An Efficient Image Watermarking Approach based on Fourier Transform

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Abstract

Currently, inserting of the watermarking information into various multimedia files represent important research area. The objective is to insert the watermark with less perceived distortions in order to achieve copyright protection and authenticity. This paper presents a new image watermarking approach based on Fourier transform and characteristics of vision system. In fact, the proposed approach exploits the areas that produce after applied the Fourier transform on the images in order to select of appropriate coefficients to store the watermark bits. The original image is partitioned into the non-overlapping blocks. Watermark bits are inserted within the selected coefficients of each block depending on certain condition. The performance of the proposed watermarking approach is evaluated in terms of quality and robustness with many of statistical measures. Experimental results illustrate that the proposed approach can be optimal compromise to solve conflict problem between quality and robustness. In addition, the proposed approach exhibit good robustness against different types of attacks such as Gaussian noise, Gamma noise, blurring filtering, and sharpness.
References


Index Terms

Computer Science

Image Processing
Keywords

Digital watermarking, Fourier transform, Color Image.