World Academy of Science, Engineering and Technology
International Journal of Electrical and Computer Engineering
Vol:8, No:04, 2014

Effects of Reversible Watermarking on Iris Recognition Performance

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Abstract : Fragile watermarking has been proposed as a means of adding additional security or functionality to biometric systems, particularly for authentication and tamper detection. In this paper we describe an experimental study on the effect of watermarking iris images with a particular class of fragile algorithm, reversible algorithms, and the ability to correctly perform iris recognition. We investigate two scenarios, matching watermarked images to unmodified images, and matching watermarked images to watermarked images. We show that different watermarking schemes give very different results for a given capacity, highlighting the importance of investigation. At high embedding rates most algorithms cause significant reduction in recognition performance. However, in many cases, for low embedding rates, recognition accuracy is improved by the watermarking process.

Keywords : biometrics, iris recognition, reversible watermarking, vision engineering
Conference Title : ICCARVE 2014 : International Conference on Control, Automation, Robotics and Vision Engineering
Conference Location : Paris, France
Conference Dates : April 28-29, 2014