Lucimário Sousa | Resume

- Status: Physicist and Data Scientist, M.Sc. Physics
- Skills: Python, Data Science, Data Engineering, Machine Learning, Cloud, Mathematics, Statistics
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Summary

Degree in physics, with a strong background in advanced analytical and numerical calculations, statistics and problem modeling. Experience in data science, data engineering, machine learning, time series, cloud computing and quantitative finance. Able to work on problems that require logical reasoning, advanced mathematics, data handling and team cooperation. Some of my projects can be found on my github, i have worked on data science problems that make use of the basic tools of machine learning from the Scikit-learn library such as linear and logistic regression, classification and clustering, and also on problems that make use of deeplearning frameworks such as Pytorch and TensorFlow, in this case on problems related to computer vision and natural language processing. All of the problems have been studied within the usual ide's such as google colab and jupyter as well as in cloud platforms, using tools such as the SageMaker from the Amazon AWS. The deployment of models have been done using the Streamlit app framework. I took part as volunteer in two data science projects at Omdena, a global platform that aims to use artificial intelligence to solve problem with social impact. In the first project, in partnership with a startup from Austria in the acquaculture sector, we were challenged to solve a computer vision problem in order to estimate the biomass of fish in a tank. In the second project (ongoing) we are working in partneship with a startup from Canada in the energy sector, the challenge is to create an AI system that can accurately identify different types of elements (walls, railings, etc.) in the 2d plans of buildings, this is part of a schedule to optimze the energy consuption in the final 3d plan of the buildings.

Python Skills: Pandas, Numpy, Scipy, MatplotLib, Seaborn, StatsModels.

Data Science Skills: ETL, SQL, PowerBI, Scikit-learn, DeepLearning, Pytorch, TensorFlow, Computer Vision, Natural Language Processing (NLP), AWS, SageMaker, Regression models, Support Vector Machines (SVM), XGBoost, DeepAR, K-means, Streamlit, Alteryx.

Statistics Skills: Random variables, discrete models, binomial, Poisson and geometric distributions, continuous models, normal, gama, beta and exponential distributions, regression models, Bayesian inference, Markov chains.

Advanced Mathematics and Physics Skills: Analytical and numerical calculus, differential equations, quantitative finance models, stochastic models, Physics-Based Deeplearning, mathematical physics.

Experience

06/2022 - now **Junior Machine Learning Engineer (volunteer)** Omdena / Sysconverge

- There is a high cost and long duration to complete a city permit compliant energy model report; it requires at least three months of manual labor for a team of 4-5 people. The current process deters real estate developers from focusing on emission reduction, and the high cost of the model discourages smaller real estate developers from entering the market. This project aims to improve the efficiency of this manual effort by identifying different types of building elements (walls, railings, etc.) in the 2D image using computer vision techniques.

10/2021 - 01/2022 **Junior Machine Learning Engineer (volunteer)** Omdena / Blue Planet Ecosystems

- I helped in the construction of a ML algorithm to estimate the volume and weight of a fish from video recorded with stereovision camera, as well as a procedure to calibrate the system. A development of a visual evaluation based system was devised, that utilizes computer vision algorithms and statistical modeling in order to obtain the mass estimation required. The project resulted in a python app that derives an estimate for individual fish weight in an image frame.

Lucimário Custodio de Sousa · Physicist and Data Scientist · SP, Brazil · **lucimario.custodio@gmail.com** · +55 81 996073349

Education

2020 - now	**Phd's Degree, Physics**	Universidade Federal do ABC (UFABC)
2018 - 2020	**Master's Degree, Physics**	Universidade Federal do ABC (UFABC)
	◗ Thesis: Black Holes: Perturbation Theory and Quasinormal Modes in Binary Systems	
2014 - 2018	**Bachelor's Degree, Physics**	Universidade Federal de Pernambuco (UFPE

Courses and Certificates

- Machine Learning e Data Science com Python de A a Z by udemy.com

- Machine Learning com Amazon AWS e SageMaker by udemy.com

- Time Series Forecasting by udacity.com

- Fundamentos de ETL com Python by Dio.me

- Introdução ao Git e ao GitHub by Dio.me

- Linux: Introdução ao Sistema Operacional e Terminal by Dio.me

- Neural Networks and DeepLearning by DeepLearning.AI

- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization by DeepLearning.AI

- Structuring Machine Learning Projects by DeepLearning.AI

- Introdução ao Git e ao GitHub by Dio.me

- Introdução a Engenharia de Dados na Azure by Dio.me

- Introdução a Engenharia de Dados na AWS by Dio.me