# 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 - Aeronautics Institute of Technology (ITA)** — Brazil
  *President* — *Jan 2018 - Dec 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