

Face Recognition using ICA for Biometric Security System

Meenakshi A.D.

meenakshi2307@gmail.com

Prof. Prashant Jain

Jabalpur Engineering College (JEC)

Abstract – An amount of current face recognition procedures use face representations originate by unsupervised statistical approaches. Typically these approaches find a set of basis images and characterize faces as a linear combination of those images. Principal component analysis (PCA) is a prevalent example of such methods. The foundation images found by PCA depend only on pairwise relationships amongst pixels in the image database. In a task such as face recognition, in which imperative information may be contained in the high-order relationships among pixels, it seems reasonable to expect that better basis images may be found by methods sensitive to these high-order statistics. Independent component analysis (ICA), a generalization of PCA, is one such technique. We used a version of ICA for recognition of faces. ICA was performed on face images in the database, ICA representations were superior as compare to the representations based on PCA for recognizing faces across days and changes in expression. Results shows that a classifier that use ICA representations, gave the best performance.

Keywords–Face recognition, ICA, PCA.