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Abstract: The use of iris recognition for human authentication has been spreading in the past years. Daugman has proposed a method for iris recognition, composed by four stages: segmentation, normalization, feature extraction, and matching. In this paper we propose some modifications and extensions to Daugman's method to cope with noisy images. These modifications are proposed after a study of images of CASIA and UBIRIS databases. The major modification is on the computationally demanding segmentation stage, for which we propose a faster and equally accurate template matching approach. The extensions on the algorithm address the important issue of pre-processing that depends on the image database, being mandatory when we have a non infra-red camera, like a typical WebCam. For this scenario, we propose methods for reflection removal and pupil enhancement and isolation. The tests, carried out by our C# application on grayscale CASIA and UBIRIS images show that the template matching segmentation method is more accurate and faster than the previous one, for noisy images. The proposed algorithms are found to be efficient and necessary when we deal with non infra-red images and non uniform illumination.

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