



# André Ferreira

Machine Learning Engineer | PhD Candidate

## Description

AI Researcher & Engineer specialized in **Generative Models**, **Machine Learning** and **Computer Vision**. **4+ years** of experience in **MLOps** and data processing. Specialized in interdisciplinary collaboration, translating complex clinical requirements into technical specifications. Multiple award-winner in healthcare data challenges, leveraging a **strong capacity** to work within **multimodal teams** and **critical thinking**. Experienced in **collaborating** across **multicultural**, **transversal teams** and delivering **mentorship** to support team development.

## Details

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- 🌐 [LinkedIn page](#)
- 🐙 [GitHub page](#)
- 📁 [Portfolio](#)

## Education

### PhD Candidate in Biomedical Engineering

- University of Minho, Portugal
- September 2022 – Current

### Integrated Master's in Biomedical Engineering - Medical Informatics

- University of Minho, Portugal
- September 2016 – January 2022

## Languages

Portuguese (Native)	<div></div>
English (C1)	<div></div>
German (A2)	<div></div>

## Digital Skills

Core:	Familiar:
Python	R
PyTorch / MONAI	C
TensorFlow	Java
Hugging Face	NoSQL
Scikit-learn	LaTeX
Numpy	
Pandas	
Matplotlib	
SQL	
Git / GitHub / GitLab	
Docker	

## Technical Mentorship

### MICCAI Tutor Rise

- MICCAI
- September 2025 – Current

### Master's students' tutor

- University of Minho, Portugal
- September 2021 – Current

### Invited Lecturer

- University of Minho, Portugal
- 2023 – Current

## Work Experience

### Generative AI Researcher

University of Minho, Portugal | September 2022 – Current

- Developed an **optimized diffusion framework**, surpassing SOTA with low computational cost, achieving 1st place in BraTS 2025 (Tasks 8 & 9).
- Architected a **generative data-augmentation** model mitigating data scarcity, achieving 1st place in BraTS 2023/2024.
- Led technical strategy and team execution for **real-time video analysis**, producing award-winning surgical skill-assessment solutions.
- Led R&D for MRI tumor segmentation, reaching **State of the Art** Dice performance and securing first place in HNTS-MRG 2024.

### Computer Vision Engineer

RWTH, Uniklinik, Aachen Germany | September 2023 – March 2024

- Built **privacy-compliant generative AI** pipelines producing synthetic MRI data, enabling downstream segmentation tasks with DSC>0.83
- Co-engineered a DL segmentation framework quantifying skeletal metric, identifying muscle quality as a key predictor of cancer survival.

### Machine Learning Engineer

IKIM, University Hospital Essen, Germany | March 2022 – August 2022

- Contributed to the official **MONAI open-source framework** by implementing a PyTorch-based Residual U-Net autoencoder for high-fidelity 3D skull defect restoration.
- Engineered a **multimodal predictive pipeline** that fuses clinical metadata with radiomic features, achieving 0.91 AUC in patient survival forecasting.

### Deep Learning Intern

NeuroSpin, University Paris-Saclay, France | May 2021 – August 2021

- Engineered a **3D Alpha-GAN** architecture for synthetic data generation, **outperforming traditional augmentation methods** to boost global segmentation accuracy by 1.7% and CSF by 7.6%.