

FACE RECOGNITION USING INCREMENTAL PRINCIPAL COMPONENTS ANALYSIS- INDEPENDENT COMPONENT ANALYSIS (IPCA-ICA) ALGORITHM

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ABSTRACT

The objective of this paper is to put working, mathematical model and result of Incremental Principal Component Analysis and Independent Component Analysis (IPCA-ICA) algorithm in face recognition which has the capabilities of recognition the face with different poses and under different conditions. This algorithm computes the principal components of a sequence of image vectors incrementally without estimating the covariance matrix (so covariance-free) and at the same time transforming these principal components to the independent directions that maximize the non-Gaussianity of the source. This procedure is done by merging the runs of two algorithms based on Incremental principal component analysis (IPCA) and independent component analysis (ICA) running sequentially.

KEYWORDS: Image Processing, Face Recognition, ICA, IPCA, PCA