Leonardo Mouta

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science in Robotic Systems Development - GPA: 4.25/4.0 — *May 2025*

ISAE-SUPAERO — Toulouse, France
Master of Science in Engineering Aerospace - Focus in autonomous systems and aerodynamics - GPA: 4.04/4.0 — *Dec 2022*

Aeronautics Institute of Technology (ITA) — Sao Jose dos Campos, Brazil
Bachelor of Science in Aerospace Engineering │ Minor Degree in Engineering Physics - GPA: 8.6/10.0 — *Dec 2022*

EXPERIENCE

JPMorgan Chase & Co. AI Maker Space — Pittsburgh, PA
Part-time Technical Assistant — *Sep 2023 - Present*
- Set up and maintained the infrastructure for the space's drone cage. Also developed ROS/Python programs for the autonomous flight of Crazyflie drone swarms, which worked in conjunction with the cage's mocap system.
- Wrote motion planning demo programs using ROS, Python and C++ for the space's Kinova arms. These included picking objects while avoiding obstacles and tracking based in vision+depth.
- Implemented neural-based vision programs, such as 3D pose tracking, monocular depth estimation and 3D segmentation, to showcase the capabilities of the space's VPUs.

Colegio Olimpo (Middle and High School) — Brasilia, Brazil
Physics Teacher — *Feb 2023 - Aug 2023*
- Instructed senior high school students in physics, with a focus on preparing them for admission exams to the Aeronautics Institute of Technology and the Military Institute of Engineering, the premier engineering universities in Brazil.

Laboratory for Analysis and Architecture of Systems (LAAS-CNRS) — Toulouse, France
Research Intern — *Apr 2022 - Sep 2022*
- Developed and tested innovative contact-based RRT planning algorithms tailored for swarms of drones transporting slung loads, achieving a 73% success rate across various scenarios.

BOCOM BBM Credit Bank — Rio de Janeiro, Brazil
Quant Trading/Macroeconomics Summer Intern — *Jan 2019 - Mar 2019*
- Used data analysis and financial mathematics to create a tailored Python package for quantitative trading, facilitating the bank's ability to convert bonds linked to various indexes, thereby addressing a longstanding need.

TECHNICAL PROJECTS

Koppers Inc. — Pittsburgh, PA
Capstone Project — *Sep 2023 - Present*
- Was part of a team tasked with developing a robot designed to clean chemical waste within Koppers' factories, with a focus on enhancing production output, safeguarding workers' health, and optimizing responsiveness to client demands.

Dassault Aviation/ISAE-SUPAERO — Toulouse, France
Joint Research Project Member — *Aug 2021 - Mar 2022*
- Contributed as a member of a student team in devising metrics to effectively evaluate flight dynamic quality for multirotor UAVs across diverse sensor loads. These metrics are intended for implementation by Dassault Aviation in their automated plane maintenance processes.

Department of Complex Systems Engineering - ISAE-SUPAERO — Toulouse, France
Student Researcher — *Mar 2021 - Jun 2021*
- Authored Python programs to test pioneering ACAS X technologies, aimed at identifying horizontal resolutions for quadcopters on collision trajectories. Achieved a simulation success rate exceeding 99%.

SKILLS SUMMARY

Robotics:	Controls, Motion Planning, Autonomy, Mobile Platforms, Estimation, Aerial Robotics, Manipulation
Programming:	Python, C/C++, ROS/Gazebo, Matlab/Simulink, Java, Mathematica, R
Other Skills:	Linux, Windows, PX4 Autopilot, Docker, Git/Github, SOLIDWORKS, Fusion 360 CAD and PCB
	Artificial Intelligence, Machine Learning, Computer Vision, Neural Networks, Quantum Computing
	Model-Based Systems Engineering, Embedded Systems, Electronics
	Jira, Confluence, Microsoft Office

CERTIFICATIONS

Certified SOLIDWORKS Associate (CSWA) in Mechanical Design — Jul 2023
Issued by Dassault Systemes

HONORS AND AWARDS

CAPES-Brafitec Scholarship: Government scholarship awarded to exceptional Brazilian students who were selected to pursue double degree programs in France.

Bahia Asset Management Scholarship: Stipend awarded to selected students at prestigious Brazilian universities who excelled as teaching assistants.