Abstract

Many conventional methods of face recognition depend solely on appearance and model based. However there is inbuilt degree of self-similarity in the image of faces, which can be efficiently utilized through representation exploiting self-transformations, known as Iterated Function System (IFS).

Interestingly, virtually all images of natural or man-made objects, show region wise self similarity although they may not be globally self similar. Such objects can be represented by Partitioned Iterated Function System (PIFS) very compactly.
Hence, we propose to carry out the face recognition using Partitioned Iterated Function System. This approach has been tested upon the 106 images of 27 persons using FERET database. The results obtained under the variance, rotation and scaling are outperforming. In this approach we carried out face recognition based on PIFS representation and matching carried out in the PIFS code domain, which is more efficient than correlation in the image domain.

The recognition method is efficient in terms of time complexity as the PIFS code of reference faces are built off-line and recognition of query object involves only comparison of its PIFS code with those in the database online.

Reference


Index Terms

Computer Science

Pattern Recognition

Key words

Alpha

Luminance

Fractals