Abstract

A novel lossless watermarking image authentication technique is proposed in this paper. The proposed method allows exact recovery of the original information from the image without loss in their quality. For authenticating the information, a well known Elliptic Curve Cryptography (ECC) is utilized. The ECC method authenticates the information by generating signature and signed messages. After the authentication process, the data embedding process is performed, in which the computed information is inserted into the image data. The data embedding process is accomplished by the well known LSB (least significant bit) modification, which embeds the information bits to the image data. Subsequently, the recovery and the verification processes are carried out to find out whether the watermarked image is authenticated or not. The effectiveness of the proposed technique using ECC image authentication along with lossless Least Significant Bit (LSB) data embedding is evaluated. Also, the proposed LWM image authentication technique is compared with the conventional LWM technique. The comparison result shows that our proposed technique can retrieve the image with high PSNR value than the image retrieved by the conventional technique.
Authentication of Images through Lossless Watermarking (LWM) Technique with the aid of Elliptic Curve Cryptography (ECC)

- Todor Todorov, "Spread Spectrum Watermarking Technique for Information
System Securing”, International Journal of Information Theories & Applications, Vol. 11, No. 4, pp. 405-408, 2004

Index Terms

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Image Authentication