Abstract

There are three major requirements for effective steganography: High embedding capacity, imperceptibility and robustness. It is very difficult to maximally satisfy all these requirements simultaneously. Transform domain techniques for steganography have been proved more robust against various attacks such as image filtering, noise, image cropping, compression etc. Using transform domain techniques it is possible to embed a secret message in different frequency bands of the cover. Embedding in the high frequency creates less impact on the perceivability of the media but provides low robustness to different attacks. In contrast, embedding in lower frequencies helps to withstand many attacks but creates perceptible impact on the media. The proposed image steganography scheme is based on transform domain. In the proposed system we have developed a steganography scheme using different wavelets that provide 56.25% of the embedding capacity as well as robustness against the attacks such as image cropping, addition of noise and changing the brightness of the stego. The paper compares steganography schemes that hide secret information into simple orthogonal transforms such as DCT and Walsh domain against their wavelet versions namely DCT Wavelet and Walsh wavelet domain. Our experimental results show that using wavelet transforms for
steganography achieve much better robustness than the normal orthogonal transforms.

References

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Performance Comparison of Simple Orthogonal Transforms and Wavelet Transforms for Image Steganography

Image Processing (IJIP), Volume (4): Issue (4) 444,2009


Index Terms

Computer Science   Image Processing

Keywords

Steganography   Information Hiding   Dct Wavelet   Walsh Wavelet