

图形、图像、模式识别

一种新的基于块DCT的嵌入式编码算法

陈宁¹, 曹灿云¹, 王延求²

1.中南大学 信息科学与工程学院, 长沙 410083

2.中国人民解放军 91388部队

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摘要 在研究传统的离散余弦变换(DCT)编码算法的基础上,结合嵌入式零树小波(EZW)算法,引入位平面编码思想,提出了一种新的基于块DCT(BDCT)的嵌入式编码算法。该方法充分利用了DCT变换实现简单的特点,通过选择一组阈值,逐个阈值对变换系数进行重要性检查,按照重要性从最重要到最不重要的顺序排序依次对变换系数进行编码输出,这样就使得输出码流具有嵌入的特性,支持渐进传输。对于BDCT存在的块效应,利用块间关系,采用不同强度的滤波方法消除块效应。实验结果表明,该方法在获得较高压缩比的同时,呈现出比较好的图像质量,同时还有效地减少了块效应。

关键词 [离散余弦变换](#) [嵌入性](#) [嵌入式零树小波编码算法](#) [位平面](#)

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New embedded code algorithm based on block-DCT

CHEN Ning¹, CAO Can-yun¹, WANG Yan-qiu²

1.School of Information Science and Engineering, Central South University, Changsha 410083, China

2.Unit 91388 of Chinese PLA

Abstract

Through studying on the traditional DCT algorithm, connecting the EZW algorithm, then bring to the thought of bit-plane, a new embedded algorithm based-on BDCT is presented. This new method uses of the strong point of DCT it transform easily, meanwhile, and chooses a group data of threshold value, which to be used to check the importance of transform coefficient, puts the transform coefficient in order from the most important to the least important, and sends out the coding follow this order, then the output bit stream is embedded, and supports progressively transmit. To the block artifacts of BDCT, to use the relations among the artifacts, this paper adopts the different strength filtering methods to eliminate the block artifacts. The result indicates the method get compression rate at the same time, and presents a good quality of image, and reduces the block artifacts efficiently.

Key words [Discrete Cosine Transform \(DCT\)](#) [embedded](#) [Embedded Zerotree Wavelet \(EZW\)](#) [bit-plane](#)

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通讯作者 陈宁 yuo141424@sina.com

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