

## **FACE RECOGNITION USING A VARIATION OF PRINCIPLE COMPONENT ANALYSIS TECHNIQUE**

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Face recognition systems are built on computer programs that analyze images of human faces for purposes of identification. Face Recognition technique uses to match a given face to an image in a database.

The study examines the current face recognition techniques and presents alternative method for face recognition. The method can specially cope with different distorted levels in facial images. This method relies on a variation of the Principal Component Analysis (PCA) technique.

The algorithm extracts the eigen values and eigen vectors from the images. It performs the singular value decomposition to produce a weight for that image. The images are recognized based on the minimum distance. The system finds the closest match from the database to the incoming image.

The system uses the "Olivetti face database" as the face image database. The database contains 10 images of each person in a group that consists of 6 persons. The proposed system will take a picture that is not included in the database and match it to a picture of the same person that is within the image database.

Experimental results demonstrate that the proposed approach can efficiently recognize human faces. This system satisfactorily deals with problems encountered using other face recognition systems such as recognizing distorted images. This algorithm can achieve 92% and higher performance. Moreover, the proposed method reduces the computational complexity.

The proposed method, which uses the singular value decomposition technique, also gives better recognition accuracy and discriminatory power.