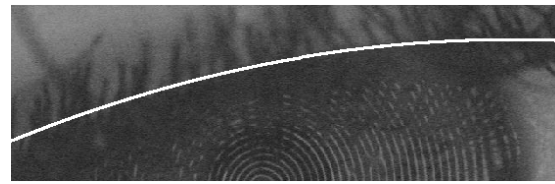
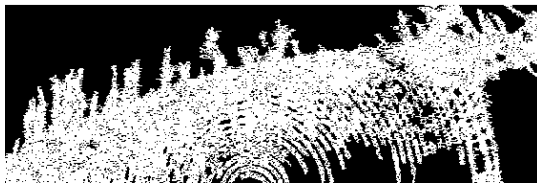

Robust Regression for Estimating the Eyelid Position in Videokeratoscopic Images



Pro-/Projektseminar or Bachelor/Master Thesis



The knowledge about the exact position of the eyelid in a videokeratoscopic image is useful in many ways, for example:

- As a preprocessing step for enhancing the videokeratoscopic image for a more accurate corneal topography estimation, especially for people with a small eyelid aperture.
- For studying the impact of the force caused by the eyelids on the corneal topography.

The detection of the eyelid can be divided into two steps:

- Detection of the edge points of the eyelid by using image segmentation techniques.
- Fitting of a parametric model to the detected edge points.

Due to the presence of eyelashes and low contrast in the videokeratoscopic images, standard edge detection techniques fail. It is therefore necessary to use image segmentation techniques, such as active contours or region growing to identify the eyelid edge. The fitting to the parametric model is performed using robust regression techniques.

The aim of this project is to gain an insight about robust statistics for signal processing, and to use robust regression techniques to detect eyelids in videokeratoscopic images.

If you are interested in the project please contact:

Dr.-Ing. Michael Muma
mmuma@spg.tu-darmstadt.de
Room S3|06 251

