Rodrigo Almeida

Geo-Information, AI and Cloud Engineer

Berlin, Germany | rodrigo.almeida94@outlook.pt | | | |

~ $ cat summary.txt

Focused on using AI to understand, predict, and adapt to a changing climate. Experienced in building scalable pipelines for weather data, training geospatial Deep Learning models, and leading engineering teams to solve complex, high-impact problems.

~/publications $ ls *.pdf

- Predictive Skill of AI Weather Models for Extreme Events using Uncertainty Quantification (Pre-print)
- Inferring Ethylene Distribution in Apple Orchard: A Pilot Study for Optimal Sampling (Journal)
- Potential Application of Flying Ethylene-Sensitive Sensors for Ripeness Detection (Journal)
- Super-resolution of multispectral satellite images using convolutional neural networks (Pre-print)

~/open-source $ git log -oneline

- **brightbandtech/ExtremeWeatherBench**: Add ROCSS metric
- **NVIDIA/earth2studio**: Add AIFS ENS
- **NVIDIA/earth2studio**: Add GraphCast
- **SkyTruth/cerulean**: Production deploy
- **NASA/cumulus**: Switch to AWS Cognito
- **cogeo/rio-tiler**: Use httpx
- **up42/up42-py**: Add CI/CD
- **calebrob6/land-cover**: Evaluation script to Python

~/experience $ ls -t

Fraunhofer HHI — Berlin

ML Researcher, Applied AI — Feb 2025 – Present

- Uncertainty quantification of global AI weather models, evaluating on extreme events.
- Climate and Weather AI applications.

Jua.ai — Remote

Eng. Manager, Data Team — Mar 2023 – Jun 2024

- Led a team of 2 engineers and worked closely with product.
- Ingested 30 different sources of historical weather observation data into a common data warehouse, using Zarr and Parquet (> 500 TB).
- Created live ETL pipelines for weather data using Prefect, deploying it using Pulumi in GCP.

Senior Data Engineer — Nov 2022 – Mar 2023

- Using Zarr and Dask, created a pipeline to downscale weather forecasts to 1x1 km at the global level, 4x a day, using a deep learning model.
- Developed live ingestion pipelines for multiple weather data sources (reanalysis data and observation data), using AWS Step Functions.

Development Seed — Remote

Cloud Software Engineer — Aug 2021 – Oct 2022

- Developed a multi cloud (AWS and GCP) and cost efficient cloud infrastructure for running deep learning based oil slick detection with Sentinel-1 images.
- Developed an ingestion pipeline & search API that is able to handle millions of images and return similarity, at scale.

UP42 (Airbus) — Berlin

Senior Data Science Engineer — Jan 2021 – Jul 2021

- Used FastAPI to develop asynchronous micro services to estimate resource consumption of geospatial workflows.
- Developed full CI/CD pipeline for dockerized geospatial processing tools, including live and end to end tests.

Data Science Engineer — Sep 2019 – Dec 2021

- Developed processing chains for geospatial data in Python with Docker.
- Built requirements for compatibility service of different geospatial processing chains.
- Conceptualised and trained deep learning model for land cover classification with satellite images using TensorFlow.

Planet — Berlin

Pre-Sales Engineer — Jul 2018 – Aug 2019

- Technical consultancy for prospective customers.
- Developed internal tools for reporting and data visualisation.

Agroop — Lisbon

Account Manager and Agronomist — Oct 2015 – Aug 2016

- Agronomic technical assistance to customers.
- Supported the development team with user requirement reports.

~/education $ cat degrees

MSc Geo-Information Science (Cum laude), Wageningen Univ. — 2016 – 2019

BSc Agriculture Engineering, ISA Lisbon Univ. — 2012 – 2015

~ $ grep -r "Skills" .

- **Lang/Frameworks:** Python, FastAPI, PyTorch, Dask, Pulumi, Prefect
- **Cloud/DevOps:** AWS, GCP, Docker, CI/CD, Terraform, Slurm
- **AI/Data:** Xarray, Zarr, Parquet, GDAL, PostGIS, ML, DL, CV

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