IRIS RECOGNITION USING CORNER DETECTION

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Abstract: This paper proposes an iris recognition algorithm with the help of corner detection. It consists of five major steps i.e., iris acquisition, localization, normalization, feature extraction and matching. The acquired iris image has been preprocessed to detect the iris, which is an annular portion between the pupil and the sclera. The inner pupil boundary is localized using Circular Hough Transformation. The technique performs better in the case of occlusions and images muddled by artifacts such as shadows and noise. The outer iris boundary is detected by circular summation of intensity approach from the determined pupil center and radius. The localized iris image is transformed from Cartesian to polar co-ordinate system to handle different size, variation in illumination and pupil dilation. Corners in the transformed iris image are detected using covariance matrix of change in intensity along rows and columns. All detected corners are considered as features of the iris image. For recognition through iris, corners of both the iris images are detected and total number of corners that are matched between the two images are obtained. The two iris images belong to the same person if the number of matched corners is greater than some threshold value. The system is tested on IITK database having 900 iris images and CASIA database. The algorithm has shown an overall accuracy of 95.4% with FRR of 5% and FAR of 4%.