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**Assignment 9 – Face Recognition using PCA**

Here we were to implement Face Recognition using Principal Component Analysis and one of the hyper-parameter in PCA implementation is ‘k’ which denotes the number of eigen vectors with the highest eigen values. This helps us in achieving Dimensionality Reduction as a d-dimensional data can now be represented as k-dimensional data, with the help of selected eigen vectors.

So one of the task was to vary over several values of k in the implementation of Face Regonition using PCA, and compare the accuracy of the model of each of the instances. We iterated over several values of k and the code file for all of them have been shared in the folder, and also the result obtained is as follows:

|  |  |
| --- | --- |
| Value of ‘k’ | Model Accuracy over Test data |
|  |  |
| 5 | 58.125% |
| 10 | 55.625% |
| 15 | 50.625% |
| 30 | 46.25% |
| 50 | 42.50% |
| 80 | 40.625% |

