Mid Project Report

Part A: Data Construction and Parameter-Setting:

Figure from Matlab:

DCT dictionary

Figure from Matlab:

Barbara Image

Part B: Compute the Representation Error Obtained by the DCT Dictionary

Insert average MSE for train set:

Insert average MSE for test set:

Insert average number of non-zeros for train set:

Insert average number of non-zeros for test set:

Part C: Procrustes Dictionary Learning

The obtained learned dictionary:

Figure from Matlab:

Learned dictionary

Discuss the obtained dictionary:

Average MSE and number of nonzeros as a function of the iteration (train-set):

Figure from Matlab:

Average # nonzeros vs. # iterations

Figure from Matlab:

Average MSE vs. # iterations

Discuss the obtained curves:

Insert average MSE for test set:

Discuss the obtained MSE:

Compare the results of the DCT dictionary and the learned dictionary: