HIAGO DOS SANTOS

Mechatronics Engineer | Data Scientist | AWS Certified

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PROFESSIONAL EXPERIENCE

Data Scientist

📅 Jun 2021 – Present   📍 Radio Memory

Designated for the MLOps role in the AI department for automating production deployments, reducing costs and optimizing infrastructure.
Development of APIs using Python on AWS infrastructure through Docker and Kubernetes tools for container creation and orchestration, Terraform for IaC (Infrastructure as Code), and CI/CD pipelines developed through Jenkins and CodePipeline.
Versioning of machine learning models and datasets using ClearML.
Use of Flask, FastAPI, unit tests, integration tests, and end-to-end tests, along with Design Patterns, SOLID, and Clean Architecture principles for scalable and maintainable systems.
Working on all stages of machine learning model development, from data mining, training, to deployment on AWS infrastructure.
Development and fine-tuning of neural networks based on computer vision tasks such as: object detection, semantic segmentation, keypoint detection, single and multilabel classification, siamese model, large language models (LLMs), autoencoder, and generative adversarial network (GAN).
Use of unsupervised algorithms for outlier detection and exploratory data analysis (EDA) using Pandas.
Monitoring and logging through CloudWatch Logs.

Tools used: Python, Shell Script, Flask, FastAPI, Pytorch, Numpy, Keras, Sklearn, Pytest, AWS CLI, Kubernetes, Docker, Jenkins CI/CD, CodePipeline, Git, ClearML, API Gateway, Fargate, EC2, EBS, EFS, S3, Lambda, SQS, SNS, CloudWatch, Route53, VPC, IAM, Route53, Secrets Manager, EKS, ECS, Elastic Load Balancer, ECR, Code Build, Code Deploy, Cost Explorer, ACM, CodeStar, PrivateLink, Secrets Manager, Trello.

VOLUNTEER WORK

Competition Team (Autonomous Robots)

UnBall Team - Robot Soccer

📅 Feb 2018 - Jun 2022

Develops and teaching of Python scripts, reinforcement learning and neural networks.
Responsible for financial management and generating monthly reports for project contributors.
Used Agile methodology and Scrum for project management.

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Teaching Assistant

Introduction to Linear Algebra

📅 Mar 2019 – Jul 2019   📍 UnB

Calculus 3 (Multivariable Differential and Integral Calculus)

📅 Aug 2018 – Dec 2018   📍 UnB

Calculus 2 (Series and Differential Equations)

📅 Mar 2018 – Jul 2018   📍 UnB

Algorithms and Computer Programming

📅 Aug 2017 – Dec 2017   📍 UnB

LANGUAGES

English: Intermediate
Spanish: Beginner
Portuguese: Native

PAPER PUBLICATIONS

Minimal underactuated synchronization with applications to secure communication

📅 Jun 2023

Journal: Communications in Nonlinear Science and Numerical Simulation
Qualis: A1 (94% percentile)

EDUCATION

Mechatronic Engineering
University of Brasília (UnB)

📅 Jul 2016 – Dez 2023

Final Course Project: Reinforcement Learning applied to VSSS category of Robotic Soccer.
Description: Development of an autonomous agent able of scoring goals through neural networks, reinforcement learning algorithms and Pytorch framewok. **(repository link)**

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Electrotechnical Technician
Technical School of Brasília (ETB)

📅 Aug 2014 – Oct 2017   ⏱ 1836 h

AWS CERTIFICATION

AWS Cloud Practitioner
AWS Solutions Architect - Associate
AWS Developer - Associate

PERSONAL PROJECTS

Database for Social Network

Utilized Br Model for developing Entity-Relationship and Relational Model diagrams. Applied relational algebra for query applications. Table normalization and use of PostgreSQL as engine.

SQL Data Analysis

Advanced SQL techniques for obtaining Insights in a public relational database.

Serveless API AWS

This repository demonstrates a simple project showcasing how to create an API in AWS using Terraform + FastAPI + Swagger Docs + Pytest + Docker with multi-stage build + JWT + Lambda + CI/CD Pipeline with manual approve, automatic tests and rollback in failure case.

Personal Website hostesd on AWS

This repository demonstrates how my own website was made in AngularJS and hosted on AWS using resources such as: Terraform, S3, CloudFront, Route53.

Facial Recognition using neural network

This project aims to showcase the use of Pytorch to recognize people. Some topics are convered, such as: Pytorch lightning framework, siamese models, augmentation techniques, JSON, matplotlib.

Pests Classification

Project of a neural network using the Keras Framework to classify pests in tomato plantations.

Keras Projects

This repository aims to showcase some topics studied in in the subject of Machine Learning, when I used keras Framework and sklearn, such as: KNN, k-means, RNR, LSTM, SVM, Reinforcement learning.

Contact Book

A project written in C++ which emulates a contact book. It options to create, list, search, delete, and update contacts. All informations are saved into a binary file.

Image Processing

This repository contains some image processing works that were made during Image Processing subject, such as: k-means, interpolation, homomorphic filtering, reject notch, median and low pass filters, histogram analysis and morphological operations.