Abstract

The field of face recognition is increasingly investigated for access control, face based search, passport processing, security, surveillance, etc. applications. Performance of face recognition systems under constrained environment is quite satisfactory, but face recognition in unconstrained environment is yet a challenging problem due to key technical challenging issues. Varying illumination is one of the key issues in real time face recognition applications.
Experimental assessment of various methods developed by research community demonstrates that, yet there is a need and scope for improving methods to handle the varying illumination problem. In this paper, a novel approach, referred to as fuzzy threshold based local binary pattern is proposed for extracting illumination invariant features. Local binary pattern based method is modified by introducing a fuzzy based threshold for generating binary pattern. Effectiveness of proposed method is assessed on extended Yale B face database. Experimental results demonstrate that proposed method performs better than conventional binary pattern under complex illumination conditions.

Reference


Index Terms

Computer Science

Intelligent Systems

Key words

Face Recognition

Feature Extraction

Fuzzy Threshold

Illumination

Local Binary Pattern