

# Daniele Mos

SENIOR MACHINE LEARNING ENGINEER

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## About me

ML Engineer with a Computer Science background and a Master's in HPC & AI. Five years taking ML systems from research to production across scientific computing, remote sensing, foundation models, and agentic systems, currently CTO shipping geospatial ML models to live clients. Drawn to mission-driven work where ML accelerates scientific discovery.

## Work Experience

### Spatialise

Amsterdam Area, Remote

Feb 2025 - Present

#### Chief Technology Officer

Mar 2026 - Present

- Launched a new **soil-carbon model in production**: scalable inference infrastructure serving live clients.
- Designed and shipped a **Python client** for the platform API, giving customers programmatic access.
- Steer the team technically: architecture reviews, ML roadmap, and engineering standards, and author **product specs** for platform integrations.
- Lead applied research on a **precious-metals mining survey model**, opening a new geospatial vertical.

#### Deep Learning Researcher

Jul 2025 - Mar 2026

- Designed and trained a **graph neural network** in **PyTorch** for soil organic carbon prediction from remote-sensing data, achieving **SOTA** on internal benchmarks.
- Integrated Earth-observation **foundation models** to bootstrap representations; ran empirical studies of model behaviour, **uncertainty**, and representation quality.
- Built a **CUDA-accelerated** inference pipeline as a scalable production API; profiled GPU workloads with **NVIDIA Nsight** to resolve I/O bottlenecks.
- Owned the ML platform end-to-end, from training infrastructure to **GCP** deployment.

#### Machine Learning Engineer

Feb 2025 - Jun 2025

- Built and deployed model-inference **APIs from scratch** with FastAPI and Pydantic; containerized with **Docker on GCP**.
- Processed satellite imagery into geospatial features for soil-carbon modelling.
- Integrated inference pipelines with **Retool** to ship internal data-visualization tools.

### Facilio

Germany, Remote

#### ML Engineer (Contract), Agentic AI / RAG

Dec 2025 - Mar 2026

- Designed from scratch a **production agentic system** for tenant-complaint triage, materially reducing employee processing time.
- Built a **RAG pipeline** with **LangChain**, **Pinecone**, and **Gemini**, deployed in **Docker**; established evaluation discipline with **LangSmith** traces and offline evals on sensitive tenant data.

### Nexus Studios

London, UK

#### ML Engineer (Contract)

Jun 2025 - Nov 2025

- Built a **computer-vision pipeline** for **3D mesh reconstruction** of head geometries.

### Helmholtz-Zentrum Dresden-Rossendorf (HZDR)

Dresden, Germany

#### ML Researcher: Scientific ML on HPC (Internship)

Apr 2024 - Oct 2024

- Researched deep-learning **model uncertainty** on simulation data (Master's thesis) at a German national research lab.
- Built reproducible **Snakemake** training pipelines orchestrated across distributed **HPC / Slurm** clusters.
- Designed modular **PyTorch** training and evaluation scripts with interchangeable architectures and hyper-parameter sweeps; tracked with **Weights & Biases**.

### Tvarita

Cluj-Napoca, Romania

#### Machine Learning Engineer

Sep 2021 - Sep 2023

- Trained and deployed **PyTorch** and **TensorFlow** segmentation and facial-measurement models powering eyewear software shipped to **Zeiss**, **Optiswiss**, and **Seiko**.
- Optimized inference for embedded hardware via **OpenVINO** and **CUDA**; integrated into multi-platform C++ client apps.
- Owned the data pipeline end-to-end: ingestion, tagging, and formatting for model training.

### Machinations.io

Cluj-Napoca, Romania

#### Machine Learning Intern

Jul 2021 - Aug 2021

- Built a MySQL-backed data pipeline and trained PyTorch and scikit-learn classifiers for game-economy outcome prediction.

# Publications

D. Mos, F. Drummond, A. Bossenbroek, S. el Khinifri. "Multi-Modal Spatio-Temporal Graph Neural Network with Mixture of Experts for Soil Organic Carbon Prediction." arXiv:2606.16580 (cs.LG, cs.CV), 2026.

# Education

|                                                                                                                                                                                                                   |                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Technical University Dresden</b>                                                                                                                                                                               | <i>Dresden, Saxony, Germany</i> |
| Exchange student for Master's degree studies                                                                                                                                                                      | <i>Oct 2023 - Oct 2024</i>      |
| <ul style="list-style-type: none"><li><b>Courses:</b> Computer Vision, Computer and Robot assisted surgery, Data Visualization, GPU programming, Statistics, Scalable Data Engineering, Bio-informatics</li></ul> |                                 |
| <b>Babeş-Bolyai University</b>                                                                                                                                                                                    | <i>Cluj-Napoca, Romania</i>     |
| Master's of Science in High Performance Computing and Big Data Analytics                                                                                                                                          | <i>Oct 2022 - Oct 2024</i>      |
| <ul style="list-style-type: none"><li><b>Courses:</b> Data Science, Parallel Programming, Cluster Computing, Ethics, Multi-agent Systems, Artificial Intelligence, Machine Learning, Research</li></ul>           |                                 |
| <b>Babeş-Bolyai University</b>                                                                                                                                                                                    | <i>Cluj-Napoca, Romania</i>     |
| Bachelor of Computer Science                                                                                                                                                                                      | <i>Oct 2019 - Jul 2022</i>      |

# Skills

|                                   |                                                                                                                                                 |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Machine Learning</b>           | Deep Learning, Foundation Models, GNNs, Transformers, Uncertainty Estimation, Computer Vision, Geospatial ML, MLOps, HPC / Distributed Training |
| <b>LLMs &amp; Agentic Systems</b> | RAG, LangChain, LangSmith, Pinecone, Vector Databases, Gemini, OpenAI API, Hugging Face                                                         |
| <b>ML Frameworks &amp; Tools</b>  | PyTorch, TensorFlow, scikit-learn, OpenCV, CUDA, NVIDIA Nsight, Snakemake, W&B, NumPy, Pandas                                                   |
| <b>Languages</b>                  | Python, C++, SQL                                                                                                                                |
| <b>Cloud &amp; Infrastructure</b> | GCP, Docker, FastAPI, Pydantic, API / SDK Design, Slurm / HPC, Linux, Git                                                                       |

# Extracurricular

|                                                                                                                                                                                                                                                                                                                                                                   |                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Elbflorace Formula Student Team</b>                                                                                                                                                                                                                                                                                                                            | <i>Dresden, Germany</i>    |
| Autonomous Systems Engineer                                                                                                                                                                                                                                                                                                                                       | <i>Oct 2023 - Oct 2024</i> |
| <ul style="list-style-type: none"><li>Implemented state-of-the-art <b>ground-segmentation</b> algorithms on <b>LiDAR</b> point-cloud data.</li><li>Implemented <b>multi-region RANSAC</b> ground segmentation for enhanced accuracy.</li><li>Trained <b>YOLO</b>-based models for cone detection.</li><li>Wrote documentation for implemented features.</li></ul> |                            |

# Languages

|                 |                          |
|-----------------|--------------------------|
| <b>English</b>  | Professional proficiency |
| <b>Romanian</b> | Native proficiency       |
| <b>Italian</b>  | Elementary proficiency   |