

Antonio Niro

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EDUCATION

MSc in Aerospace and Astronautical Engineering, Space Engineering <i>University of Naples, Federico II</i>	110/110 cum Laude <i>Dec. 2023 – Dec 2025</i>
BSc in Aerospace Engineering <i>University of Naples, Federico II</i>	<i>Sept. 2019 – Dec 2023</i>

EXPERIENCE

Software Engineer Intern in Galileo programme <i>AIRBUS Defence and Space</i>	Mar. 2025 – Sep. 2025 <i>Rome, IT</i>
<ul style="list-style-type: none">• Developed a Python/C++ control server interfacing FPGA and power subsystems for a Galileo 2nd Generation (G2G) engineering model instrument• Executed high-fidelity spacecraft avionics simulations using the FLP2 simulation environment• Validated command uplink and closed-loop system behavior via CCS5 ground control interfaces on the FLP2 satellite simulator benchtest	
Software Engineer Intern and Master Thesis Student <i>AIRBUS Defence and Space</i>	Sep. 2024 – Feb. 2025 <i>Rome, IT</i>
<ul style="list-style-type: none">• Conducted Master's thesis on "<i>Parametric Sizing of a Beacon-less LEO Optical Feeder Link for ESA-compliant Pointing, Acquisition, and Tracking (PAT) performance.</i>"• Designed a preliminary optical terminal architecture for LEO satellites• Evaluated beacon-less PAT algorithms under ESA ESTOL constraints and built optical link budget models for multiple orbital scenarios• Performed mission and visibility analysis in Ansys STK with Python simulation data pipelines	
Co-Founder and Financial Direction <i>DrinkWeco Sagl</i>	Jun. 2022 – Jan. 2025 <i>Lugano, CH - Hybrid</i>
<ul style="list-style-type: none">• Directed financial strategy and budgeting, optimizing resource allocation to support company scaling• Managed operations related to investors and clients	

PROJECTS

AMPERE Mission Project Manager	Mar. 2025 - Dec. 2025
<ul style="list-style-type: none">• Mission planning for lunar south pole energy storage infrastructure using the ESA's Argonaut Lander. Presented at MVA at AIDAA Conference in Turin, December 2025• Authored ESR and PRR documentation; managed ICDs, MoM and ECSS-compliant deliverables.• Coordinate cross-functional teams and project roadmap.	
Spacecraft Dynamics and Control GNC Engineer	Mar. 2025 - Jul. 2025
<ul style="list-style-type: none">• Title: "<i>Performance analysis of a 6U CubeSat ADCS under eclipse conditions with and without gyroscope measurements</i>"• MATLAB Simulink attitude determination and control system for eclipse operations. Implemented a Multiplicative Extended Kalman Filter (MEKF) for attitude estimation from Sun sensors and magnetometers, coupled with a PD controller. Justified hardware selection and control law parameters through simulations, ensuring pointing accuracy below 0.25° during extended eclipse phases. Detailed modelling of actuators (reaction wheels, magnetorquers) and environmental disturbances with comparative performance analysis with and without gyroscope measurements	
SAGITTARIUS missile, MBDA GNC Engineer	Jan. 2024 - Nov. 2025
<ul style="list-style-type: none">• Anti-drone and UAV ground-to-air missile designed to protect a range of 6 km. Developed with MBDA• Implemented guidance and control algorithms in MATLAB/Simulink for engagement scenario analysis• Designed internal structures in Fusion360 and managed additive manufacturing prototypes	

Fluid Motion Tracking (CV in Python) and CFD Correlation | *Software Engineer* Mar. 2025 - Aug. 2025

- Developed a Python computer vision pipeline (OpenCV) to extract velocity fields and trajectories from experimental fluid videos
- Validated results against Ansys FLUENT CFD simulations; modeled microgravity sloshing dynamics
- **GitHub:** github.com/antonioniro/fluid_trackerv2

Prom(He)t3us CubeSat | *System Engineer* Sep. 2023 - Jan. 2024

- Coordinated subsystem integration for a 3U CubeSat lunar mission
- Managed system requirements and conducted mass, power, and architecture trade studies
- Designed internal structural CAD and additive manufacturing workflows

CERTIFICATIONS AND TRAINING

STK Grand Master Certification (Level 3) Jan. 2026

Ansys AGI

Systems Engineering Fundamentals Jan. 2026

MathWorks

Project Management Professional Certificate Feb. 2026

Google, Coursera

Simulink OnRamp Jun. 2025

MathWorks

TECHNICAL SKILLS

Aerospace Engineering: Space Systems Engineering, AOCS/ADCS, Satellite Telecommunications, Payload Design, Orbital Mechanics, Orbit Propagation, Flight Dynamics, Mission Phases

Simulation and Tools: MATLAB/Simulink, Ansys STK, Ansys FLUENT, Zemax, MBSE, SAR and RADAR Modeling

Standards: ECSS, CCSDS Requirements and Standards

Programming: Python, C/C++, MATLAB, Swift, Linux, AI and Large Language Models (LLMs) Systems

CAD and Manufacturing: SolidWorks, CATIA, Autodesk Fusion 360, AutoCAD, Ultimaker Cura

Professional Skills: Problem Solving, Communication, Teamwork, Leadership, Critical Thinking, Space Project Management

LANGUAGES

Italian: Native

English: C1 – Fluent, Professional Working Proficiency (Negotiation)

Spanish: A2 – Elementary Proficiency

French: A1 – Beginner