



A Fully Automated Face Recognition Using Transform-Invariant PCA

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Abstract: Transform-invariant PCA (TIPCA) technique goal is to accurately transform the human's natural face for analysis of training image. Normal alignment is different from TIPCA alignment which generates the favourable Eigen space. The objective of the Eigen space is to minimize the error of mean square error between the aligned images and their reconstructions. The FERET image validates the mutual promotion between image alignment and Eigen space representation. This makes the optimized coding and recognition performance. Experimental results also suggest many spatial and frequency domain methods can benefit from using the TIPCA-aligned faces, instead of the manually eye-aligned faces. Favourable accuracies against the state-of-the-art results on face coding and face recognition are reported.

Index Terms: Face alignment, face representation, face coding, face recognition, Eigen faces, principal component analysis

