Abstract

Our proposed method is a two phase scheme that enhances the performance of K-means vector quantization algorithm for compressing images. In the proposed method, we have explored the possibility of application of statistical parameters for choosing the initial seeds for K-means algorithm. The selection of initial seeds depends on the statistical features of input
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data set. The novelty in our approach is the judicious selection of initial seeds based on variance, mean, median and mode parameters. Considering mode value of each dimension of the data adds uniqueness to our method. Our approach shows better performance yielding good PSNR and variable bit rate at a very low time complexity. This method is best suited for online web applications that involve massive and rapid image and video transmission.

Reference

- Ball, G.H. and D.J. Hall, 1967. PROMENADE-an online pattern recognition system, Stanford Research Inst. Memo, Stanford University

Index Terms
Key words

Vector Quantization

K-means

variance

mode

Break Even Point

Rate-distortion