

Daniele Mos

MACHINE LEARNING ENGINEER

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About me

I am a Computer Science graduate working in the AI field with an interest in Data Science, Computer Vision and Big Data Analytics, currently pursuing a Master's degree. I have a passion for science in general and want to tackle challenges using Machine Learning.

Work Experience

Helmholtz-Zentrum Dresden-Rossendorf (HZDR)

Machine Learning Researcher - MLOps infra

Saxony, Germany

Apr 2024 - Current

- Worked on:** Machine Learning systems for Particle Acceleration simulation data
- Responsibilities:**
 - Worked on **HPC clusters** to generate data using PConGPU for laser and plasma particle acceleration simulations
 - Write data generation **pipelines in Snakemake** framework
 - Model training and evaluation modular scripts
 - Hyper-parameter optimization and training pipeline for interchangeable deep learning model architectures
 - Cloud based model training logging using Weights and Biases (Wandb)
- Skills and tools:** Python, HPC, Slurm, Snakemake, Shell, Pytoch, Wandb, Panoptes

Tvarita

Machine Learning Engineer

Cluj-Napoca, Romania

Sep 2021 - Sep 2023

- Product worked on:** Digital eye-ware measurement software and Glasses and Lenses showcase app
- Responsibilities:**
 - Data handling from partner data provider
 - Data tagging** for facial measurements and **data formatting**
 - Use pre-trained models for head detection and feature extraction (OpenVino)
 - Train and evaluate models for **lenses segmentation**
 - Integrate trained models** into the multi-platform QT-based client apps for **Zeiss, Optiswiss, Seiko** and many more
 - Optimize** the system in order to run on low power embedded hardware
 - Build an **optics showcase application** for Lenses and Glasses in **C++** and Qt framework for **Seiko**
 - Design back-end functionalities and architecture
 - Integrate analytics based on **Google Analytics Services** suite
- Skills and tools:** Python, C++, OpenCV, OpenVino, Qt, Pytoch, Tensorflow, CUDA, Tensorboard, Numpy, Matplotlib

Machinations.io

Machine Learning Intern

Cluj-Napoca, Romania

Jul 2021 - Aug 2021

- Product worked on:** Prediction and Designing system for Game Economies and Systems
- Responsibilities:**
 - Developed a **data pipeline** in order to fetch relevant data from user simulations
 - Collected data from a Mysql server, using SQL queries and data cleaning pre-process
 - Matplotlib and Seaborn to make **data statistics** and showcase
 - Pytorch-based **classification model** training
 - Implemented Scikit learn traditional **ML models**
 - Wrote documentation** for the project
- Skills and tools:** Python, SQL, Matplotlib, Seaborn, Numpy, Scikit-Learn, Pytorch

Extracurricular

Elbflorace Formula Student Team

Autonomous System Engineer

Dresden, Saxony, Germany

Oct 2023 - Current

- Worked on:** Race Car Perception System
- Responsibilities:**
 - Look through state-of-the-art algorithms used in **vehicle perception**
 - Test different algorithm implementations for **ground classification**
 - Collect and process **LiDAR** point cloud data
 - Write module documentation
 - Performance tracking for implemented approaches
 - Train YOLO v10 model for **cone object detection**
- Skills and tools:** Python, C++, ROS2, LiDAR sensors, Computer Vision, YOLO

Education

Technical University Dresden

[Dresden, Saxony, Germany](#)

Exchange student for Master's degree studies

Oct 2023 - Current

- **Courses:** Computer Vision, Computer and Robot assisted surgery, Data Visualization, GPU programming, Statistics, Scalable Data Engineering, Bio-informatics

Babeş-Bolyai University

[Cluj-Napoca, Romania](#)

Master's of Science in High Performance Computing and Big Data Analytics

Oct 2022 - Current

- **Courses:** Data Science, Parallel Programming, Cluster Computing, Ethics, Multi-agent Systems, Artificial Intelligence, Machine Learning, Research

Babeş-Bolyai University

[Cluj-Napoca, Romania](#)

Bachelor of Computer Science

Oct 2019 - Jul 2022

Projects

RAG (Retrieval-Augmented Generation) based feature extraction

Freelance, MLOps, CI/CD, DevOps

- Parsing top websites for nutritional values using Python along with Selenium and BeautifulSoup
- Langchain with Milvus vector db for handling for scraped corpus of data and LLM requests for nutritional values extraction from embeddings (based on scraped data)
- **Skills and Tools:** LLM, GPT api, Langchain, Python, Selenium, BeautifulSoup, Vector database, Milvus

Custom model deployment using Azure

MLOps, CI/CD, DevOps

[Project Link](#)

- Multi-model endpoint invocation
- Custom roll-out for cloud model inference
- Automation for CI/CD
- Seamless integration with 3rd party repositories through Git
- **Skills and Tools:** Azure Devops, Azure ML, Container Registry

Youtube Thumbnail and Title Ranking

Freelance, Python, MLOps

- Data scraping and building synthetic image data sets
- Design an inference pipeline for both title and thumbnail
- Train computer vision and regression HuggingFace models
- Use Amazon services such as Rekognition for feature extraction and Sagemaker for deployment
- **Skills and Tools:** Jupyter Notebook, Hugging Face, Amazon Sagemaker, Pandas, OpenCV, Selenium

Singularity Network

Blockchain, Python, Cryptography

[Project Link](#)

- Implement a decentralized system from scratch using **RSA encryption**
- Design a minimal **PoS (Proof-of-Stake)** consensus algorithm
- Write an **API** for user interaction with the network
- Write an extensive documentation
- **Skills and Tools:** Python, Cryptography, Blockchain, Flask, Docker

Skills

Machine Learning	Deep Learning, HPC, Pytorch, Tensorflow, Opencv, Huggingface Transformers, Pandas, Numpy, Matplotlib, Seaborn, Wandb, CUDA, Snakemake
Software Engineering	Python, C++, HTML/CSS, SQL, Qt, Streamlit, Next.js, API Integrations
Miscellaneous	Linux, Latex, Firebase, Git, Docker
Soft Skills	Time Management, Teamwork, Team management, Problem-solving, Documentation, Engaging Presentations

Languages

English	Professional proficiency
Romanian	Native proficiency
Italian	Elementary proficiency