Miguel A. Lopez

Aerospace Engineering - Undergraduate Student
(Astronautics)
B.S.E.

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Summary

BSE Astronautical engineer with systems engineering internship experience holding an interest in avionics, state estimation, and GNC seeking a full-time position May 2025.

Education

•Arizona State University - Ira A. Fulton School of Engineering *Present - May, 2025*

Aerospace Engineering (Astronautics)

Experience

•RTX - Collins Aerospace *May, 2024 - Present*

Project Engineer Phoenix, Arizona

- Responsible for compiling and validating requirements throughout different system levels and trace them in DOORS
- Responsible for leading team meetings to determine project responsibilities and release testing specifications
- Used root cause corrective analyses to investigate product defects and prevent escapes

•ASU - Teaching Assistant & Grader *August, 2023 - Present*

System Dynamics & Control Systems Tempe, Arizona

- Aid during lecture activities and supplement student learning
- Hold weekly office hours and answer student questions and concerns regarding control theory
- Grading of weekly student exams and exam corrections

•ASU - Teaching Assistant *August, 2022 - December, 2022*

Rigid Body Statics Tempe, Arizona

- Provided support to the professor by conducting tutorial sessions and assisting with class administration
- Explaining complex engineering principles and concepts in a clear and concise manner
- Offered guidance to students by addressing their questions and clarifying doubts on their assignments and projects

Projects

•NASA 2025 RASC-AL Finalists - DIANA, Lunar Maintenance Robot *August, 2024 - Present*

Design a lunar rover that can be operated remotely to perform maintenance tasks

- Team Lead in a group of 9 engineering students, overseeing meeting agendas and tasks
- Responsible for design choices in command & data handling and telemetry tracking & control systems

•Active Control Flight Computer - Solo Project *September, 2024 - Present*

Design and development of PCB that can control vehicle attitude and deliver live telemetry

- Writing of spacial algorithms and extended Kalman filtering to improve attitude estimation
- Writing of device drivers with the usage of hardware abstraction library (HAL) for peripheral sensors
- Hand picked SMT parts that will be soldered onto the board
- This is an ongoing project that will be used in personal NAR high-powered rockets

•Auto Strummer - Solo Project *April, 2023 - May, 2023*

Conceptual design of an autonomous robot that can play the guitar

- Consulted with professors to design state space of the system
- Modeled state space to determine necessary gain via pole placement and eigenvalue theory
- The robot can autonomously adjust the force at which the guitar is strummed to adjust volume

Technical Skills and Interests

Languages (Human): English, Spanish
Languages (Machine): C++,C, LaTex, MATLAB, Arch Linux
Developer Tools: Simulink, MATLAB, KiCAD, ANSYS, Visual Studio, STM32Cube IDE, Konsole, Microsoft Excel
Soft Skills: Java, Python, Arduino IDE
Areas of Interest: Avionics, GNC, Attitude Estimation, Test & Validation, Control Theory, Propulsion

Extracurricular/Clubs

•Team Lead, NASA RASC-AL Finalist Team *August, 2024 - Present*

•Avionics Lead, SEDS Rocketry Division *August, 2022 - February, 2024*

•Plumbing and Avionics Team Member, Sun Devil Rocketry *September, 2022 - December, 2023*