




RAPHAEL ALVES HAILER

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EDUCATION

State University of Campinas - Unicamp B.Sc. in Mechanical Engineering - Expected graduation: 12/2025 - GPA: 0.9348/1.	Brazil, 03/2019 - Present
ENSTA Paris - École nationale supérieure de techniques avancées M.Sc. Equivalent – Diplôme d'Ingénieur - GPA: 4.05/4.3. •Specialization: Smart and sustainable mobility.	France, 08/2022 - 09/2024

OTHER ACADEMIC EXPERIENCES

Jet Propulsion Laboratory - NASA Jet Propulsion Laboratory Visiting Student Research Program (JVSRP).	United States, 09/2024 - 11/2024
École Polytechnique Visiting Student – Advanced classes in space science and challenges.	France, 09/2023 - 03/2024

GRANTS AND AWARDS

Leopoldo Américo Miguez de Mello Research, Development and Innovation Center Recipient of a merit-based undergraduate research assistantship.	Brazil, 05/2025 - Present
Fundação Estudar - Tech Fellowship 2024 Selected as 1 of only 13 recipients of the Tech Fellowship 2024 scholarship, a highly competitive merit-based program that received more than 10,000 applications. Selected candidates demonstrated academic excellence and leadership skills in the technology sector.	Brazil, 09/2024 - Present
Capes - Coordination for the Improvement of Higher Education Personnel Recipient of the France Ingénieur Technologie (BRAFITTEC) merit-based scholarship, following a competitive national call among top Brazilian universities.	Brazil, 08/2022 - 08/2024
Brazilian Space Agency (AEB) Merit-based funding awarded to support the development a test base for solid rocket engines at Antares Aerospace Design Team (Unicamp).	Brazil, 07/2020 - 01/2021
Latin American Space Challenge 2021 3rd place award in the 1000 meters apogee category in an international rocketry competition.	Brazil, 2021
Latin American Space Challenge 2020 2nd place award in the 500 meters apogee category in an international rocketry competition.	Brazil, 2020

RESEARCH EXPERIENCE

Embraer Research intern: developed a framework to generate multiple CATIA-based EVE-100 Aircraft (Embraer's eVTOL) configurations for structural testing.	Brazil, 01/2025 - 03/2025
EDF Lab Paris-Saclay Research intern: developed a multi-objective optimization framework to improve fatigue simulation models using finite elements in the European INCEFA-SCALE project, guided by Stéphan Courtin.	France, 04/2024 - 09/2024
Inria Saclay Research intern: conducted research on stochastic optimization of X-ray micro-CT domain size using PuMA (NASA), guided by Pietro Marco Congedo in partnership with the Italian Space Agency (ASI).	France, 05/2023 - 08/2023

TEACHING EXPERIENCE

State University of Campinas - Unicamp Undergraduate teaching assistant (PAD program) in Thermal Engineering 1 course.	Brazil, 08/2025 - Present
State University of Campinas - Unicamp Undergraduate teaching assistant (PAD program) in Thermodynamics 1 course.	Brazil, 03/2022 - 07/2022
Private Tutor Mathematics and physics tutoring for high school and undergraduate students.	Brazil, 10/2021 - 07/2022

CONFERENCE ABSTRACTS

- [1] Raphael Alves Hailer et al. "Modeling the Contaminant Footprint of Spacecraft Operating in Near-Vacuum". In: *56th Lunar and Planetary Science Conference (LPSC)*. The Woodlands, Texas, United States, Mar. 2025. DOI: 10.13140/RG.2.2.30992.52484.

RESEARCH PROJECTS

<i>Pressure Transmissibility in Sedimented Beds</i> •Advisor: Flávio de Campos Bannwart (Unicamp).	Brazil, 05/2025 - Present
<i>Non-Intrusive Polynomial Chaos Expansion Applied to Full-Order Stochastic CFD</i> •Advisor: Mohamed Bouarfa (ArianeGroup).	France, 09/2023 - 03/2024

EXTRA COURSES

Centre national d'études spatiales - CNES Intensive course on space science and technology (40 hours).	France, 09/2023
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EXTRACURRICULAR ACTIVITIES

Structures and Aerodynamics Department Leader - Antares Aerospace Design Team Managed the Structures and Aerodynamics Department members and oversaw all rocket projects for international competitions.	Brazil, 02/2020 - 02/2022
Structures and Aerodynamics Department Member - Antares Aerospace Design Team Responsible for fabricating the team's rockets, selecting materials, and organizing the rockets subsystems. Additionally, Performed numerical simulations to predict the rocket apogees and designed parachutes for recovery systems.	Brazil, 04/2019 - 02/2020

VOLUNTEER WORK

Cop1 - Solidarités Étudiantes Contributed with 20 hours of volunteer work, distributing food for students in need.	France, 2023
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LANGUAGES

Language	Proficiency level
Portuguese	Native
English	C1
French	C1

SKILLS

Engineering softwares	Programming languages	Additional skills
Porous Microstructure Analysis (PuMA) software, SPARTA, Creo Parametric, Code Aster, Salome Meca, 3DEXPERIENCE (3DX), Microsoft Office	Python, MATLAB and OCTAVE	Experience with LaTeX, Linux and usage of high performance computing (HPC) cluster