

Summary

Research Scientist with publications at top-tier AI conferences (ECCV oral). My expertise lies in developing, training, and optimizing **deep learning models**, with a focus on interpretability (XAI) and training efficiency.

Experience

Research Scientist (PhD)

Inria
Montpellier, France

Apr 2023–Present

Led research on **faithful-by-design**, interpretable transformer models for fine-grained classification, resulting in a first-author ECCV 2024 oral (top 2.3%) and an ICCVW 2023 paper.

Visiting Researcher

Università di Trento
Trento, Italy

Feb 2025-May 2025

Analyzed **zero-shot generalization** in novel interpretable **deep learning models**, with findings being prepared for submission to a top-tier conference.

Machine Learning R&D Engineer

Lely
Maassluis, Netherlands

Sep 2020–Mar 2023

- Developed and deployed production-level algorithms for **behavioral analysis and health monitoring** in livestock, using camera data to enable non-invasive monitoring; this work led to one granted European patent and another pending.
- Engineered 2 large-scale deep learning systems from concept to deployment on edge devices, managing the **full MLOps lifecycle** including data pipelines, model training, and inference optimization.
- Led the core algorithmic development for a [real-time system](#) to monitor interactions between livestock and autonomous robots, enabling automated health analysis and collision avoidance.
- Implemented a semi-automated data annotation pipeline using active learning techniques, which reduced labeling errors and **boosted mAP by 20%**.
- Mentored 4 master's students through their research internships and thesis projects, leading to successful project completion and knowledge transfer.

Computer Vision R&D Intern

Lely
Maassluis, Netherlands

Jan 2020–Aug 2020

Designed and implemented a novel model for instance-level part segmentation in cows, **doubling the mAP** over the existing baseline and validating its performance 24/7 in live farm environments.

R&D Intern

Corvus Drones
Wageningen, Netherlands

Sep 2019–Dec 2019

Optimized a core computational algorithm for parallel processing by re-architecting it for GPUs using **CUDA**, reducing execution time by 50% (2x speedup).

Education

PhD. in Computer Science, Inria / University of Montpellier, France.

Apr 2023–Present (Expected Apr 2026)

- Research Topic:* Explainable image classification through supervised and unsupervised part detection
- Supervisors:* Dr. Diego Marcos, Dr. Cassio Fraga Dantas, Dr. Dino Ienco, Dr. Massimiliano Mancini (Trento)

M.Sc. in Embedded Systems, University of Twente, Netherlands.

Sep 2018–Aug 2020

- *Master Thesis:* Instance Level Cow Body Part Parsing
- *Supervisors:* Dr. Yan Li, Dr. Nicola Strisciuglio, Dr. Luuk Spreeuwers

B.Tech. in Electrical and Electronics Engineering, University of Kerala, India.

May 2013–Apr 2017

- *Honors:* First Class with Distinction

Skills

- **Machine Learning & AI:** Deep Learning (CNNs, Transformers), Computer Vision, NLP (LLMs), Model Interpretability (XAI), Multimodal AI
- **Tools & Frameworks:** PyTorch, TensorFlow, Keras, OpenCV, NumPy, Pandas, Hugging Face, Git, Slurm, Docker, Linux
- **Programming Languages:** Python, MATLAB, C++, C, LaTeX
- **Data Science:** Data Analysis, Data Visualization, Model Evaluation, MLOps, Large-Scale AI Deployment
- **Languages:** English, Dutch (A2), Malayalam, French (A2)

Professional Services

- **Reviewer (Conferences):** ICCV 2025, CVPRW 2025
- **Reviewer (Journals):** CVIU 2025

Publications

- Aniraj, A., Dantas, C. F., Ienco, D., & Marcos, D. (2024). PDiscoFormer: Relaxing Part Discovery Constraints with Vision Transformers. *Proceedings of the European Conference on Computer Vision (ECCV), 2024, 15143, 256–272. (Oral)*
- Aniraj, A., Dantas, C. F., Ienco, D., & Marcos, D. (2023). Masking Strategies for Background Bias Removal in Computer Vision Models. *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV) Workshops, 2023, 4397–4405.*

Patents

- **System for monitoring a calving mammal**, European Patent: EP4291133B1. Patent Active. [\[Link\]](#)
- **Animal husbandry system**, European Patent: EP4510823A1. Patent Pending. [\[Link\]](#)

Summer Schools

- *International Computer Vision Summer School (ICVSS)*, Sicily, Italy, July 2025.
- *Eastern European Machine Learning Summer School (EEML)*, Sarajevo, Bosnia and Herzegovina, July 2025.

Certifications

- **Deep Learning Specialization**, Online Course - Coursera (deeplearning.ai), January 2020. [\[Link\]](#)
- **Machine Learning**, Online Course - Coursera (Stanford University), August 2019 [\[Link\]](#)