Mini Project 2: Morphological operations

One of the important tasks in medical imaging is to quantitative measurements of anatomical structures. In order to detect and extract the structural information in the image one can use morphological operations.

MATERIAL:

- Rice.tif
- RoBlood images
- US00002S.tif

TOOLS:

- Erosion
- Dilation
- Connected components

Tasks:

1. By using a combination of erosion and dilation on the Rice.tif image – find the contours of all the rice.
2. Using the images RoBlood_man_thres.bmp and RoBlood_MathcedFilterResult.bmp find the pixel ratio of the green over red pixels in the figure 1.
3. On the US00002S.tif separate the background from the anatomical information.

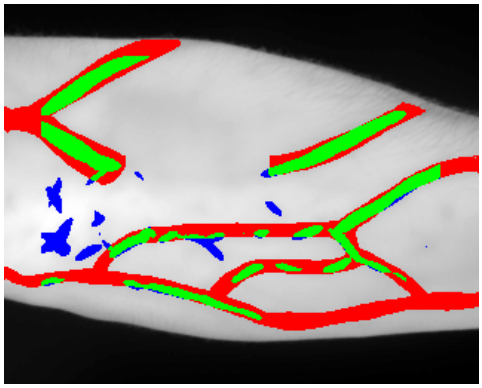

Figure 1: Handlabled (red) vs RoBlood (green/blue) result

Report:

Your report must be max. 10 pages (2400 chars pr. page) and include the following document sections:

- Aim: describe the purpose of the exercise
- Method: describe what theory, methods and tools you have used and/or implemented in order to produce the results.
- Results: describe the outcome of applying the tools on the images and reflect on how these tools could be used to improve the usage of the images.

Deadline:

Date: **25-10-2020** (until midnight), uploaded electronically on BlackBoard.

After the deadline the lecturers will review your report for approval (no grading).