

Abstract

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DCT-Based Digital Image Watermarking Via Image Segmentation Techniques

In recent years, digital watermarking techniques have been proposed to protect the copyright of multimedia data. Different watermarking schemes have been suggested for images. This paper proposes a watermarking algorithm based on image segmentation and Discrete Cosine Transform (DCT). The image is first segmented using Expectation Maximization (EM) algorithm. For each segment, the image segment is subdivided into pixels blocks of size 8 times 8 (64 pixels), and zigzag reordered. The DCT of the block is then computed. Then, a pseudo-random sequence of real numbers is embedded in the DCT domain of each image segment. Different experiments are conducted to show the performance of the scheme under different types of attacks. The results show that our proposed watermark scheme is robust to common signal distortions, including geometric manipulations.