Histogram Modification and Wavelet Transform for High Performance Watermarking

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Abstract

This paper proposes a reversiblewatermarking technique for natural images.According to the similarity of neighbor coefficients' values in wavelet domain, most differences between two adjacent pixels are close to zero. The histogram is built based on these difference statistics. As more peak points can be used for secret data hiding, the hiding capacity is improved compared with those conventional methods. Moreover, as the differences concentricity around zero is improved, the transparency of the host image can be increased. Experimental results and comparison show that the proposed method has both advantages in hiding capacity and transparency.

Keyword：reversible watermarking, discrete wavelet transform (DWT), Haar wavelet, histogram modulation, sequential recovery