Blind Watermarking Using Discrete Wavelet Transform Algorithm with Patchwork

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Abstract : This study is about blind watermarking on images with different categories and properties using two algorithms namely, Discrete Wavelet Transform and Patchwork Algorithm. A program is created to perform watermark embedding, extraction and evaluation. The evaluation is based on three watermarking criteria namely: image quality degradation, perceptual transparency and security. Image quality is measured by comparing the original properties with the processed one. Perceptual transparency is measured by a visual inspection on a survey. Security is measured by implementing geometrical and non-geometrical attacks through a pass or fail testing. Values used to measure the following criteria are mostly based on Mean Squared Error (MSE) and Peak Signal to Noise Ratio (PSNR). The results are based on statistical methods used to interpret and collect data such as averaging, z Test and survey. The study concluded that the combined DWT and Patchwork algorithms were less efficient and less capable of watermarking than DWT algorithm only.

Keywords : blind watermarking, discrete wavelet transform algorithm, patchwork algorithm, digital watermark

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