

Marcos de Souza Oliveira

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Summary

I am a highly skilled researcher and professional with over 14 years of experience in software development and Artificial Intelligence (AI), Machine Learning (ML), and data analytics. I have led and contributed to a wide range of projects, from agile development teams to large-scale international collaborations, holding roles such as Tech Lead, AI/ML specialist, Data Scientist, and Software Engineer. I am particularly drawn to unsupervised learning and exploratory data analysis.

Interests

My main interest is to develop meaningful, cost-effective and explainable AI models through unsupervised deep learning, exploratory data analysis, and optimization, specifically deep clustering, deep graph clustering, evolutionary algorithms and dimensionality reduction methods.

Education

PhD	Federal University of Pernambuco - UFPE , Machine Learning Title: Unsupervised Feature Selection and Deep Subspace Clustering for Exploratory High-Dimensional Cluster Analysis Status: Thesis successfully defended	2020 – 2024
MSc	Federal University of Pernambuco - UFPE , Machine Learning Title: Unsupervised Feature Selection Methodology for Clustering in High Dimensionality Datasets URL: https://repositorio.ufpe.br/handle/123456789/33642	2016 – 2018
Spec	University of Pernambuco , Software Engineering Title: Proposta de Arquitetura Utilizando o Paradigma SOA para o Avatar Educação DOI: 10.25286/rep.v3i1.528	2015 – 2016
BS	Faculdade dos Guararapes , Computer Science	2011 – 2014




Teaching Experience

CESAR School , Specialization, Professor <ul style="list-style-type: none">• machine learning• dimensionality reduction• classic clustering algorithms,• unsupervised metrics• deep clustering. URL: https://www.cesar.school/especializacao/analise-de-dados-e-ia	Recife, Pernambuco, Brazil 2022 - 2023
Universidade Tiradentes - UNIT , Graduation, Professor <ul style="list-style-type: none">• algorithms and compiler components• operational system• data structures• Java programming• Problem-Based Learning methodology URL: https://www.unit.br/analise-e-desenvolvimento-de-sistemas	Recife, Pernambuco, Brazil 2020

Relevant Experience

Inatel , AI/ML Specialist	Minas Gerais, Brazil (remote) 2023 - current
<ul style="list-style-type: none">• Development of statistical and AI/ML models applied to industrial process• Prospect new AI/ML projects by writing pre-proposal/pre-sale and work plan documents• Conduct studies and analysis of AI/ML frameworks, data, platforms and tools• Publish results in top conference/journals (Scopus indexing)	
CESAR , Data Scientist	Recife, Pernambuco, Brazil 2019 - 2023
<ul style="list-style-type: none">• Development of explainable classifier (tree-based) for predicting employee turnover• Development of anomaly detection models to identify outliers/crashes in applications that observe data consumption over time (time series)• Design and implementation of the queue system simulator to perform data ingestion for AI/ML models• Development of route suggestion system based on clustering for Samsung technicians (optimization of traveled distance to meet all demanded attendances)• Development of optimization models to perform the best organization of queues in Samsung's assistance by evolutionary algorithms (genetic / PSO)	
CESAR , Software Engineer	Recife, Pernambuco, Brazil 2018
<ul style="list-style-type: none">• Implementation of NLP classifier to detect furious feedback in the consumers text messages (Samsung concierge)	
Stefanini , Software Engineer	Recife, Pernambuco, Brazil 2017
<ul style="list-style-type: none">• Developing mobile applications for pattern recognition engines (image document segmentation).	
Informatics Center, UFPE , Machine Learning Scholarship	Recife, Pernambuco, Brazil 2016
<ul style="list-style-type: none">• Dedicated to research work for the master's degree in Machine Learning• Unsupervised Feature Selection Framework	

Publications

Deep Contrastive Variational Subspace Clustering	2025
Oliveira, M. D. S., Queiroz, S. R. M., Zanchettin, Cleber., Carvalho, F. A. T. Neurocomputing 10.1016/j.neucom.2025.130901 	
FastAiAlloc: A real-time multi-resources allocation framework proposal based on predictive model and multiple optimization strategies	2023
Oliveira, M. D. S., et al. Future Generation Computer Systems 10.1016/j.future.2023.08.014 	
Unsupervised feature selection method based on iterative similarity graph factorization and clustering by modularity	2022
Oliveira, M. D. S., Queiroz, S. R. M., Carvalho, F. A. T. Expert Systems with Applications 10.1016/j.eswa.2022.118092 	

Unsupervised feature selection methodology for clustering in high dimensionality datasets

2020

Oliveira, M. D. S., Queiroz, S. R. M.

Revista de Informática Teórica e Aplicada

10.22456/2175-2745.96081 [↗](#)

Technologies

Languages: Python, Matlab, Java, SQL, JavaScript

Technologies: Scikit-learn, Pytorch, Tensorflow, NetworkX