Abstract

In the preceding decade, Human face recognition has attracted significant consideration as one of the most effective applications of image analysis and understanding. Face recognition is one of the diverse techniques used for identifying an individual. Generally the image variations because of the change in face identity are less than the variations among the images of the same face under different illumination and viewing angle. Illumination and pose are the two major challenges, among the several factors that influence face recognition. Pose and illumination variations severely affect the performance of face recognition. Significantly less effort has been taken to tackle the problem of combined variations of pose and illumination in face recognition, though several algorithms have been proposed for face recognition from fixed points. In this paper we propose a face recognition method that is robust to pose and illumination variations. We first propose a simple pose estimation method based on 2D images, which uses a suitable classification rule and image representation to classify a pose of a face image. Then, the image can be assigned to a pose class by a classification rule in a low-dimensional subspace constructed by a feature extraction method. We propose a shadow compensation method that compensates for illumination variation in a face image so that the image can be recognized by a face recognition system designed for images under normal illumination condition. From the implementation result, it is evident that our proposed method
An Efficient Face Recognition System Based On the Combination of Pose Invariant and Illumination Factors

based on the hybridization technique recognizes the face images effectively.

References

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Index Terms

Computer Science                      Pattern Recognition

Keywords

Face recognition  Pose  illumination  Edge detection  Shadow compensation