

学术探讨

一种基于VQ的自适应多重水印算法

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摘要 提出一种基于矢量量化和DCT的多重鲁棒性水印算法, 所提算法利用人类HVS及图像特征将不同的水印信号分别嵌入到载体图像的码书和DCT域中, 通过自适应选择嵌入参数, 保证水印算法的不可见性及抗攻击性能。实验结果表明所提水印算法比基于扩频调制的水印算法在抵抗各种信号处理所带来的攻击的鲁棒性方面有较大的改进, 特别在抵抗同谋攻击方面具有较好的鲁棒性。

关键词 [水印](#) [矢量量化](#) [人类视觉系统 \(HVS\)](#) [扩频](#) [鲁棒性](#)

分类号

VQ based adaptive multi-watermark algorithm

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Abstract

In this paper a novel Vector Quantization (VQ) and Discrete Cosine Transform (DCT) based adaptive multi-watermark algorithm was proposed. In proposed work, two different watermarks, which represent the owner of the product, were embedded into the codebook of the image and DCT domains according to Human Visual System (HVS) and image character. By means of adaptively selecting the embedding parameter, the imperceptibility and security on anti attack ability were guaranteed. Experimental results illustrate that the proposed technique provides an improvement over the spread spectrum watermarking technique in terms of robustness for various signal processing attacks, especially in resisting collusion attack.

Key words [watermark](#) [Vector Quantization \(VQ\)](#) [Human Visual System \(HVS\)](#) [Spread Spectrum Technique \(SST\)](#) [robustness](#)

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