# Image Analysis Applied to Morphological Assessment in Bovine Livestock (2011)

TÃ-tulo:Image Analysis Applied to Morphological Assessment in Bovine Livestock
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Verlag (Alemania), 2011DOI:10.1007/978-3-642-23687-7_29 Abstract:

Morphological assessment is one important parameter considered in conservation and improvement programs of bovine livestock. This assessment process consists of scoring an animal attending to its morphology, and is normally carried out by highly-qualified staff.

In this paper, a system designed to provide an assessment based on a lateral image of the cow is presented. The system consists of two main parts: a feature extractor stage, to reduce the information of the cow in the image to a set of parameters, and a neural network stage to provide a score considering that set of parameters. For the image analysis section, a model of the object is constructed by means of point distribution models
(PDM). Later, that model is used in the searching process within each image, that is carried out using genetic algorithm (GA) techniques. As a result of this stage, the vector of weights that describe the deviation of the given shape from the mean is obtained. This vector is used in the second stage, where a multilayer perceptron is trained to provide the desired assessment, using the scores given by experts for selected cows.

The system has been tested with 124 images corresponding to 44 individuals of a special rustic breed, with very promising results, taking into account that the information contained in only one view of the cow is not complete.