Abstract

This paper proposes a method for the compression of color images by Haar transform, quantization and construction of minimum redundancy code using conventional Huffman coding. Wavelet compression is accomplished by decomposing the row and column of the image matrix using the Harr transform. And the reconstruction of the image is feasible just from 1/4th of the decomposed image and even 1/16th of the decomposed image is enough for re-construction and the quality relies on the nature the image. A fast and effective histogram-based quantization is applied to the decomposed image. The weighted minmax quantization incorporates activity weighting, whereby obtaining high quality quantized image with significantly less visual distortion. Partition based Huffman coding divides symbols based on sorted probabilities of symbols into two equal halves and generates codes for each portioned symbols. Analytical and experimental results suggest that the optimum code can be generated for images with balanced binary partition Huffman coding, which is not only decodable but also offers the possibility of realizing an average code-word length that can be made arbitrarily close
to the source entropy.

Reference

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Index Terms

Computer Science Image Analysis

Key words

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