Abstract

Since the development of internet and multimedia, image compression is emerging in all the fields like pattern recognition, image processing, system modeling, data mining, etc. Compression techniques have become the most concentrated area in the fields of computer. Image compression is a technique of efficiently coding digital image to reduce the number of
bits required in representing an image. Many image compression techniques presently exist for
the compression of different types of images. In this paper, Vector Quantization based
compression technique is established with Modified Fuzzy Possibilistic C-Means (MFPCM) with
repulsion. Repulsion technique aims to reduce the intra-cluster distances and also increases the
inter-cluster distances. The residual codebook is used in this proposed approach which
eliminates the distortion in the reconstructed image and thus enhancing the image quality.
Moreover, the proposed technique replaces LBG algorithm with the modified fuzzy possibilistic
c-means algorithm in the codebook generation. Experimental results on standard image Lena
show that the proposed scheme can give a reconstructed image with higher PSNR value than
the existing image compression techniques.

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An Enhanced Vector Quantization Method for Image Compression with Modified Fuzzy Possibilistic C-Means


Index Terms

Computer Science                Image Processing

Key words

Image compression                Vector Quantization                Residual
Codebook

Modified Fuzzy Possibilistic C-Means

Repulsion