Abstract

Face recognition is very important topic because of its applications. The purpose of this work is developing a system that can recognize a person and register postgraduate students' attendance at faculty of specific education, Damietta University, Egypt. The proposed system consists of five stages: image acquisition, face detection, pre-processing, features extraction and classification. Image acquisition to capture real-time images. Face detection to detect face region from the image. Pre-processing stage involve the effective way of suppressing the unwanted distortion of image. Feature Extraction is a method of capturing visual content of images such as extraction of color, texture. In this work, Gray Level Co-occurrence Matrix is used for calculating texture features of the image. Four features namely, Angular Second Moment, Correlation, Inverse Difference Moment and Contrast are computed. Four classifiers were used: KNN (Nearest Neighbor), Naïve Bayes, Decision Tree and Discriminant Analysis. The accuracy of KNN is better than other classifiers therefore, KNN is used. The performance of the proposed system is evaluated by using dataset of postgraduate students' faces.
Experimental results show that the proposed system achieved accurately of 90%.

References


**Index Terms**

Computer Science  
Pattern Recognition

**Keywords**

Face Recognition, Texture Classification, K-Nearest Neighbor, Gray Level Co-occurrence Matrix.