

## **Abstract:**

In past few previous years the face recognition has gained the substantial place in the community of the researchers and the market. Many face recognition algorithms and modifications are in use in the current era. Methods including anisotropic diffusion, Markov models, ICA, Linear filtering, Point feature matching, PCA and LDA are mostly in use in the field of image processing. Surveillance system and crowd analysis have been the newest research circles in the field of face recognition. Object tracking, object characterizing and behavior analysis are few of the features extracted in the surveillance system. Crowd density estimations estimate the number of the individuals in the crowded space per square meter. At that point, in the subsequent part, we outlined the difficulties and the issues experienced by the utilizations of these assignments in jam-packed scenes.

Feature based approach utilizes the earlier data or nearby highlights of countenances to choose various highlights to solely recognize people. Along with the feature based approach, holistic approach and hybrid approach are the examples of face recognitions methods. Previously the Fourier and the iterative method have also been in use in this field. Principal Component Analysis, or PCA, is a dimensionality-reduction method that is often used to decrease the dimensionality of big data collect, by transforming a big data of variables into a fewer one that still contains most of the information in the large set. Opposite to PCA, Linear discriminant analysis, a technique used in statistics, face recognition and machine learning to search a linear combination of characteristics that characterizes or separates two or more classes of objects or events. This document explains and analyses the different techniques utilized in the face recognition in the dense crowd space.