Contact

Florianópolis, Santa Catarina, Brazil
saraiva.ufc@gmail.com

www.linkedin.com/in/saraivadev (LinkedIn)
www.saraiva.dev (Portfolio)

Top Skills

Python
Data Science
Machine Learning

Languages

Português (Native or Bilingual)
English (Professional Working)

Certifications

Scrum Foundation Professional Certificate (SFPC)
Verified International Academic Qualifications
DevOps Essentials Professional Certificate (DEPC)

Publications

Automatic Mapping of Center Pivot Irrigation Systems from Satellite Images Using Deep Learning
Construção de Mosaicos Temporais Normalizados de Imagens Planet
Reconstructing Three Decades of Land Use and Land Cover Changes in Brazilian Biomes with Landsat Archive and Earth Engine

Marciano Saraiva

Python | Machine Learning | Artificial Intelligence | Data Analysis | Big Data | Computer Vision | Geoprocessing | Remote Sensing
Florianópolis, Santa Catarina, Brazil

Summary

My first contact with programming was in 2013 during my Information Systems degree. After graduating in 2017, I started my career at Agrosatélite, where I worked with geospatial data and remote sensing on projects of national and international relevance. I developed artificial intelligence models for agricultural mapping, evapotranspiration estimation, identification of agricultural areas, and estimation of carbon emissions and removals.

In late 2021, I started working at Brain Agriculture, a startup acquired by Serasa Experian. At Brain, I was responsible for creating and structuring the Crop Monitor product, which integrates satellite images, meteorological data, and artificial intelligence algorithms to provide insights into crop health and yield forecasts.

Over the past 7 years, I have worked in a variety of areas, from software development, data analysis, data engineering to product development, which has allowed me to gain a comprehensive view of the entire solution development cycle and apply this knowledge to high-impact projects.

See my portfolio at https://www.saraiva.dev

Experience

Brain Agriculture
2 years 10 months

Solutions Consultant
July 2022 - Present (2 years 1 month)
Indaiatuba, São Paulo, Brazil

Achievements:

- Led the creation and deployment of the Crop Monitor product for Serasa Experian, an advanced tool for agricultural monitoring. The platform integrates

satellite imagery, weather data, and machine learning algorithms to provide accurate and actionable insights for crop health and yield predictions. For more details, visit https://www.serasaexperian.com.br/solucoes/crop-monitor.
Skills: Product Management, Product Development, Python, Django, JavaScript, Node.js, Geoprocessing, Remote Sensing, Big Data, Machine Learning, Deep Learning, Artificial Intelligence (AI), PostgreSQL, SQL, MongoDB.

Senior Software Development Analyst
October 2021 - June 2022 (9 months)
Indaiatuba, São Paulo, Brazil

Achievements:
- Worked on structuring the geospatial data infrastructure for the Agribusiness unit, optimizing acquisition and processing workflows for ESG analysis and crop monitoring.
Skills: Python, Node.js, Extract, Transform, Load (ETL), PostgreSQL, MongoDB, Big Data.

Agrosatellite Applied Geotechnology
4 years 2 months

Senior Software Development Analyst
October 2019 - September 2021 (2 years)
Florianópolis e Região, Brasil

Achievements:
- Led the Development of the SIMFaz Platform 2.0: Enhanced agricultural monitoring and management with advanced geospatial analytics and satellite imagery, supporting credit decision-makers in making data-driven decisions;
- Led the Development of the Soy Traceability System for Coamo: Enhanced supply chain transparency by tracking soy from farm to consumer, ensuring quality control, and promoting sustainable agricultural practices;
- Contributed to Chapter 2 of Brazil's Fourth National Communication to the UNFCCC by calculating greenhouse gas emission and removal matrices and processing satellite images. This work supported national efforts to monitor and report on climate change impacts and mitigation strategies;
- Implemented the SSEBop Evapotranspiration Model: Successfully deployed the SSEBop model for Brazil using remote sensing data in collaboration with USGS and Brazil's National Water Agency (ANA). The results were published in an ANA technical report, and the model was made accessible through the SSEBop_BR application, enhancing water resource management and agricultural monitoring;

- Contributed to the technical publication "Polos nacionais de agricultura irrigada: mapeamento de áreas irrigadas com imagens de satélite" in collaboration with Brazil's National Water Agency (ANA). This work involved detailed mapping of irrigated areas across Brazil using satellite imagery, providing valuable insights for water resource management and agricultural planning;
- Mapped agricultural classes and planted forests annually from 1985 to 2018 for MapBiomas Collections 5.0 and 6.0. Achieved accuracies for 2018: Agriculture - User's accuracy: 91%, Producer's accuracy: 90%; Planted Forests - User's accuracy: 93%, Producer's accuracy: 66%;
Skills: Python, Django, Google Earth Engine, TensorFlow, Estatística, Keras, Scikit-Learn, Big Data, Machine Learning, Deep Learning, Artificial Intelligence (AI).

Mid-level Software Development Analyst
May 2018 - September 2019 (1 year 5 months)
Florianópolis, Santa Catarina, Brazil

Achievements:
- Mapped central irrigation pivots using high-resolution satellite images and deep learning, achieving a User's accuracy of 88% and a Producer's accuracy of 99%;
- Mapped irrigated and fertigated sugarcane in Brazil using satellite images. Of the 11.2 million hectares mapped, 79.5% were identified with fertigation, 15.5% with rescue irrigation, 4.2% with deficit irrigation, and 0.8% with full irrigation;
- Mapped agricultural classes and planted forests annually from 1985 to 2018 for the entire Brazilian territory using satellite images and machine learning models for MapBiomas Collections 4.0 and 4.1. Achieved accuracies for 2018: Agriculture - User's accuracy: 83%, Producer's accuracy: 87%; Planted Forests - User's accuracy: 84%, Producer's accuracy: 71%.
Skills: Google Earth Engine · Python · Scikit-Learn · TensorFlow · Keras · Estatística · Extract, Transform, Load (ETL) · Big Data

Trainee Software Development Analyst
August 2017 - April 2018 (9 months)
Florianópolis, Santa Catarina, Brazil

Achievements:
- Mapped agricultural classes and planted forests annually from 1985 to 2017 across Brazil using satellite images and machine learning models for MapBiomas Collections 3.0 and 3.1. Achieved high accuracy in the last year of mapping (2017): Agriculture - User's accuracy: 85%, Producer's accuracy: 88%; Planted Forests - User's accuracy: 92%, Producer's accuracy: 57%.

Skills: Google Earth Engine · Python · Scikit-Learn · Estatística · Big Data

Federal University of Ceará
Software Development Intern
January 2016 - December 2016 (1 year)
Quixadá e Região, Brasil

Achievements:

- Contributed to the Development of SiNutri, a system designed to facilitate nutrition services for the academic community at UFC. This platform streamlines the delivery of nutritional support, improving accessibility and efficiency for students and staff.

Skills: Java · Scrum · Spring Boot

Education

Pontifical Catholic University of Minas Gerais
Postgraduate (Lato Sensu), Artificial Intelligence and Machine Learning · (2020 - 2021)

Pontifical Catholic University of Minas Gerais
Postgraduate (Lato Sensu), Data Science and Big Data · (2019 - 2020)

Federal University of Ceará
Bachelor degree, Information Systems · (2013 - 2016)