Abstract

Face recognition is a field of computer vision that uses faces to identify or verify a person. Face recognition is used for real-time applications and has become the most important biometric area. This paper presents two methodologies for face recognition. The first methodology is feature extraction and dimension reduction using Principal Component Analysis (PCA) technique, and the second methodology is the classification process using the Back Propagation Neural Network (BPNN). The proposed technique has been tested using Face94 and Grimace databases. Ten individuals are chosen from each database to test the methodology. Image compression using Discrete Cosine Transform (DCT) is implemented on images in each database. Different numbers of testing and training images are used for performance evaluation. Increasing the number of training images will increase the recognition rate. This face recognition system is implemented using a MATLAB software package. The overall performance of PCA-BPNN is satisfactory, and the recognition rate is 100%.

References

**Index Terms**

Computer Science  
Image Processing
Keywords

Face94, Grimace, DCT, BMP, PCA, PCs, BPNN, MLP