Statistical approach based iris recognition using local binary pattern

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Résumé en anglais	Among biometric features utilized for identity recognition purposes, iris has proven to be the most reliable one in terms of sufficient distinctiveness, which has direct implications and importance towards improving the performance and safety of the security verification process through which it is decided whether any instance at hand should be granted permission to access preserved locations or sources of information. This paper deals with the main challenge involved in iris recognition, which lies in its comparatively high computational complexity, having remained unresolved heretofore, at least, as far as the existing literature is concerned. The enhancement brought about by the proposed methodology originates from taking advantage of local binary patterns for processing each segment of the original image, having undergone equalization in advance, as well as applying probability distribution functions separately to every layer of the pixel values, whereas being represented with respect to mutually-independent hue-saturation-intensity color channels. Besides, the Kullback-Leibler Distance between the vectors obtained through concatenation of the feature vectors is taken into account as the classification criterion, which has led to an outstanding recognition rate of 98.44 percent when tested on the UPOL database, with 192 iris images.
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