Postdoctoral position

in

Computer Vision / Pattern recognition / Machine learning

Laboratoire PRISME - IUT de l'Indre

Prediction of lambing using video data

Keywords

Deep Learning, Weakly supervised learning, Action recognition, Video processing, Representation learning, Sequential learning, Animal Behavior Recognition

Context

Lambing is a key stage in the management of sheep farming, but it is also one of the most critical periods. Farmers must deal with high mortality rates, whether among lambs or ewes, due to complications during the lambing process, insufficient monitoring, or delayed interventions. These losses have a significant impact on farm profitability and also raise important animal welfare concerns.

In this context, the Num'Agnel project fits into a dynamic of technological innovation aimed at supporting farmers by alerting them of imminent lambing events. Its objective is to provide a reliable predictive system based on sensors and artificial intelligence algorithms, capable of warning farmers in order to enable early and appropriate interventions.

The proposed solution relies on the use of several complementary technologies :

- Cameras : to analyze the behavior of ewes.
- Accelerometers : to detect specific movements associated with the preparatory phases of lambing.
- Proximity sensors : to monitor interactions and changes in the animals' positions.

Thanks to these tools, Num'Agnel aims to reduce uncertainty margins and ensure enhanced monitoring, even in the physical absence of the farmer. This approach, based on artificial intelligence (particularly Deep Learning), will also make it possible to leverage the collected data to enrich knowledge of ovine behavior.

Objectives and missions

Within the Num'Agnel project, the Postdoctoral researcher will be responsible for developing and investigating innovative approaches for the detection of early signs of lambing using video data.

In particular, he/she will be expected to :

- Select and evaluate the most suitable approaches from the wide range of machine learning and computer vision methods available in the literature, with particular emphasis on approaches that account for temporal dynamics and are compatible with real-time use.
- Analyze the results obtained and identify the limitations and robustness of the approaches used.
- Propose and investigate improvements and alternative methods.
- Disseminate and promote the research results through the preparation of scientific publications and the production of an internal report.

Position description

- Contract type : Postdoctoral fixed-term contract
- Duration : 18 to 24 months
- Start date : 01/05/2026 (flexible)
- Salary : According to experience
- Location : IUT de l'Indre, Châteauroux, FRANCE
- Supervision : Xavier Desquesnes (Associate Professor), Bruno Emile (Full Professor), Sylvie Treuillet (Full Professor)

Candidate profile

- PhD in at least one of the following fields : Computer Vision, Machine Learning, Pattern Recognition
- Strong programming skills in Python
- Good knowledge of Linux tools and environment
- Autonomous and rigorous
- Curiosity and creative thinking
- Excellent ability to communicate in English, both orally and in writing

Application

Applications should be submitted as a .zip file containing :

- Detailed CV
- Cover Letter
- Notables publications
- References (at least two)

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