Abstract

Face recognition is a field of computer vision that use faces to identify or verify a person. Face recognition used for real time applications and become the most important biometric area. This paper present two methodologies for face recognition. First methodology is feature extraction and dimension reduction using Principal Component Analysis (PCA) technique and second methodology is 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 number 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%.

**Index Terms**

Computer Science

Image Processing
Keywords

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