

Short Abstract

Breed classification of pigs based on muzzle images has been attempted in this thesis. Limited, noisy, heterogeneous visual data stemming from MUZZLE images taken from Pigs belonging to different breeds pose many challenges, not just from the point of view of identifying and isolating those features and statistics which are discriminatory in nature, but also from the point of view of constructing a suitable breed-centric model (aided by an inferencing mechanism), which is robust and stable.

The work in this light has three primary contributions:

- Designing and selecting a set of Handcrafted Colour and Texture based visual descriptors which are breed-discriminatory.
- Devising a feature-specific siphoning policy and model for segregating breeds serially.
- Using Spanning Trees in DUAL MODE (MIN-tree and MAX-tree forms) for binding breed-specific features and devising a NOVEL test-point INDUCTION procedure for producing an OUTLIER score, whether the point is in the INTERIOR or EXTERIOR of the breed-cluster. Given the diversity of data on hand and the limited training set available to build the model, CROSS-testing results were very promising: DUROC-breed (93.85%), GHUNGROO (97.48%), HAMPSHIRE (94.27%) and YORKSHIRE (100%).

