NICK TAYLOR

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SKILLS & CLEARANCES

- Active TS/SCI security clearance
- Python
- C/C++
- Arduino
- MATLAB & Simulink
- LabVIEW
- STK (Level 1 Cert.)
- AFSIM
- SolidWorks CAD
- Linux, Git
- FEA/FEM (ANSYS, Abaqus)
- Subtractive Manufacturing, GD&T

EDUCATION

Master of Science —— Mechanical Engineering August 2023 to December 2024
COLORADO SCHOOL OF MINES **3.77 Cumulative GPA**

- Completing 2 graduate degree coursework tracks: Robotics & Controls, Solid Mechanics
- Concurrently pursuing a **Space Resources Graduate Certificate**

Bachelor of Science —— Aerospace Engineering August 2017 to May 2022
UNIVERSITY OF COLORADO AT BOULDER **3.20 Cumulative GPA**

- Minors in Mathematics and Space Sciences

ACADEMIC RESEARCH PROJECTS

Hardware Team Lead October 2023 to May 2024
Autonomy, Robotics and Intelligent Algorithms (ARIA) Research Lab Colorado School of Mines

- Led a team of students to design and manufacture a universal sensor backpack of COTS sensors for a SLAM robotics research lab using 3 robots (Boston Dynamics Spot, Clearpath Jackal and Husky).
- Cut and assembled all T-slot aluminum extrusion, aluminum composite and AVS panelling materials for the sensor backpack using band saws and laser cutters.
- Designed, 3D printed and installed mounting hardware for an on-board computer, external battery, router, LCD PCB and buck converter mounts using SolidWorks, a Prusa MK4 3D printer and power tools.

Analytical Modeling & Manufacturing Lead (Senior Project) August 2021 to May 2022
BioAstronautics Research Lab University of Colorado Boulder

- Engineered a 90 degree test bed loading apparatus that generates an artificial gravity force constantly acting normal to a user's support surface at their feet, regardless of their postural sway.
- Derived analytical models to predict the resistance due to friction experienced by the user to inform design decisions.
- Developed manufacturing and testing plans and then led subteams to procure, assemble and test the structural subsystem of the device in 8 weeks.
- Integrated analytical modeling expectations with experimental test results to verify design requirements and validate analytical models.
- Awarded systems engineering group award from the department at the end of the project.

PROFESSIONAL EXPERIENCE

Operations Research Analyst Intern (GS-09) August 2022 to August 2023, May 2024 to August 2024
NORAD & USNORTHCOM HQ —— J84 Analysis & Experimentation Branch Peterson AFB, CO.

- Supported homeland defense designers and planners to refine design trade spaces by providing modeling and simulation solutions using AFSIM and STK software tools.
- Coded MATLAB programs to process output data from AFSIM simulations and display analytical results.
- Analyzed and monitored large datasets of event reports in MATLAB and Python to identify significant trends and anomalies to inform experiment designers.