Leonardo Mouta Pereira Pinheiro

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Education

- **Aeronautics Institute of Technology (ITA)** — São José dos Campos, Brazil
  Minor Degree - Engineering Physics — *Jul 2019 - Dec 2022*
  Advisor: *Prof. Dr. Ivan Guilhon Mitoso Rocha*

- **Aeronautics Institute of Technology (ITA)** — São José dos Campos, Brazil
  Bachelor's Degree - Aerospace Engineering — *Jan 2017 - Dec 2022*
  Advisor: *Prof. Dr. Christopher Shneider Cerqueira*

- **ISAE-SUPAERO** — Toulouse, France
  Master's Degree (Diplôme d'Ingénieur) - Aerospace Engineering — *Sep 2020 - Dec 2022*
  Double specialization in Autonomous Systems (with emphasis on UAVs) and Fluid Dynamics
  Advisor: *Prof. Dr. Yves Brière*

Research Experience

- **Laboratory for Analysis and Architecture of Systems (LAAS-CNRS)** — France
  Research Internship. Advisors: Dr. Simon Lacroix and Dr. Hai-Nguyen Nguyen — *Apr 2022 - Sep 2022*
  - **Manipulating a cable-suspended object with multiple UAVs**: During my internship at LAAS, one of the best robotics laboratories in the world and which is part of the prestigious French CNRS, I developed algorithms that combined path planning and object manipulation so that a fleet of UAVs could cooperatively transport an object, placing it at a desired pose, regardless of the environment's disposition

- **Dassault Aviation/ISAE-SUPAERO** — France
  Joint Research Project — *Apr 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. Advisor: Dr. Jean-Baptiste Chaudron — *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. Advisor: Prof. Dr. Christopher Shneider Cerqueira — *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, Arduino, SU2, Dassault CATIA, Siemens NASTRAN, Missile Datcom, LaTeX
- **Languages**: Portuguese (native), English (fluent), French (fluent), Spanish (intermediate), Russian (beginner)
- **Soft Skills**: Leadership, Writing, Public Speaking, Teaching, Agile Methods

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 Bank** — Brazil
  Macroeconomics intern — *Jan 2019 - Mar 2019*

Honors and Awards

- 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