

Estimated reading time: 4 minute(s)

Research project for a PhD curriculum in ICT - Computer Engineering and Science/Electronics and Telecommunication/Industrial Applications of ICT

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Proposed Title of the research: Machine Learning for analysis and recognition of livestock in the wild.

Deep learning, biometry, domain adaptation, animal analysis, computer vision

Livestock management is a growing market that has a major impact on the economy of countries. Today the technique for analyzing livestock characteristics are mostly semi supervised and require a contact with the animal. Contemporarily, machine learning and deep learning has highlighted major performance in biometric recognition of human beings. The Phd focus on technique for adapting the domain of deep biometric models for livestock analysis exploiting advanced domain adaptation and dataset shift techniques to cope with limited dataset. Domain network adaptation, under limited dataset, is emerging as the major important topics in deep learning for the next years.

The candidate will study the problem of deep network adaptation under limited supervision. In this context during the activity the candidate will acquire a set of limited datasets with the aid of expert veterinarians that tackles different aspect of livestock biometric recognition.

Subsequently, pivoting techniques, projective methods and manifold

learning will be explored for supervised domain warping in the context of deep learning with limited labelled examples. Adversarial and generative techniques will be applied to guide the warp with as limited supervision as possible.

Supporting research projects (and Department) Department of Engineering Enzo Ferrari

Possible connections with research groups, companies, universities.

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