

Experience

PhD. Researcher	Inria Montpellier, France	Apr 2023–Present
<ul style="list-style-type: none">Researching interpretable-by-design computer vision methods to solve fine-grained species classification tasks with 2 accepted first author papers at top AI conferences.Oral Presentation at a top computer vision conference, namely ECCV 2024 (top 2.3% of all submissions to the conference).		
Computer Vision R&D Engineer	Lely Maassluis, Netherlands	Sep 2020–Mar 2023
<ul style="list-style-type: none">Developed computer vision algorithms for monitoring cows and robots, leading to one granted European patent (EP4291133B1) and another pending.Built 2 large-scale deep learning projects, managing the entire life cycle from concept to model deployment.Supervised 4 master's students through research internships and thesis projects.Devised a novel multi-camera, multi-object tracking algorithm deployed 24/7 in multiple dairy farms, enabling automated cow health monitoring and improved robot collision avoidance. LinkImplemented a semi-automated data annotation pipeline, reducing labeling noise and boosting model performance by 20%.		
Computer Vision R&D Intern	Lely Maassluis, Netherlands	Jan 2020–Aug 2020
<ul style="list-style-type: none">Proposed an algorithm for instance-level analysis of cows in images, improving accuracy by 2x.Created a new dataset and deep learning model achieving state-of-the-art results tested 24/7 on various farms.		
Computer Vision R&D Intern	Corvus Drones Wageningen, Netherlands	Sep 2019–Dec 2019
<ul style="list-style-type: none">Enhanced the ArUco fiducial marker detection algorithm by re-engineering code for GPU compatibility, improving speed by 2x.		

Education

PhD. in Computer Science, University of Montpellier, France.	Apr 2023–Present (Expected Apr 2026)
<ul style="list-style-type: none">Research Topic: Explainable image classification through supervised and unsupervised part detection	
M.Sc. in Embedded Systems, University of Twente, Netherlands.	Sep 2018–Aug 2020
<ul style="list-style-type: none">Master Thesis: Instance Level Cow Body Part Parsing (Grade: 8/10)	
B.Tech. in Electrical and Electronics Engineering, University of Kerala, India.	May 2013–Apr 2017
<ul style="list-style-type: none">Honors: First Class with Distinction (Grade: 8.34/10)	

Skills

- Programming Languages:** Python, MATLAB, C++, C, LaTeX
- Machine Learning & AI:** Deep Learning, Computer Vision, Image Processing, Neural Networks
- Data Science:** Data Analysis, Data Visualization, Statistical Modeling

- **Frameworks & Libraries:** PyTorch, TensorFlow, Keras, OpenCV, NumPy, Pandas, SciPy
- **Technologies:** Git
- **Languages:** English, Dutch (A2), Malayalam, French (A2)

Publications

- Aniraj, Ananthu, et al. "PDiscoFormer: Relaxing Part Discovery Constraints with Vision Transformers." Proceedings of the European Conference on Computer Vision (ECCV). 2024.
- Aniraj, Ananthu, et al. "Masking strategies for background bias removal in computer vision models." Proceedings of the IEEE/CVF International Conference on Computer Vision. 2023.

Patents

- **System for monitoring a calving mammal**, European Patent Application: EP4291133B1. Patent Active. [\[Link\]](#)
- **Animal husbandry system**, International Patent Application PCT/IB2023/053903. Patent Pending. [\[Link\]](#)

Certifications

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

Projects

Multi-camera, multi-object tracking in dairy farms Sep 2020–Aug 2022

- **Role:** Led the development of object detection, global mapping, and tracking algorithms, and mentored 4 interns working on various components.
- **Achievements:** Prepared a dataset of 14000+ images, enhancing object detection accuracy to 98% mAP. Ran the tracking system live 24/7 in multiple farms in the Netherlands. [\[Link\]](#)

Semantic Segmentation for self-driving vehicles Jan 2021–Sep 2021

- **Role:** Led the development of deep learning models for semantic segmentation, specifically designed for custom farm environments to minimize manual control of self-driving farm vehicles.
- **Achievements:** Improved model performance by 20% through the development of algorithms to reduce labeling noise, ensuring reliable deployment on self-driving robots.

Instance Level Cow Body Part Parsing Jan 2020–Aug 2020

- **Role:** Led the development of a novel deep learning method for this task and collaborated with a team working on calving detection in dairy farms resulting in a pending patent.
- **Achievements:** Achieved state-of-the-art results, created a dataset with over 2000 manually annotated images, and deployed the model for continuous operation on dairy farms.