Abstract

Compressive sensing (CS) provides a mathematical framework for utilizing the potentiality of sparse nature of the commonly used signals and has been the subject of scientific research in recent years. CS involves the compression of the data at the first step of image acquisition. This paper presents an image compression algorithm based on DCT based CS and Vector Quantization (VQ). It has been observed from the implementation of the Proposed CS-VQ algorithm that the proposed algorithm gives better PSNR and visual quality when compared with the existing CS-VQ algorithm. The results obtained are even comparable with JPEG algorithm but only when small queue size is considered. The basic concept behind the CS states that small collections of non-adaptive linear projections of a sparse signal can efficiently help in the reconstruction of the image through the image data sent to the decoder making use of some optimization procedure.

References


Index Terms

Computer Science  
Signal Processing

Keywords

Image Compression  
Discrete Cosine Transform (DCT)  
Discrete Wavelet Transform (DWT)  
Huffman Coding
Image pre-processing

Remote Sensing