Abstract

This paper introduces an efficient approach to protect the ownership by hiding iris code from iris recognition system into digital image for an authentication purpose using the reversible watermarking scheme. This scheme embeds bookkeeping data of histogram modification and iris code into the first level high frequency sub-bands of images found by Integer Wavelet Transform (IWT) using threshold embedding technique. The watermarked-image carrying iris code is obtained after applying inverse IWT. Simply by reversing the embedding process, the original image and iris code are extracted back from watermarked-image. Authentication is done using the metric called Hamming Distance. Experimental results show that this approach outperforms the prior arts in terms of PSNR. Also, we tested with different attacks on watermarked-image for showing the sustainability of the system.

References

- H. G. Schaathun, "On watermarking/ fingerprinting for copyright protection,"


**Index Terms**

Computer Science  
Pattern Recognition

**Keywords**

Iris Code  Reversible Watermarking  Hamming Distance  Integer Wavelet Transforms  Iris Recognition