

FRANCESCO DE LUCA

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SUMMARY

Aerospace Engineering undergraduate with hands-on experience in design, analysis, and testing of engineering systems. Strong interest in applying theoretical concepts to practical aerospace applications; **collaborative**, **fast-learning**, and **highly motivated**.

EDUCATION

Aerospace Engineering – Bachelor of Science – Graduation date: May 2026
Florida Institute of Technology – Melbourne, FL – GPA: 3.00/4.00

Engineering – Associate of Science – August 2022 - May 2023
St. Petersburg College – St. Petersburg, FL - GPA: 3.70/4.00

ACADEMIC PROJECTS

Flight Simulator Technical Assistant

JANUARY 2026 – PRESENT

- Managed maintenance, configuration, and operational readiness of the university's flight simulator, including routine **system checks**, **hardware troubleshooting**, **software setup**, and workspace organization.

Drone-Rover Hybrid for search and rescue missions

JANUARY 2024 – MAY 2025

Capstone Project – Structures/Avionics Engineer

- Created and refined CAD designs using **CREO Parametric**, produced elements through **3D printing**, and iterated designs based on functional testing and structural integrity using **simulation software**.
- Configured a **Pixhawk flight controller** running **ArduPilot** for vehicle control and subsystem coordination.
- Participated in the development of the rocker-bogie suspension system, controlled through an **Arduino microcontroller** with DC motor drives integration.
- Worked on the **Raspberry Pi** responsible for IR camera operation and communication subsystem control.

LEO SAR Satellite – Preliminary Project

JANUARY 2025 – MAY 2025

- Oversaw Assembly, Integration, and Testing (AI&T) subsystem, Space Vehicle Modes, and Master Equipment List (MEL) of preliminary satellite in quality of **Chief Systems Engineer**.
- Gained understanding of **GMAT**, and of **OpenRocket** software simulator.

RESEARCH

Advanced Astrodynamics

JANUARY 2026 – PRESENT

Research Lab Assistant

- Conducted **advanced astrodynamics research** in CR3BP, Lagrange points (L1/L2) halo orbits, applying nonlinear stability analysis for libration-point mission trajectory design.

Software Design and Data Analysis

AUGUST 2024 – AUGUST 2025

Research Lab Assistant

- Cooperated with a team of students in the retrieving of data needed for **statistical analysis** and used **R** and **Python** for **Machine Learning**, Time-series forecasting and **LSTM** design.

PERSONAL PROJECTS

AI for Industry Challenge

JANUARY 2026 - PRESENT

Team Lead

- Led a team in the AI for Industry Challenge, coordinating weekly planning, task assignments, and technical integration to drive project progress.
- Developed and trained reinforcement learning models in **Python** for robotic applications using **NVIDIA Isaac Sim**, enabling realistic simulation and testing.
- Managed version control and collaborative development using **GitHub**, ensuring reproducibility, documentation, and seamless integration of team contributions.

REFERENCES AVAILABLE UPON REQUEST