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A Weighted Approach to Unconstrained Iris Recognition

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Abstract : This paper presents a weighted approach to unconstrained iris recognition. Nowadays, commercial systems are usually characterized by strong acquisition constraints based on the subject's cooperation. However, it is not always achievable for real scenarios in our daily life. Researchers have been focused on reducing these constraints and maintaining the performance of the system by new techniques at the same time. With large variation in the environment, there are two main improvements to develop the proposed iris recognition system. For solving extremely uneven lighting condition, statistic based illumination normalization is first used on eye region to increase the accuracy of iris feature. The detection of the iris image is based on Adaboost algorithm. Secondly, the weighted approach is designed by Gaussian functions according to the distance to the center of the iris. Furthermore, local binary pattern (LBP) histogram is then applied to texture classification with the weight. Experiment showed that the proposed system provided users a more flexible and feasible way to interact with the verification system through iris recognition.

Keywords : authentication, iris recognition, adaboost, local binary pattern
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