Assignment A3: Image comparison

Jens E. Wilhjelm

Biomedical Engineering, Department of Health Technology,
Ørsteds plads, Building 349
Technical University of Denmark
2800 Kgs. Lyngby

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What to do

This assignment can later be used directly in the report. Some of the advices that appeared for Assignment 1 can also be used here.

At this point in the course, you have recorded all the medical images from the phantoms. For the modalities CT, MRI and ultrasound you have 3D images covering most of the phantom. For these 3D data sets, you have visualized the surface containing the fiducial markers in order to adjust the 3D axis of the data sets so that they all have exactly the same zero point in the phantom. When this is done, it is straight forward to extract images of exactly the same slice from all data sets and compare them. This slice should be orientated the same way as the photographs of the anatomical slices (which you - at this point in the course - should be able to find in the data directory of the homepage of the course).

In this assignment, please make a two-page "report" containing:

- One set of CT, MRI (T_1 and T_2-weigthed) and ultrasound images of the same slice shown in a two-by-two picture set-up and with exactly the same size of the images (that is, the physical size on the paper should be identical for the 4 images and the metric axis should be identical). You should here see the same cross-sectional view of a specific part of the phantom; however, since the imaging modalities are different, the images will look different apart from the contour of the tissue, which probably will be quite the same.

- An analysis of the content of the phantom at this particular slice, based on these four images only. It is more important that you identify the tissue types than which animal it actually is. Also note, that the photographs of the anatomical slices are not to be used here.