

Ananthu Aniraj

Experience

PhD. Researcher **Inria** **Apr 2023–Present**
Montpellier, France

- 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 ECCV 2024 (top 2.3% of all submissions).

Visiting Researcher **University of Trento** **Feb 2025–May 2025**
Trento, Italy

- Collaborative research on zero shot generalization using interpretable-by-design computer vision techniques.

Computer Vision R&D Engineer **Lely** **Sep 2020–Mar 2023**
Maassluis, Netherlands

- Developed computer vision algorithms for monitoring cows and robots, leading to one granted European patent 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. [\[Link\]](#)
- Implemented a semi-automated data annotation pipeline, reducing labeling noise and boosting model performance.

Computer Vision R&D Intern **Lely** **Jan 2020–Aug 2020**
Maassluis, Netherlands

- 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** **Sep 2019–Dec 2019**
Wageningen, Netherlands

- Re-wrote the ArUco marker detection algorithm to enable GPU compatibility, doubling its processing speed.

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

- **Programming Languages:** Python, MATLAB, C++, C, LaTeX
- **Machine Learning & AI:** Deep Learning, Computer Vision, Image Processing, Neural Networks
- **Data Science:** Data Analysis, Data Visualization
- **Frameworks & Libraries:** PyTorch, TensorFlow, Keras, OpenCV, NumPy, Pandas, SciPy
- **Technologies:** Git
- **Languages:** English, Dutch (A2), Malayalam, French (A2)

Professional Services

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

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.

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. [\[Link\]](#)

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
<ul style="list-style-type: none">• <i>Role:</i> Led the development of object detection, global mapping, and tracking algorithms, and mentored 4 interns working on various components.• <i>Achievements:</i> 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]	
Instance Level Cow Body Part Parsing	Jan 2020–Aug 2020
<ul style="list-style-type: none">• <i>Role:</i> 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.• <i>Achievements:</i> 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.	