Juan Mejia

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EDUCATION

MSc Industrial and Systems Engineering, University of Oklahoma

- Graduation date: Summer 2025, GPA 3.9/4.0

BSc Aerospace engineering, University of Antioquia

- Graduation date: Spring 2024, GPA 3.4/4.0

PUBLICATIONS

- Velez, Santiago, **Mejia, Juan**, et al. Design of a Martian Ice Sample Return Mission. In *Accelerating Space Commerce, Exploration, and New Discovery conference, **ASCEND 2021***(**pp. AIAA-2021). American Institute of Aeronautics and Astronautics Inc, AIAA.**
- Buitrago-Leiva, **Mejia, Juan**, Puerta-Ibarra, Juan, et al. (2024). *Preliminary design of satellite systems through the integration of model-based system engineering and Agile methodologies: Application to the 3ColStar Mission.* **Aerospace, 11(9), 758.**
- **Mejia, Juan**, et al. "Development of a CANSAT Prototype for the Detection of Vegetation Areas in Precision Agriculture through Aerial Imaging." **Ciencia y poder aéreo 16.2 (2021): 11-28.**
- **Mejia, Juan**, A.D., Raman, S., & Radtke, M. (In preparation). *Multi-objective optimization of additive and traditional manufacturing strategies under uncertainty.*

SELECTED PROJECTS

- **Network Flow & Transportation Optimization** – Built multi-commodity and minimum-cost flow models in Python/Gurobi to optimize hub-to-customer distribution under capacity constraints.
- **Workforce & Scheduling Models** – Developed multi-period optimization for inventory control.
- **Decomposition Techniques** – Applied Dantzig-Wolfe, Benders, Lagrangian relaxation, and column generation to large-scale routing and resource allocation.
- **Facility Location & Assignment** – Modeled capacitated facility location and generalized assignment to optimize base placement and task allocation.

Undergraduate

- **Mars Ice Core Sample Return (AIAA ASCEND Competition)** – Contributed to the 3rd-place winning team in the Undergraduate Space Design Competition; work published in *ASCEND 2021 Proceedings*.
- **3ColStar Mission (Satellite Systems Design)** – Collaborated on the preliminary design of a nanosatellite mission integrating MBSE and Agile methodologies; project resulted in a peer-reviewed publication (*Aerospace, 2024*).
- **CANSAT for Precision Agriculture** – Designed and developed a prototype for aerial imaging to detect vegetation areas; project resulted in a peer-reviewed journal publication (*Ciencia y Poder Aéreo, 2021*).
- **eVTOL Aircraft Design** – conceptual design and performance analysis (2024)

EXPERIENCE

Industrial Engineering Intern, Textron Aviation, 06/2025 - 08/2025

- Reduced forward cabin build-up cycle time for 182/206 airplanes from **23 hrs to 15 hrs** through process redesign.
- Applied **Lean principles** via Kaizen events & Andon boards to improve production flow and reduce waste.
- Built an **optimization model** for cross-training schedules of new hires.

Graduate Research and Teaching Assistant, University of Oklahoma, 05/2024 – 05/2025

- Researched operations optimization and supply chain resilience using mathematical programming and simulation for aerospace spare parts.
- Graded undergraduate/graduate **Quality and Reliability** coursework and provided academic support.

Space Systems Engineer, Colombian Aerospace Force, 9/2023 - 03/2024

- Led satellite design project management, completing ahead of schedule and securing client contract.
- Applied systems engineering and resource planning methods to optimize project timelines and deliverables.

TECHNICAL SKILLS

- Aerospace: **Aircraft design, Spacecraft and Space Mission Design, CAD, STK, MBSE, Manufacturing (AM, Lathe, CNC)**
- Operations Research: **Linear Programming, Python, Gurobi, MATLAB/Simulink**
- Data analytics: **Power BI, R, Python, Tableau, SQL**

HONORS AND AWARDS

- **Recipient, *"Ser Pilo Paga"* National Scholarship (2018)** – Merit-based full scholarship awarded by the Government of Colombia to top-performing students (top ~2% nationwide) based on national test results.

LEADERSHIP AND VOLUNTEERING

- **Founder and Coordinator, Delta-V Research Team (2021)** – Founded and led a research team focusing on rocketry and propulsion. Team won several competitions, published papers and went to conferences.
- **OU Food Pantry and COLSA Student Association Officer**