A Case Study on Various Preprocessing Methods and their Impact on Face Recognition using Random Forest

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Abstract

The Random forest is a well known powerful classifier, that used to classify a wide range of patterns in our daily life for different purposes, it enters into many fields such as images and objects classification. In this paper, we studied the impact of a five common preprocessing method in face recognition on the random forest performance, The study included applying five different pre-processing methods (Single Scale Retinex, Discreet Cosine Transform, wavelet Denoising, Gradient faces, and the method proposed by tan and et Known as pp chain or TT), each one has applied separately with a general random forest as a classifier, we computed the error rate for each method. The study was conducted on a face recognition system under occlusion and illumination variation. All experiments were done using MATLAB and Extended Yale B database.

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Index Terms

Computer Science  Pattern Recognition

Keywords

Random Forest, Gradient Faces, Wavelet Denoising, Discrete Cosine Transform, Single Scale Retinex, TT (tan and et).