Leonardo Mouta Pereira Pinheiro

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Education

- **ISAE-SUPAERO** — Toulouse, France
  Engineering Degree (MSc) - Aerospace Engineering — *Sep 2020 - Dec 2022*
  Double specialization in Autonomous Systems (with emphasis on UAVs) and Fluid Dynamics.
- **Aeronautics Institute of Technology (ITA)** — Sao Jose dos Campos, Brazil
  Bachelor's Degree - Aerospace Engineering — *Jan 2017 - Dec 2022*
- **Aeronautics Institute of Technology (ITA)** — Sao Jose dos Campos, Brazil
  Minor Degree - Engineering Physics — *Jul 2019 - Dec 2022*

Research Experience

- **Laboratory for Analysis and Architecture of Systems (LAAS-CNRS)** — France
  Research Internship — *Apr 2022 - Sep 2022*
  - **Manipulating a cable-suspended object with multiple UAVs**: During my internship at LAAS, my goal was to combine a constraint-based modelling of an object's movement together with RRT algorithms for path planning in order to determine how a fleet of UAVs could cooperatively and autonomously move an object from a starting pose to a goal pose
- **Dassault Aviation/ISAE-SUPAERO** — France
  Joint Research Project — *Aug 2021 - Mar 2022*
  - **UAV flight mechanics**: Working in close collaboration with Dassault Aviation, I led a team of students into solving the problem of how to best assess flight dynamic quality - including precision, speed and stability - for multirotor UAVs under various sensor loads
- **ISAE-SUPAERO** — France
  Research Project — *Mar 2021 - Jun 2021*
  - **Airborne Collision Avoidance Systems (ACAS) for quadcopters**: In this project I applied new ACAS X technologies, which are based on modeling airborne collisions as Markov decision problems, to the scenario of colliding quadcopters, resulting in a novel article at my university
- **Aeronautics Institute of Technology (ITA)** — Brazil
  Research Project — *Jul 2019 - Jul 2020*
  - **Philosophical approaches to Systems Engineering**: This project consisted of trying to adapt the methodology of "decadialectics", which was developed by Brazilian philosopher Mário Ferreira dos Santos, to the field of Systems Engineering, in order to obtain a more complete view of the relations between a system and its environment

Skills Summary

- **Programming**: Python, C/C++, Matlab/Simulink, Java, Mathematica, among others
- **Platforms**: Linux, Windows, ROS, Gazebo, Arduino, PX4, Dassault CATIA, Docker, Git, LaTeX, among others
- **Languages**: Portuguese (native), English (fluent), French (fluent), Spanish (intermediate), Russian (beginner)

Work/Additional Experience

- **Aeronautics Institute of Technology (ITA)** — Brazil
  Teaching Assistantships — *Jul 2018 - Jul 2020*
  - **Teaching assistant**: Introduction to Computing
  - **Teaching assistant**: Differential and Integral Calculus II
  - **Teaching assistant**: Solid Mechanics
- **BOCOM BBM Credit Bank** — Brazil
  Summer internship — *Jan 2019 - Mar 2019*
  - **Macroeconomics/Quantitative Trading department**: Working between the bank's macroeconomics and quantitative trading departments, I developed tools to predict how the yield of variable-rate bonds indexed by different indicators would convert between each other. The software I developed allowed the bank to trade between differently indexed bonds in an informed manner, thus solving a longtime need
- **Entrepreneurship League eITA - Aeronautics Institute of Technology (ITA)** — Brazil
  Co-founder and Director — *Apr 2017 - Jan 2018*

Honors and Awards

- CAPES-BRAFITEC Scholarship - 2021/2022
- Bahia Asset Management Scholarship - 2019
- Weis Award for excellence in teaching - ITA, Brazil - October, 2019. Second student ever to receive this award.
- "Best Student" Award - Reserve Officer's Training Course - December, 2017
- Medals in Scientific Olympiads: 5 Gold, 2 Silver, 2 Bronze