**Synopsis**

**“Identifying Gender using Face Recoginition”**

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Identifying gender, age, ethnicity of human faces using computer has been popular and gaining immense attention in past several years. These attributes such as gender, age, ethnicity can play an important role in many application such as human-computer interaction, surveillance, content-based indexing and searching biometrics, demographic studies and targeted advertising. Studies have shown that humans can easily differentiate between male and female but it’s difficult for a machine.

In our project we are going to use Fisher Faces using OpenCV for gender recoginition. The advantage of using FisherFaces method is, it instead tries to maximize the variance between classes instead of variance with a class .Hence,it is much better suited for the Gender Classification task.As expected FisherFaces gives us remarkable results of 10% uncentered data and 3% on centered data also 10% is what all the algorithms converege to when used to uncentered data.This throws light on the importance of centering it as information about features can be very crucial in classifying it very correctly.

Fisherfaces used LDA (Linear Discriminant Analysis). LDA performs a class-specific dimensionality reduction and was invented by the great statistician Sir R.A Fisher. The LDA maximizes the ratio of between classes to within-classes scatter, instead of maximizing the overall scatter.

The classification is restricted to two classes- male and female. We are using dataset from

<https://data.vision.ee.ethz.ch/cvl/rrothe/imdb-wiki/static/wiki_crop.tar>

This dataset contains 1000 male images and 1000 female images.