Image Compression Using Wavelet Transform

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Abstrak

Visual communications services are now making a significant impact on modern society. Videoconferencing, HDTV and Multimedia are just examples where this technology is being used to good effect. Communicating using video signals does, however, require a large volume of data to be transmitted, and even with modern high-bandwidth communication links this can be expensive. This requires the implementation of efficient image or video coding and compression schemes. This paper presents image compression schemes using wavelet transform. This paper also highlights the importance of the four most desirable characteristics for use in digital signal processing, namely orthonormality, compactness, regularity or smoothness and symmetry or anti-symmetry. Some of these characteristics are mutually exclusive and require design compromise. From the simulation results it can be seen that for equal total length of the analysis (decomposition) and synthesis (reconstruction) filters, biorthonormal wavelets performs much better than the ortlionormal wavelet (i.e. asymmetrical wavelets). This performance is not only in terms of a higher WPSNR but also in terms of the quality of reconstructed image.