Abstract

Face recognition system compares the tested face with the various training faces reserved in the database with an efficient success rate. The best matching of the tested face with the training faces is an important task. In this article, how to recognize a face is presented; two different analysis algorithms are included in the evaluation system: Eigenface and ICA. The local dataset used in this article is pre-processed using statistical standard methods. Pre-processing software, which is provided by the Colorado State University (CSU) Face Identification Evaluation System Version 5.0 under Unix Shell scripts, was written using ANSI C code. Independent Component Analysis algorithm (ICA) is written using Matlab for face recognition implementation. This article explains how the faces, having some variations such as facial expressions and viewing conditions w.r.t the original faces reserved in the database, are detected with an improved accuracy and success rate. Finally, the result shows several graphs by Matlab.
2. Face Recognition Homepage: http://www.face-rec.org/general-info/

**Index Terms**

Computer Science  
Pattern Recognition

**Keywords**
Pattern Recognition, Face Recognition System, ICA algorithm, Eigenface.