Pattern Recognition
Group 3
Face Recognition Using Laplacian-faces

1. Team Details

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2. Brief description of the project:

   In this project, we intend to implement PCA, LDA and LPP for face recognition. We train the system by the training data to obtain feature space “eigenfaces” through PCA, the feature space “fisherfaces” through LDA and the feature space “laplacianfaces” through LPP. Once the feature space FS is obtained, training faces are projected to subspace defined by FS to construct a Face Database. When an unknown face is needed to recognize, this test face is firstly projected onto subspace FS. Afterward, the program finds the K nearest neighbors of the projected data in Face Database. Finally, the class label is assigned to the test face according to the majority vote among the neighbors. This classification algorithm is known as K-nearest neighbor.

3. Bibliography

He, X., Yan, S., Hu, Y., Niyogi, P. and Zhang, H.J. (2005). Face Recognition Using Laplacianfaces. IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 27, no. 3, pp. 328-340.

4. The input to our algorithm will be an image and the output result will be the label of the image.

5. Work Distribution:

Sr. No.	Work Distribution	Team Member
1	Principle Component Analysis	Shunyu, Yogesh
2	Linear Discriminant Analysis	Kartik,Krishnan, Darvin
3	Locality Preserving Projection	Girish, Chetan, Sandeep