# An Automated Approach towards Analysing a Good Balanced Horse from a 2D Equine Image

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University of Dublin, Trinity College, 2020

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The calculation of conformation traits by a horse breeder is an important part of selection before buying any breeding stallion or purchasing a racing horse. These conformation traits involve calculating joint angles and body length ratio, thus giving a measure of the health and performance. The lack of studies available for automatic calculation of conformation traits of a horse motivates building a piece of software which takes in a 2D equine image as input and provides the quality of the horse, thus reducing the need to pay an expert and ascertaining whether or not the horse was worth buying. Since, evaluation of front, back, and top of the horse were not possible using the 2D equine image, the research focuses on evaluating Good Balance: Body Length Ratio (11 traits) and Angular Proportions (12 traits). The process involves four steps: Foreground Extraction, Colour and Texture Analysis, Contour and Corner Detection and Novel Algorithm to detect the Points of Interest and calculate proportions, angles and slopes using these points to determine the quality of the horse. The conformation trait obtained were rated based on the learning from the conformation documents. The result showed slight displacement in Point of Interest around the hip and hind leg region in a few images. With the availability of large labelled dataset from a horse breeder, the work could be carried forward to use CNN technique to plot Points of Interest.