

## University of Baghdad

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| Abstract                         | <p>The discrete cosine transform (DCT) is a method for converting a signal into plain frequency components. It is extensively used in image compression. In this paper a new technique is proposed, namely ZRDCT (Zeros Removal with DCT) which is based on a lossy compression, and used to enhance image data compression. Image quality is measured impartially, using peak signal-to-noise ratio (PSNR) or picture quality scale, and individually using perceived image quality with compression factor (CF) being the main theme of this paper, taking into consideration the preservation of well PSNR outputs. The performance of DCT compression generally degrades low bit-rates mainly because of the underlying block-based DCT scheme. Experimental results demonstrated the effectiveness of the ZRDCT approach, which enhanced the performance of the conventional DCT image compression methods, by investigating and interrogating the whole image and hence enforcing mechanisms for finding possible redundant information and therefore the removal of unnecessary data which lead to an improvement in CF without upsetting PSNR.</p> <p>The new technique also proved to have low distortions with good quality PSNR, commendable CF and good execution time, when compared to other various DCT schemes and with some wavelet based image compression.</p> <p><i>Keywords: Discrete Cosine Transform, Image Compression, Peak Signal-to-Noise Ratio, Compression Factor.</i></p> |                                |  |