Cape Coral, FL
United States

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Employment

Machine Learning Engineer — **Sigmoidal** — **2020 – Ongoing**

- Built an automated diagnostic system for 12-lead ECGs using a deep neural network on AWS SageMaker, processing 345K exams (17B+ data points) and achieving more than 98% specificity.
- Built an ETL workflow to integrate multi-channel data, powering customer journey analytics and lead scoring with a LightGBM model, boosting conversion rates by 20%.
- Founded and scaled a business to >R$1M/year in revenue, serving 6,000+ students.
- Designed and coordinated two accredited graduate programs in Data Science and Computer Vision.
- Built content platform with 130 technical articles and 400 hours of video, attracting 3M visitors.

Satellite Mission Engineer — **Space Operations Centre** — **2018 – 2020**

- Led the Remote Sensing Department, overseeing a technical team of 10+ staff and officers.
- Developed a computer vision model to identify and track oil spill expansion during Brazil's 2019 ecological crisis.
- Built Brazil's first SAR satellite image downlink and processing pipeline, enabling surveillance over 225,000+ km² of the Amazon rainforest.
- Developed ML-based geospatial models to optimize military resources, and crew scheduling during "Operation Acolhida" (Venezuelan refugee crisis), supporting 100,000+ refugees.
- Created a real-time drone surveillance system using a custom YOLOv5 model, achieving >90% accuracy in field tests.
- Developed a metaheuristic algorithm to optimize EROS-B satellite scheduling, increasing target collection by 35% per pass.
- Fused satellite imagery using ArcGIS Pro and TensorFlow to detect illegal airstrips.
- Served as liaison for the Brazilian Air Force's largest C4ISR program, defining operational requirements for EMBRAER and integrating data-driven analytics into Air Task Orders.

Machine Learning Researcher — **Institute for Advanced Studies** — **2016 – 2018**

- Integrated radar and sensor data into strategic operations planning for intercepting low-flying illicit aircraft.
- Developed a mission planning plugin for a GIS-based defense platform, using a hybrid genetic algorithm implemented in Python and C++ to optimize satellite image acquisition schedules.
- Published first-author article on applying System Dynamics to Air Force Effects-Based Operations planning at a leading Latin American defense conference.
- Published a first-author article on satellite imaging scheduling in a premier Brazilian Air Force journal, presenting a hybrid genetic algorithm to optimize satellite task scheduling.
- Conducted applied research in C4ISR systems, designing AI-driven pipelines that integrated computer vision and geospatial data for aerospace mission support.
- Introduced System Dynamics modeling for effects-based operations planning; methodology later adopted by the Brazilian Aerospace Command for mission simulations.

Military Pilot — **Brazilian Air Force** — **2004 – 2016**

- Accumulated over 1,000 flight hours, executing diverse military missions.
- Served 4 years as a military instructor for the Cadet Corps and as a flight instructor on T-25 Universal, T-27 Tucano, and AS-350 Esquilo aircraft.
- Directed the IT department at the 1st/8th GAV SAR Squadron, reducing workflow delays by 50% through Python-based automation.
- Completed advanced operational training programs, including Jungle Survival, Sea Survival, and Combat Search and Rescue courses.
- Led the migration of a military airbase's IT infrastructure from Windows to Linux and advised on secure network architecture.

Education

Brazil — **Aeronautics Institute of Technology** — **2016 – 2018**
- MSC in Aerospace Engineering

Brazil — **Air Force University** — **2019**
- MBA in Project Management

Brazil — **Air Force Academy** — **2004 – 2007**
- BS in Aeronautical Science

Advisory Roles & Awards

- **U.S. Green Card, EB1A Visa:** Granted for individuals of extraordinary ability.
- **Chair, Innovation Committee** (2023 – 2024). International Association of Artificial Intelligence (I2AI), Brazil's foremost AI-focused international association.
- **Order of the Sword:** Distinguished honor conferred by the Air Force Cadet Corps in recognition of exemplary conduct.
- **Bronze Military Medal:** Recognized for a decade of exceptional performance, unwavering dedication, and skillful execution.

Languages and Technologies

- Python; Machine Learning; TensorFlow; PyTorch; OpenCV; C++; R; Optimization; Operations Research