Robert Rothschild

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SUMMARY

Systems & Software engineer with 8 years working on large scale space assets. Involved with all stages of missions including design, integration, and validation. Additionally built Model-Based Systems Engineering tools to streamline engineering decisions from models such as stress, vibe, impact, and thermal.

Languages: Python, MATLAB, JS/TS, C++, SQL
Frameworks/Libraries: NASA cFS, ROS/ROS2, NumPy, Pandas, SciPy, Matplotlib
DevOps: Linux, Git, Docker, Kubernetes, CI/CD, Git workflows, Code review
Domains: Con-Ops, MBSE tooling, scientific computing, CAD

EXPERIENCE

Systems Engineer (Software Focus)- Heliospace **Mar 2017–Jul 2022; Jan 2023–Jul 2025**

- Defined, managed, and verified hundreds of requirements related to most fields of Aerospace projects including mechanical, electrical, software, and thermal.
- Lead a team of 3 engineers to drive the design of space based assets by modeling (C++ Python) micro-meteoroid impacts at various locations and environments.
- Built MBSE data pipelines enabling analysis workflows for numerous modeling software including stress, micro-meteoroid hyper-velocity impacts, and space based mission planning tools.
- Built Python and MATLAB based analysis tooling (APIs + GUIs) to automate requirement verification, Master Equipment Lists, stress/margins checks, materials allowables, and report generation.
- Oversaw I&T activities including mechanism deployments/stowing, TVAC, vibrations, and load tests at unit and systems levels.
- Created tooling to compare FEA predictions with test data (random/sine vibe, sine burst) and to screen critical hardware components and locations, then packaged results into engineer-ready reports.
- Supported internal planning and risk identification by validating models against test data, reviewing stress reports and material properties, and contributing to mission assurance.
- Independently analyzed diverse system datasets (model outputs, test logs and results) to distill key findings and present clear summaries to cross-functional stakeholders and program leadership.
- Authored and delivered technical presentations, design reviews, and documentation to cross-functional stakeholders; translated modeling insights into actionable decisions for design and test.

Projects and Missions Impact

- Contributions supported: James Webb Space Telescope (JWST), Mars Sample Return (MSR), Roman Space Telescope (RST), Heliophysics Environmental and Radiation Measurement Experiment Suite (HERMES), Europa Clipper – REASON, Earth Guard (EG)

EDUCATION

B.S in Engineering - Fort Lewis College, Durango CO **2013 - 2017**

AWARDS AND HONORS

- Best Obstacle Avoidance - Colorado Space Grant Consortium's Robotics Challenge
- Finalist - Hawk Tank Business Plan Competition - Fort Lewis College
- Sigma-Pi-Sigma Physics Honor Society Member
- Presenter at the 2015 AIAA Annual Rocky Mountain Technical Symposium
- Technology Award - Chaparral High School - Parker, CO