Digital Image Processing – Assignment 6

Winter 2018

1) **Face Recognition:** Take the face images in the folder “Yale Faces”. Using the concepts of SVD, perform face recognition. This can be done by taking some samples of all different faces and forming the basis. Now, take a new face image from the folder (one that you have not used earlier) and determine which person’s face is in the test image. This can be done using MATLAB.

2) **JPG Compression:** Take the image and divide into continuous blocks of 8 by 8 from left to right and top to bottom. Perform DCT for each block. You will get coefficients corresponding to each of the entries in the 8 by 8 matrix. Divide these coefficients by the standard Q matrix (which will be uploaded on Gyapak). The results are to be rounded to the nearest integer. Convert these 64 elements into a vector of length 64 using the zig zag pattern mentioned in the class. The 64 element vector will now consist of many zeros. Store only the first r elements, where r is such that all elements after r are zeros. This is the basis of jpg compression. Do this for all 8 by 8 blocks. Store the coefficients for each block. Do the reverse process and reconstruct the image.

Submission Date: 6th April, 2018