to analyze rover wheel-lunar regolith interactions, studying sinkage, excavation, drawbar pull, and torque
- Conducted research into the ability to extract "Bekker values" from lunar regolith using cost-and-time effective methods rather than the standard method of developing a lab-specific Bevameter

Skills

Programming: Python, C++, Java, MATLAB, ROS Framework
Software: Solidworks, ANSYS, Siemens NX, Fusion, Thermal Desktop, AutoCAD, Creo Parametric
Manufacturing: 3D printing, Laser Cutting, CNC Routing, CNC Milling, Water Jet