

Assignment 5: Classifying with Alignment

October 17, 2009

In this assignment, you will examine the improvement (or worsening) of a classifier when you make comparisons over all possible alignments of images.

1. Write a matlab function `EuclidTrans.m` which calculates the minimum Euclidean distance between two images of the same size when one of the images is held constant and the other one is translated through all possible positions. To translate one of the images through all possible positions, just use `circshift` in a double loop. You may want to get your code working on small images before running it on large images.
2. Use your k-nearest neighbor classifier from assignment 4 with the new distance function `EuclidTrans`. Report the results for classifying the 3's and 5's of assignment 4. Compare the results to the results you got using the original distance function. Which is better, and why do you think it is?

Turn in your function `EuclidTrans.m` and the results of your experiments.