

Master's thesis

PRIP & University of Veterinary Medicine

Development of a pose-independent representation of 2D horse shapes

Introduction and Motivation:

The Spanish Riding School with its Lipizzan horses is one of the most famous tourist attractions in Vienna. In breeding, it is desirable to objectively evaluate the traits of a Lipizzan horse based on quantitative measurements. Unfortunately, traditional approaches of measurement lead to a low repeatability rate due to pose changes of the horse and/or differences between the measurement techniques of different people.

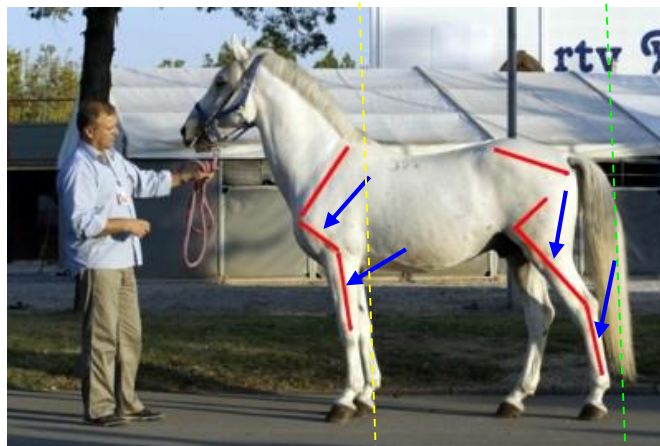
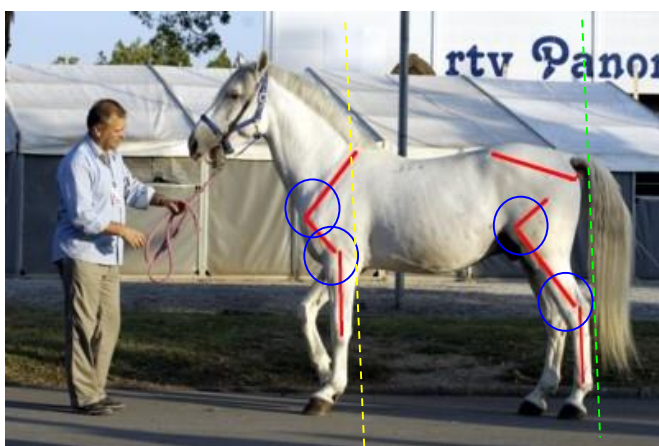
The study of shapes based on image analysis is a growing field of research in biological and zoo-technical sciences. Since most traits of a horse can be determined from its shape, an image-based approach looks promising. Dr. Druml at the University of Veterinary Medicine already analysed horse shapes with the help of Principal Component Analysis (PCA). His experiments showed that the biggest within-animal (for the same horse) variation is due to changing foreleg, hindleg, neck and head postures.

Aim of thesis:

Under the assumption that the horse is captured by the same setup (camera, position of camera to horse, view of camera onto horse, etc.), the biggest within-animal variations are due to the articulation of body parts of the horse. The aim of this thesis is to:

1. develop a representation of a 2D horse shape, which is independent of pose OR
2. develop an approach which is able to "normalize" the current pose of a horse to a standard-pose.

Such a pose-independent or normalized representation will allow to compare different horses and measure between-animal variations, which are interesting and essential for breeding.



If you are interested contact us:

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