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Objective Evaluation on Medical Image Compression Using Wavelet Transformation

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Abstract : The use of computers for handling image data in the healthcare is growing. However, the amount of data produced by modern image generating techniques is vast. This data might be a problem from a storage point of view or when the data is sent over a network. This paper using wavelet transform technique for medical images compression. MATLAB program, are designed to evaluate medical images storage and transmission time problem at Sebha Medical Center Libya. In this paper, three different Computed Tomography images which are abdomen, brain and chest have been selected and compressed using wavelet transform. Objective evaluation has been performed to measure the quality of the compressed images. For this evaluation, the results show that the Peak Signal to Noise Ratio (PSNR) which indicates the quality of the compressed image is ranging from (25.89db to 34.35db for abdomen images, 23.26db to 33.3db for brain images and 25.5db to 36.11db for chest images. These values shows that the compression ratio is nearly to 30:1 is acceptable.

Keywords : medical image, Matlab, image compression, wavelet's, objective evaluation
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