Mateo Otero-Diaz

571-833-8661 | moterodiaz@olin.edu | www.linkedin.com/in/mateo-otero-diaz | moterodiaz.me

Skills

- Mechanical Design: PTC Mathcad | Autodesk Inventor | Autodesk Fusion | AutoCAD | SolidWorks | PTC Creo | ANSYS | Siemens NX | MSC Adams | Siemens Simcenter | Siemens Femap | MSC Nastran
- Manufacturing: Metal Lathe | Laser Cutter | Plasma Cutter | Prusa FDM 3D-Printer | Metal Mill | Soldering | TIG
- Programming: Python | MATLAB | C++ | R
- Languages: Spanish(Native) | French(Fluent)

Education

Olin College of Engineering — **Needham, MA**

BS: General Engineering – Mechanical Engineering — GPA: 4.0

- Relevant Coursework: Differential Equations, Multi-Variable Calculus, Fluid Dynamics, Thermodynamics, Probabilistic Modeling, Linear Algebra

Experience

NASA Goddard Space Flight Center (GSFC) — **Greenbelt, MD**

Intern, Mechanical Systems (GSFC-5430) — *May 2025 – Aug 2025*

- Designed mounting and support systems for Landsat Next's star tracker sub-system through Autodesk Inventor
- Conducted I&T for the metal seals on the Venus Da Vinci probe, achieving an exceptional leak rate of 10^{-11} cm^3/s
- Assembled and tested optical titanium-sealed sapphire windows for the Venus Da Vinci probe

Intern, Meta-materials (GSFC-5500) — *Jun 2024 – Aug 2024*

- Designed a functional design of the Model-T Deployable Telescope's new gearing train through Autodesk Inventor
- Justified material and gear aspect design choices regarding torque as well as durability through Mathcad
- Surpassed project goals to minimize torque stress on gears by 50% and to increase output velocity by 500%
- Key-note speaker regarding internship learning moments during Space Club NASA luncheon

EASE Research Group (Dr. Amon Millner) — **Needham, MA**

Student Researcher — *Sep 2025 – Present*

- Programming wheel mechanics for five-jointed robot using Python through Raspberry Pi frameworks
- Developing documentation for facile client interaction within public user demonstrations
- Utilizing computer-vision pipelines to automate simple arm functions through embedded camera

Solar Surfer Project Team — **Needham, MA**

Design Lead and Olin Leadership — *Sep 2024 – Sep 2025*

- Designed NASA-regulation CubeSat body with integration in mind through Autodesk Fusion
- Coordinated project collaboration and deliverables with JHU, UC Berkeley and UMD teams as Olin point
- Designed instruments such as magnetorquers, hinges and reaction wheels with Autodesk Fusion
- Presented mission concept at 2025 CubeSat Developers Workshop at California Polytechnic State Institute

BAJA Project Team — **Needham, MA**

Chassis Sub-Team — *Sep 2024 – Dec 2024*

- Redesigned and improved manufacturability and redundancy issues on all-terrain vehicle main chassis body designs
- Collaborated with other sub-teams to accommodate easier drivetrain access and more accessible mounting points
- Ran stress analysis for four different case studies with ANSYS to justify design changes

Public Interest Technology Project Team — **Needham, MA**

Project Manager — *Sep 2024 - Dec 2024*

- Managed engineering teams to assure deliverables are on schedule by creating a project schedule through Notion
- Created project metrics such as time spent on tasks to justify future project scheduling
- Improved documentation by creating best practices along with allocating time after meetings to finalize records