

**Abstract: is
performed by
isolating the face**



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Abstract: In today's world there are a lot of threats arising due to terrorists, criminals, thieves and also illegal access of the data from the unwanted person etc. This leads to a lot of challenges in our daily life. With an increase in threat globally the need to deploy reliable surveillance is on the increase. Video surveillance is considered to be the major breakthrough in monitoring and security.

In video surveillance, the facial recognition furthermore enhances the security and defense in real time. By face recognition the probe person can be recognized more accurately, efficiently and with short time. Various methods, approaches, algorithms were available for face recognition from surveillance video. The main objective of the paper is to discuss and analyze about the various facial recognition techniques.

Introduction: The concept of face recognition is to detect the particular character from the video or from the database and is used for security purposes. Face gives a rich source of information about a person and it is a most acceptable biometric. Face recognition, voice recognition, retinal scanning, fingerprint are some of the emerging biometrics. In these, the method of spotting an individual by face recognition is far more accurate and faster than any others.

Major advances have taken place in the last few decades in face recognition. There is a significant attention and active research in this field. The human face tends to change significantly and quickly in time, so it is considered as a complicated and dynamic structure. Face recognition is regarded to be challenging when there is a variability in information due to pose variation,

lightning conditions and other various factors. Face recognition should address these major challenges. Pose variation is considered to be a difficult problem because all faces seem to be similar with two eyes, mouth, nose and other features present in the same location.

The main aim of face recognition is to detect and verify a person from videos by one-to-many matching that compares the query face with the stored database faces⁴. Face recognition scheme may fail when there is a large difference in the query face and the stored database faces e. g., makeup changes¹. Face detection, feature extraction and face recognition are said to be the three stages of a face recognition system².

Face detection is the process of determining the existence of a face in a video frame. Once a face is detected, face recognition is performed by isolating the face region and feature extraction is done carried out. Face verification and face identification are the two important stages of face recognition problem³⁵. The Image Preprocessing, Feature extraction from face and the face matching are considered to be the main stages of the Face Recognition technique.

In fig. 1 these three main stages of face recognition algorithm is shown.

Image normalization and enhancement is done during the Image Preprocessing. Also the features of the face are extracted during this stage

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