

Experience

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| PhD Researcher (Doctorant) | Inria
Montpellier, France | Apr 2023–Present |
| <ul style="list-style-type: none">• 2 Accepted First Author papers at top computer vision conferences, namely ECCV and ICCV.• Researching state-of-the-art interpretable-by-design computer vision methods to solve fine-grained species classification tasks. | | |
| Computer Vision R&D Engineer | Lely
Maassluis, Netherlands | Sep 2020–Mar 2023 |
| <ul style="list-style-type: none">• Designed foundational vision algorithms for monitoring cows and robots in dairy farms, resulting in two pending patents.• Devised a novel multi-camera, multi-object tracking algorithm deployed 24/7 in multiple dairy farms.• Implemented a semi-automated data annotation pipeline, significantly reducing labeling noise for large-scale image datasets and improved model performance by 20%.• Supervised four master's students, guiding them through research internships and thesis projects. | | |
| 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">• Re-wrote a fiducial marker detection algorithm (ArUco) for GPU compatibility, significantly enhancing speed by 2x. | | |

Education

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| PhD. in Computer Science , University of Montpellier, France. | Apr 2023–Present |
| <ul style="list-style-type: none">• Doctoral School: Information, Structures and Systems Sciences (I2S)• 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">• Specialization: Computer Vision and Biometrics• 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) | |

Projects

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| Multi-camera, multi-object tracking in dairy farms | Sep 2020–Aug 2022 |
| <ul style="list-style-type: none">• 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. | |

Semantic Segmentation for self-driving vehicles

Jan 2021–Sep 2021

- **Role:** Led the creation of deep learning models for semantic segmentation tailored to custom farm environments, enhancing object recognition accuracy by 20% and reducing manual intervention by 40 hours monthly.
- **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.

Publications

- 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, 4397–4405.

Patents

- **Animal husbandry system**, International Patent Application PCT/IB2023/053903. Patent Pending. [\[Link\]](#)
- **System for monitoring a calving mammal**, US Patent Application: US18/262, 141. Patent Pending. [\[Link\]](#)

Certifications

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

Skills

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