

RICCARDO ALESSANDRO BEVONI

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SUMMARY

M.S. student in Aerospace Engineering Sciences at CU Boulder, specializing in Bioastronautics, with experience in avionics development, hardware testing, lunar habitat power-system modeling, and preliminary space habitat design.

EDUCATION

M.S. in Aerospace Engineering Sciences & M.E. in Engineering Management — Dual Degree 08/2026 – Present
University of Colorado Boulder *Boulder, CO, USA*
Aerospace Focus: Bioastronautics | Lockheed Martin Engineering Management Program
B.Sc. in Aerospace Engineering 08/2022 – 12/2026 (expected)
University of Bologna – Alma Mater Studiorum *Forlì, Italy*
Thesis: Preliminary Sizing and Trade-off Analysis of a VSAT-Based Lunar Surface Power Architecture for a Pressurized Habitat

PROFESSIONAL EXPERIENCE

Research Intern, Italian Space Agency – ASI (Rome, Italy) 03/2026 – 06/2026

- Developed a Python-based parametric model to size vertical solar arrays and battery storage for a pressurized lunar habitat, estimating a 6.2-tonne battery mass for a 10 kW reference load over a 52-hour eclipse.
- Assessed technology gaps for sustained crewed lunar surface operations within NASA's Artemis and Moon-to-Mars architectures, focusing on ECLSS, thermal control, and habitat interfaces.
- Reviewed NASA, ESA, ASI, and industry documentation to evaluate candidate technologies against mass, power, and technology readiness constraints, identifying key integration challenges for lunar infrastructure.

Engineering Intern, Tazzari GL (Imola, Italy) 04/2025 – 06/2025

- Supported the integration and testing of battery packs, inverters, and auxiliary power electronics for heavy-vehicle electrification, updating wiring diagrams and analyzing electrical performance data to identify inefficiencies.

Mechanical Engineering Intern, RCM S.r.l. (Imola, Italy) 10/2023 – 03/2024

- Designed and modeled structural metal components using SolidWorks and AutoCAD, producing technical drawings with GD&T specifications.
- Supported dimensional inspection, documented non-conformities, and proposed minor design adjustments.

SELECTED ENGINEERING PROJECTS

Project Manager, YUE Space Habitat Design, CU Boulder (Boulder, CO) 08/2026 – Present

- Lead a ten-member multidisciplinary team developing the preliminary design of a free-flying crewed habitat for Earth and lunar orbit, including an EVA in lunar orbit.
- Manage project schedules, milestones, and deliverables, coordinating activities across multiple engineering disciplines.

Avionics Engineer & Subsystem Lead, Aurora Rocketry, University of Bologna (Forlì, Italy) 05/2024 – 11/2025

- Progressed from avionics development on Borealis to leading a three-member avionics and power team for Nemesis, defining subsystem requirements, interfaces, and testing strategies.
- Designed a redundant power architecture using LiFePO₄ batteries and supercapacitor backup networks, enabling over six hours of autonomous operation.
- Developed a 900 MHz telemetry link and microcontroller firmware for packetization and error checking, reducing data dropouts by approximately 45% compared with the previous vehicle.
- Assembled and tested custom PCBs interfacing with 30+ sensors, performed hardware debugging, and supported vibration and thermal cycling tests. Nemesis placed second in the solid-motor category at EuRoC 2025 and eighth overall.

Airbus Nova Horizon Workshop 2025, University of Bologna (Forlì, Italy) 01/2025 – 08/2025

- Led the sloshing-tank analysis and performed multiphase CFD simulations in ANSYS Fluent for a cylindrical tank with a waist constriction and perforated baffles.
- Quantified a 32.7% reduction in pressure fluctuations relative to the baseline geometry and coordinated the integration of the resulting load envelopes into vehicle-level analyses.

Software: Python, MATLAB, ANSYS Fluent, SolidWorks, AutoCAD, KiCad, Altium, Simulink

Hardware & Prototyping: PCB Assembly, Soldering, Oscilloscope, Multimeter, 3D Printing, CNC Machining