Diógenes Wallis de França Silva

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Work Experience

Sidia — Manaus, AM, Brazil
Data Scientist — *April 2023 - Present*

- I'm actively engaged in crafting solutions for Samsung's Industry 4.0 factory using Computer Vision and AI technologies. My role entails collaborating with the client to define the product's structure, developing the solution, and overseeing its deployment within the factory. Specifically, I am overseeing a project centered around visual inspection, which is integrated into the production line and aims to enhance quality control.

FCx Labs — Recife, PE, Brazil
Data Scientist — *October 2022 - April 2023*

- I developed workflows for ETL process. Architecture and implementation for personal-based recommendation systems. Improvements in the search mechanism. APIs for Recommendation systems. EDA for user interactions. Indexing and search of texts and vectors using Elasticsearch. Evaluation Methods for recommendation systems.

Voxar Labs — Recife, PE, Brazil
Machine Learning Developer — *May 2021 - October 2022*

- SABIÁ (Centro de Excelência em Saúde & Bem-Estar e Inteligência Artificial) project in partnership with Samsung Inc. We build AI solutions for health using context adaptation of data obtained from wearables devices.
- HP ScalingML project in partnership with HP Inc. We analyze and propose methodologies and tools related to the CI/CD process with a focus on Machine Learning. Furthermore, applying the best methods in the Machine Learning lifecycle. This approach is also known as MLOps.
- HP Collab project in partnership with HP Inc. I worked with 3D face reconstruction, facial keypoints detection, and face reenactment.

SENFIO - Technological Solutions — Recife, PE, Brazil
Machine Learning Engineer — *Jun 2020 - April 2021*

- AI Research, Development, and Deployment, related to a face recognition system. Face encoding uses a model based on facenet (face recognition system developed by Google). The system runs in the google cloud platform's VM through a docker container. Images taken from an ESP32 are sent to this application on the cloud.

SENFIO - Technological Solutions — Recife, PE, Brazil
R&D Artificial Intelligence Researcher — *Mar 2020 - May 2020*

- Development of a face recognition system that runs in a simple raspberry pi3. This system also can send images to a VM in the google cloud platform.

SENFIO - Technological Solutions — Recife, PE, Brazil
Computer Vision Intern — *Jul 2019 - Feb 2020*

- Selected to be part of Team Developer, building an automatic system for insect counting using Computer Vision and Machine Learning.

Education

Centro de Informática - Federal University of Pernambuco (UFPE) — Recife, PE, Brazil
MSc Computational Intelligence student, GPA 10/10 — *May 2021 - July 2023*

Relevant coursework: Machine Learning, Deep Learning, Reinforcement Learning, Computer Vision, Digital Image Processing, Computer Graphics.

Federal University of Pernambuco (UFPE) — Recife, PE, Brazil
BS Electronic Engineering, 2nd out of 40 students, GPA 9.17/10 — *Jan 2015 - Dec 2019*

Relevant coursework: Image Processing, Adaptive Filtering, Digital Signal Processing, Digital Systems, Digital Electronics.

Research

Unsupervised Multi-View Multi-Person 3D Pose Estimation 2021-2023

Supervised by Prof. Dr. Verônica Teichrieb, from Centro de Informática - Federal University of Pernambuco

- Development of an unsupervised method to estimate 3D poses on a multi-view scenario with multiple persons. End-to-end deep learning approach. We create the labels in the training process rather than using 3D ground truth.

Estimation of data in Sensor Networks using Graph Signal Processing 2018-2019

Supervised by Prof. Dr. Juliano B. Lima, from Federal University of Pernambuco

- At the research was performed data estimation via Graph Signal Processing techniques, aiming to keep Graph Signals smooth, in a network of sensors. It is possible, for example, to estimate a temperature value at a point missing from the network sensor, based on the measurements of the nearby sensors.

- Research funded by FACEPE government program.

Publications

1. Pedro de Souza, Diógenes Wallis de França Silva, Isabella de Andrade, Júlia Dias, João Paulo Lima, Veronica Teichrieb, Jonysberg P. Quintino, Fabio Q. B. da Silva, André L. M. Santos: A Study on the Influence of Sensors in Frequency and Time Domains on Context Recognition. Sensors 23(12): 5756 (2023)

2. Diógenes Wallis de França Silva, João Paulo Silva do Monte Lima, Diego Gabriel Francis Thomas, Hideaki Uchiyama, Veronica Teichrieb: UMVpose++: Unsupervised Multi-View Multi-Person 3D Pose Estimation Using Ground Point Matching. VISIGRAPP (4: VISAPP) 2023: 607-614

3. Diógenes Wallis de França Silva, João Paulo Silva do Monte Lima, David Macêdo, Cleber Zanchettin, Diego Gabriel Francis Thomas, Hideaki Uchiyama, Veronica Teichrieb: Unsupervised Multi-view Multi-person 3D Pose Estimation Using Reprojection Error. ICANN (3) 2022: 482-494

Conferences

1. **2022 31st International Conference on Artificial Neural Networks. Unsupervised Multi-View Multi-Person 3D Pose Estimation Using Reprojection Error. 2022. (Congress)**

   Bristol, United Kingdom

2. **2018 XXXVI BRAZILIAN SYMPOSIUM OF TELECOMMUNICATIONS AND SIGNAL PROCESSING. Real-time Voice Disguise with Multiple Discrete Time SSB Modulations. 2018. (Congress).**

   Campina Grande, Brazil

Awards and Recognitions

Moises.ai - 3rd place on Chord Detection Challenge (2021)	Brazil
Awarded by state government funding FACEPE (2018-2019) to do research	Brazil
1st Place at Honorable Mention at 2014 Brazilian Public Schools Mathematical Olympiad	Brazil
Gold Medal at 2013 Brazilian Public Schools Physics Olympiad	Brazil

Other Qualifications

Skills: **Deep Learning**, **Machine Learning**, **Computer Vision**.
Workflows: **Dagster**, **Airflow**.
Experiment tracking: **MLflow**, **Neptune**.
Frameworks: **PyTorch**, **Tensorflow**, **Scikit-learn**, **OpenCV**.
Programming languages: **Python**, **SQL**, **C**, **C++**, **R**.
Virtualization: **Docker**.
Cloud Architecture: **AWS**, **Google Cloud Platform**.
Devices: **Lattepanda**, **Raspberry pi3**, **Raspberry pi0**.
Indexing and search: **Elasticsearch**.
CI/CD: **gitlab**, **github actions**.
Languages: **Native** Portuguese, **Advanced** English.