

MATTHEW HERNANDEZ

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EDUCATION

University of Central Florida

Bachelor of Science in Aerospace Engineering

Minor in Computer Science and Physics

May 2026

GPA: 3.71

Extracurricular Involvement: Society of Hispanic Professional Engineers, Knights Experimental Rocketry, American Society of Mechanical Engineers, Astronomy Society, PRIME STEM TRIO

Awards: 2024 Student Scholar Symposium Judges Choice Award, President's Honor Roll, 2x Dean's List, Black and Gold Grant, Pegasus Sliver Scholarship, Florida Academic Scholars, SGA E-Portfolio Scholarship,

RELEVANT EXPERIENCE

UCF Department of Planetary Sciences Lab (Orlando, FL)

January 2023 - Present

Undergraduate Researcher

- Operate a Nicolet iS50 FTIR Spectrometer in visible and near-infrared (VNIR) and mid-infrared (MIR).
- Develop MATLAB and Python code to create the continuum for spectral graphs.
- Systematize reflectance data from samples in Microsoft Excel to calculate albedos.
- Identify the background and spectra of 40 diverse samples, including lunar and asteroid simulants.

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.
- Drafted comprehensive Trade Studies on diverse instruments relevant to the mission's objectives.
- Delivered a concise and compelling Preliminary Design Review before a NASA review board.
- Oversaw and allocated a designated budget of \$450 million and strategically dividing it into subbudgets.
- Fabricated a comprehensive outreach plan to cultivate interest in our mission and space exploration.

UCF Mathematics Assistance and Learning Lab (Orlando, FL)

May 2023 - December 2023

Learning Assistant (LA)

- Guided 500 students with classwork in mathematics courses: Pre-Calculus, Trigonometry, College Algebra.
- Facilitated students in conceptualizing mathematical problems, resulting in a 40% improvement in test scores.
- Coordinated with undergrad and grad LAs to advise students on the pacing for their mathematical curriculum.
- Supervised testing centers to ensure students maintained academic integrity.

PROJECTS

Knights Experimental Rocketry - IREC Propulsion Team Member

January 2024 - Present

- Generate CAD models for rocket components including bulkheads, umbilical systems, O-rings, and struts.
- Design MATLAB simulations to support calculations and trajectory analyses for the model rockets.

Engineering Statics Analysis with Cranes

February 2024 - March 2024

- Constructed a model crane to investigate tipping thresholds under various weight loads.
- Directed conducting theoretical calculations and comparing experimental results to write an analysis report.

Chaotic Motion of a Driven Damped Pendulum

February 2023 - May 2023

- Programmed Python code to simulate the movement of a pendulum with and without a damping constant.
- Compiled tables and oscillating graphs to illustrate the impact of varying initial variables.

Exploring Basketball Trajectory: Impact of Drag Force

January 2023 - April 2023

- Simulated the movement of a basketball with quadratic and linear drag force in Python.

SKILLS SUMMARY

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

Technical Skills: CAD Modeling, R&D Experimentation, Simulation Design, Spectrometry Analysis, Technical Writing

Interpersonal Skills: Leadership, Team Communication, Critical Thinking, Project Management, Budget Management, Business Relations, Multicultural Awareness, Customer Service, Teaching

Languages: Spanish, English