Ismael Rodríguez Sesma

Atlanta, Georgia | ismasesma@outlook.com | (404) 452-9890 | linkedin.com/in/ismaelrsesma

Education

Georgia Institute of Technology, MSc in Aerospace Engineering　　　　　　　Aug 2024 – May 2026
- GPA: 4.0/4.0
- Double Degree Program with Universidad Politécnica de Madrid
- Member, Aerospace Systems Design Laboratory (ASDL)
- Presented Non-Terrestrial Aircraft Design project to industry leaders at the External Advisory Board
- **Ms thesis:** End-Of-Life Considerations for Cislunar Constellation Design
- **Coursework:** Aircraft Design I & II, Orbital Mechanics, Advanced Flight Dynamics, Advanced Design Methods, Mathematical Methods of Applied Sciences I, Statistical Methods

Universidad Politécnica de Madrid, MSc in Aeronautics Engineering　　　　　　　Sep 2022 – May 2026
- **Relevant Coursework:** Advanced Aerodynamics, Advanced Fluid Mechanics, Air-breathing Engine Design, Advanced Aeroelasticity

Universidad Politécnica de Madrid, BSc in Aeronautics Engineering　　　　　　　Sep 2018 – Jun 2023
- BSc Thesis: Dynamic characterization of metamaterials based on selective emptying, graded: 'Outstanding'
- **Relevant Coursework:** Control and Optimization, Finite Element Methods, Flight Mechanics, Structural Mechanics

Experience

Teaching Assistant, Georgia Institute of Technology – Atlanta, GA　　　　　　　Aug 2024 – Present
- Teaching assistant for AE4311 (Aircraft Design I) on Fall 2025 AE3610 (Experiments in Fluid and Solid Mechanics) on Spring 2025 and AE2220 (Dynamics) and AE2010 (Thermodynamics & Fluid Fundamentals) on Fall 2024
- Supported system-level understanding of aircraft dynamics and structures through lab design and analysis in Dynamics, Thermodynamics, and Experimental Mechanics
- Collaborated with students on integrated modeling of mechanical and thermodynamic systems, emphasizing system coupling and energy transfer

Design Engineer, Piedrafita Systems – Paracuellos de Jarama, Spain　　　　　　　Feb 2023 – June 2024
- Developed and validated multi-domain simulation models in MATLAB/Simulink and ANSYS to characterize vibration, damping, and acoustic behavior of mechanical systems
- Collaborated across mechanical, controls, and testing teams to align simulation assumptions and system requirements with test outcomes
- Applied model-based systems engineering (MBSE) principles to improve design traceability and validation workflows, reducing prototype test cycles by 30%

Rocketry Team Design Department Member, LEEM – Madrid, Spain　　　　　　　Sep 2022 – Apr 2024
- Built Python and MATLAB models to simulate transient thermal, vibrational, and acoustic coupling across propulsion and structural subsystems
- Conducted multidisciplinary analyses integrating CFD and sensor data to validate propulsion performance and system health

Hard Skills

Programming Languages: Python, MATLAB/Simulink, Fortran, C++, R

Tools: CATIA v5, Git, JMP, Ansys (Mechanical/Fluent), NASTRAN, CATIA, BKConnect, Excel, LaTeX

Systems & Modeling: MBSE, System Integration, Requirements Management, System Validation, MBD

Languages: English (C1), Spanish (Native), French (A2)