< RT704 Assignment 4 >

Data:

target.png – target image
target_label.png – target label
source.png – source image
source_label.png – source label

[5pt] 1. Annotate more than 3 corresponding points from the source and target images manually.

[20pt] 2. Find an affine transformation matrix.

[10pt] 3. Transform the source image to the target image. Use the back-projection with bilinear interpolation.

[10pt] 4. Transform the source label to the target image. Use the back-projection with nearest neighbor interpolation. Compute the DSC score between the transformed label and the target label.

[5pt] 5. Extract object boundary points from the source and target labels.

[30pt] 6. Implement Iterative Closest Point (ICP) method and find an affine transformation matrix.

[10pt] 7. Transform the source image to the target image. Use the back-projection with bilinear interpolation.

[10pt] 8. Transform the source label to the target image. Use the back-projection with nearest neighbor interpolation. Compute the DSC score between the transformed label and the target label.

Submit your report with the codes on LMS by 12/17. When you submit, make your zip filename "HW4_yourfirstname.zip"