

IMAGE COMPRESSION USING TWO ORTHOGONAL TRANSFORMS

AJIT DANTI¹ AND G. R. MANJULA²

¹Department of Master of computer Applications
JNN College of Engineering, Shimoga, Karnataka, India

²Department of Computer Science and Engineering
JNN College of Engineering, Shimoga, Karnataka, India

Abstract

The hybrid wavelet transforms generation technique using two orthogonal transforms. The orthogonal transforms are used for analysis of global properties of the data into frequency domain. To study local properties of data we use wavelet transform, where the mother wavelet function gives the global properties of the signal and wavelet basis functions which are compressed versions of mother wavelet are used to study the local properties of the signal. Here hybrid wavelet transform is generated using two orthogonal transform to utilize both global and local properties of the signal. The worth of hybrid wavelet transforms for the image compression which can further be extended to other image processing applications like steganography, biometric identification, content based image retrieval etc. Here the hybrid wavelet transforms are generated using four orthogonal transforms those are Discrete Cosine transform (DCT), Discrete Haar transform (DHT), Discrete Walsh transform (DWT) and Discrete Kekre transform (DKT). The comparison of the hybrid wavelet transforms is also done with the original orthogonal transforms. The experimentation results have shown that the hybrid transform wavelets have given better quality of image compression than the respective original orthogonal transforms.

Keywords: Image Compression, Walsh transform, Orthogonal transform.