

Coursework Four results by Pierre Eugene Valassakis (pev115, 00644379)

2. The mean vector for the HepatitisC Dataset is:

1.164 3.916 0.448 5.679 4.865 3.778 4.127 3.604 0.217

3. The covariance matrix for the HepatitisC dataset is:

5.880 0.245 -0.004 -0.284 -0.346 -0.417 -0.481 -0.267 -0.067
0.245 7.572 0.073 -0.358 -0.346 0.257 2.273 0.946 -0.032
-0.004 0.073 0.247 -0.116 -0.039 -0.003 0.100 0.066 -0.005
-0.284 -0.358 -0.116 16.960 7.969 4.443 -1.036 -0.306 0.047
-0.346 -0.346 -0.039 7.969 8.361 4.921 -0.763 -0.752 -0.001
-0.417 0.257 -0.003 4.443 4.921 6.683 -0.087 -0.376 -0.141
-0.481 2.273 0.100 -1.036 -0.763 -0.087 20.583 1.122 0.014
-0.267 0.946 0.066 -0.306 -0.752 -0.376 1.122 4.317 0.119
-0.067 -0.032 -0.005 0.047 -0.001 -0.141 0.014 0.119 0.170

4. The component magnitudes for the image c.pgm in the given principal component basis is:

1206.254 -1590.133 -248.136 -821.249 246.009 -771.900 963.633 376.967 161.599 -533.276

5. The eigenface images that were created in task 4.3 (by using the given basis) are:

PrincipalComponent0.jpg PrincipalComponent1.jpg PrincipalComponent2.jpg



PrincipalComponent3.jpg PrincipalComponent4.jpg PrincipalComponent5.jpg



PrincipalComponent6.jpg PrincipalComponent7.jpg PrincipalComponent8.jpg



PrincipalComponent9.jpg



The Reconstructed Component images created in task 4.4 with the given basis are:

ReconstructedComponent0.jpg



ReconstructedComponent1.jpg



ReconstructedComponent2.jpg



ReconstructedComponent3.jpg



ReconstructedComponent4.jpg



ReconstructedComponent5.jpg



ReconstructedComponent6.jpg



ReconstructedComponent7.jpg



ReconstructedComponent8.jpg



ReconstructedComponent9.jpg



6. The eigenfaces obtained in the bases calculated from the images are:

PrincipalComponent0.jpg



PrincipalComponent1.jpg



PrincipalComponent2.jpg



PrincipalComponent3.jpg



PrincipalComponent4.jpg



PrincipalComponent5.jpg



The reconstructed images with these are:

ReconstructedComponent0.jpg



ReconstructedComponent1.jpg



ReconstructedComponent2.jpg



ReconstructedComponent3.jpg



ReconstructedComponent4.jpg



ReconstructedComponent5.jpg

