

CAIO V. G. FREITAS

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ABOUT ME

23 years old, born in Brazil. I started my studies in **electrical engineering** at USP (University of São Paulo), alongside with my experience in the aerial robotics team Skyrats. and was selected for a **Double Degree** exchange at TU Darmstadt (covering the whole master), currently halfway through. Writing my Bachelor's thesis on visually localizing and manipulating objects with drones.

EDUCATION

ESCOLA POLITÉCNICA DA USP
ELECTRICAL ENGINEERING - B. SC.
São Paulo | Jan 2018 - Set 2021 (TBC.)

TECHNISCHE UNIVERSITÄT DARMSTADT
ELEKTROTECHNIK UND
INFORMATIONSTECHNIK M. SC.
AUTOMATISIERUNGSTECHNIK
Darmstadt | Oct 2021 - Present

SKILLS

TECHNICAL SKILLS

Proficient with:

C/C++ • Python • Matlab • Git • Linux •
ROS • Main ML&DS Tools/Libraries •
Power BI • MS Excel

Improving myself with:

QML • Javascript • MS PowerPoint • MS Word

Have an idea with:

VHDL • Flutter •

SOFT SKILLS

Team work • Communication •

Leadership • Adaptability

Languages

Portuguese (native) • English (fluent) •

German (advanced) • Spanish

(intermediate) • Italian (basic)

LINKS

[LinkedIn](#) | [GitHub](#)

EXPERIENCE

NEXPLORE TECHNOLOGY GMBH | WORKING STUDENT ON ROBOTICS AND DATA PROCESSING

December 2022 – Present

- Operation of Boston Dynamic's Spot at construction sites
- Development of tools and features for operating Spot
- Pre- and postprocessing of data collected with Spot
- Point of contact with TU Darmstadt's researches on robotics (in collaboration with Nexplore)
- Creation of custom dataset oriented by auto-annotation and an active learning pipeline
- Upkeeping of on-site monitoring hardware in construction sites

TEAM HECTOR | RESEARCH ASSISTANT ON UI DEVELOPMENT

October 2021 – December 2022

- Maintenance of the user interface for robot operation (QML and Javascript integrated with ROS)
- Design and implementation of new features
- Assure integration with the robot's base functionalities

NAVI YIELD LTDA. | DATA ANALYST INTERN

October 2020 – September 2021 | São Paulo, Brazil

- Implementation of a data-driven credit analysis policy (applied to agribusiness companies)
- No-SQL database project
- Monitoring of pulverized credit portfolios through Power BI Dashboards
- Pilot and POCs for a proprietary tool for dashboard creation
- C# Web scraper for asset monitoring (from resource-backed loans)
- Statistical modelling on top of public data from government agencies

INVTECH | AERIAL ROBOTICS INTERN

July 2019 – February 2020 | São Paulo, Brazil

- Functional prototype of an autonomous hexacopter drone
- Precision landing system assisted by computer vision
- Hardware and software of a hangar for storage and self-charge
- Graphical interface using Qt for user operation
- Android/iOS app for manual control of a transportation robot with Flutter

SKYRATS: AUTONOMOUS DRONES TEAM | HEAD OF SOFTWARE

March 2018 - November 2020 | São Paulo, Brazil

- Management of software team with Agile
- Object detection and recognition using machine learning and/or computer vision (CV)
- Trajectory planning and obstacle avoidance
- Maintenance of simulation environment and software stack
- Indoor localization projects (LIDAR SLAM and vision-based)

Accomplishments

- 1st Place in National Competition Cobruf Drones 2018 and 2019
- International MicroAir Vehicle Conference and Competition (IMAV) – Madrid, 2019 - 5th place (outdoor) and 6th place (indoor)