

OPTIMUM DCT IMAGE COMPRESSION USING NEURAL NETWORKS ARBITRATION

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ABSTRACT

Image compression using Discrete Cosine Transform (DCT) is one of the simplest commonly used compression methods. The quality of compressed images, however, is marginally reduced at higher compression ratios due to the loss nature of DCT compression, thus, the need for finding an optimum DCT compression ratio. An ideal image compression system must yield high quality compressed images with good compression ratio, while maintaining minimum time cost. Neural networks perform well in simulating non-linear relationships. This paper suggests that a neural network could be trained to recognize an optimum ratio for DCT compression of an image upon presenting the image to the network. The neural network associates the image intensity with its compression ratios in search for an optimum ratio. Experimental results suggest that a trained neural network can simulate such non-linear relationship and thus can be successfully used an “intelligent optimum image compression system”.

KEYWORDS: Optimum DCT Image Compression, Neural Networks Arbitration, Discrete Cosine Transform (DCT)