

Rémi Caresche

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EDUCATION

Higher Institute of Aeronautics and Space (ISAE SUP-AERO) — 2024-2025 — Toulouse, France

Advanced Master space system engineering - Coursework: System engineering, orbital mechanics, space propulsion, GNC, launcher, satellites, mission design

Relevant project: I developed a satellite constellation using GMAT and MATLAB and designed its structural model using CAD.

European Space Agency, Training on spacecraft operation — October 2024 — ESOC, Germany

National Institute of Applied Science in Toulouse (INSA) — 2019-2024 — Toulouse, France

MSc Mechanical engineering - Coursework: Advanced fluid mechanics, heat transfer, structures, design, CFD, thermal machines, MBSE, MBSA, FEM, actuators, mechatronics, systems engineering

Relevant project: I developed a CFD (Fluent) model for platooning multiple trucks with the goal of reducing fuel consumption.

Paris Observatory, University degree in Planetary Sciences — 2023-2024 — Paris, France

Politecnico di Milano — September 2022 - February 2023 — Milan, Italy

Erasmus program - MSc Aerospace engineering - Coursework: Aerodynamics, aerospace structure, space propulsion, flight mechanics, guidance, and navigation of space systems

Relevant project: I modelled two NACA wings in a "tandem" configuration using the Hess-Smith panel method, using MATLAB software and XFLR5.

EXPERIENCE

NASA Goddard Space Flight Center — November 2024 - May 2025 — Remote (France)

Scientist assistant — Orbital mechanics

Assistance in orbital mechanics calculation projects using GMAT and Python.

NASA Jet Propulsion Laboratory — March – August 2024 — Pasadena, California, USA

Research project — Investigating the Crystalline Structure of Ices on Outer Solar System Bodies

I focused on adapting a Low Energy Electron Diffraction (LEED) instrument to investigate the crystalline structure of ice on outer solar system bodies. Additionally, I conducted research on the sublimation and crystallization processes of cometary ices, with a particular focus on studying the sublimation of CO trapped within a CO₂ matrix (using python).

EDVANCE (EDF Group) — June - September 2023 — Montrouge, France

Intern as a HVAC Test Engineer

I was involved in retrieving and verifying safety criteria related to a ventilation system. Additionally, I transposed test results from the EPR nuclear power plant in Flamanville to extreme conditions.

Student representative — 2021-2022 — Toulouse, France

Students' representative in the Boards of Administration, Discipline at INSA Toulouse, as well as responsible for the External Relations department of the student representatives.

SKILLS & INTERESTS

Technical: Python, ADA, MATLAB, Simulink, C++, CAPELLA, XFLR5, Abaqus, SolidWorks, Catia, Creo, Fluent, Latex, GMAT

Language: Native French, fluent English TOEIC 910/990 - TOEFL 96/120

Sports: President of the INSA Toulouse boxing club, French boxing (white glove), karate (blue belt)