



International Journal on Recent Researches In Science, Engineering & Technology

A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy.

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Research Paper

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ISSN (Print) : 2347-6729

ISSN (Online) : 2348-3105

Volume 2, Issue 4,

April 2014

DIIF IF :1.46

SJIF IF: 1.329

Transformed vector Quantization Based on Orthogonal Polynomials

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Abstract - Literature review revealed a new Transformed Vector Quantization (TVQ) that combines the features of transform coding and vector quantization . The proposed transform coding is based on a set of orthogonal polynomials . We have proposed a code book with LBG algorithm that utilizes only few transformed coefficients due to the proposed transformation . Training vectors are then formed as a subset from the image data in frequency domain and is compared with a code book , to result in the index position of the code book and sent to the decoder after entropy coding . The decoder has the code book identical to the encoder and decoder mechanism is a simple table look up process with additional null values added to the high frequency samples . These coefficients are subjected to inverse transform with the help of basis functions of the proposed orthogonal polynomials to get back the decompressed image . Experimental results shows that the scheme could render better reconstructed quality with efficiency in the code book design and reduced searching time in look- up process of decoding .