

A STUDY ON THE EFFECT OF TRUNCATING THE DISCRETE COSINE TRANSFORM (DCT) COEFFICIENTS FOR IMAGE COMPRESSION

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ABSTRACT

Image compression is essential to reduce the cost of storage and transmission of large image files. Image compression methods are classified into lossy and lossless compression methods. In lossless compression, the image data in the decompressed image is exactly the same as that of the original image, whereas, in the lossy compression, the data in the decompressed image is very close that of the original. For most applications, lossy compression is used. Lossy compression achieves a higher compression than the lossless compression. Discrete Cosine Transform (DCT) is one of the methods used for lossy compression. In DCT, the image is divided into small blocks, usually of 8X8 pixel size, and the DCT transform is applied to that. The transformed image also contains 8X8 coefficients. The information in the first few coefficients carries most information about the image and the remaining carry less information. Therefore, the coefficients that carry the least information can be dropped and the remaining can be stored as a compressed image. This results in the reduction of file size. In this article, an experimental study is made on the image quality of the reconstructed image by truncating a certain number of DCT coefficients.

KEYWORDS: Image Compression, Discrete Cosine Transform, Truncation of DCT

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