An Efficient Non-blind Watermarking Scheme for Color Images using Discrete Wavelet Transformation

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Abstract

In this paper we present a new invisible robust non blind watermarking scheme. The proposed scheme embeds the monochrome (logo) watermark into the high and middle {HL, LH, HH} frequency bands of luminance channel of the color image. The Red (R), Green (G) and Blue (B) channels of color image are transformed into Luminance (Y), Intensity (I) and Hue (Q) Channels, the Luminance channel of color image is decomposed using Discrete Wavelet Transformation (DWT), then the high and middle frequency components of this Luminance are used to embed the watermark. To increase the detection speed and efficiency of algorithm, the location of modified high and middle frequency components are stored into key array. Use of this key array improves the speed of the extraction algorithm. The experimental results show that the watermark is robust against different types of attacks like image cropping, image filtering, image Compression and Image transformations. Further, the results show that the performance of our scheme is superior to other similar techniques.

Reference


Index Terms

Computer Science

Security
Key words

Watermarking
DWT

DRM

Copy Right Protection
RGB
YIQ