MATTHEW HERNANDEZ

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EDUCATION

University of South Florida (Tampa, FL) Expected: May 2027
Bachelor of Science in Mechanical Engineering GPA: 3.69

University of Central Florida (Orlando, FL) August 2021 - December 2024

RELEVANT EXPERIENCE

Jet Propulsion Laboratory (JPL) (La Cañada Flintridge, CA) June 2025 - August 2025
NASA Europa Clipper ICONS Intern

- Assembled a vacuum system with the necessary accessories to simulate Europa-like conditions for **salt-brine samples**.
- Fabricated Python scripts to process data from CASINO **Monte Carlo simulations** to analyze electron stopping energies in various materials.
- Interpretation of **IR and UV-Vis spectroscopy** data from irradiated samples to generate preliminary datasets for the Europa Clipper mission.

KULR Technology Group (Houston, TX) February 2025 - May 2025
Engineering Intern - Prototyping and Testing

- Applied **Python** to integrate **computer vision** for an image analysis study, improving data retention by 40%.
- Streamlining **SolidWorks** models for various battery testing applications to expand potential testing services.
- Leveraging R&D expertise to advance **battery development** and conduct electronic tests for military and space applications across multiple clients.

Kennedy Space Center - Applied Chemistry Lab (Merritt Island, FL) August 2024 - December 2024
NASA OSTEM Intern

- Contributed to troubleshooting issues of a **pure oxygen gas system**, reducing downtime by **20%** and increasing overall project productivity
- Supporting testing and maintenance on **vacuum chambers** for several projects like Molten Regolith Electrolysis (MRE)
- Led vacuum environment setup and off-gassing analysis of lunar simulants using a **Residual Gas Analyzer (RGA)** for research use by clients to assess gas composition.

Cornell Astrophysics and Planetary Science REU (Ithaca, NY) June 2024 - August 2024
Research and Development Intern

- Implemented a water-cooling loop for a prototype **Hall Effect Thruster** to perform regenerative cooling testing
- Utilized **SolidWorks** to create 6 test stand iterations for the thruster, producing a **15%** improvement in structural and thermal stability compared to previous models
- Accomplished the construction and setup of thermal testing for the thruster using an industrial heater and copper film

NASA L'SPACE Mission Concept Academy (Remote) September 2023 - December 2023
Student/Deputy Project Manager of Resources/Scientist

- Collaborated with a team of 12 students to devise a Discovery-class mission given a set of **customer constraints**
- Delivered a concise and compelling Preliminary Design Review **(PDR)** before a L'SPACE leader panel
- Oversaw and allocated a designated budget of $450 million and strategically dividing it into subbudgets

LEADERSHIP AND PROJECTS

Institute of Electrical and Electronics Engineers (IEEE) UCF June 2024 - December 2024
Professional Development (ProDev) Chair

- Organizing workshops for **300+** members on topics such as resumes, mock interviews, and conference readiness
- Delegating a committee of 5 students to structure and gather resources for a mentorship program and ProDev events

Knights Experimental Rocketry - IREC Propulsion Team January 2024 - May 2024

- Generated **SolidWorks** models for rocket components including bulkheads, umbilical systems, O-rings, etc
- Designed **MATLAB simulations** to support calculations and trajectory analyses for the model rockets

SKILLS SUMMARY

Software: SolidWorks, Ansys, MATLAB, LabVIEW, Python, Siemens NX, C, Java, LaTeX, CSS, HTML

Technical Skills: Computer Aided Design (CAD) Modeling, Computer Vision (Image Analysis), R&D Experimentation, Hand & Power Tools, Gas Systems Sustainability, Vacuum Chamber Maintenance, Technical Documentation, Simulation Design, Spectrometry Analysis