Abstract

With the advancement in the video compression and internet technology, the application of video streaming has increased. Because of different types of devices used for accessing the video application and the heterogeneous nature of the network the scalable video coding has become important in order to fulfill the needs of the user. Discrete wavelet transform (DWT) is best tool for scalable video coding because of its property of multiresolution. The coding and display order of pictures in H. 264/MPEG4-AVC is completely decoupled and any picture can be marked as reference picture and is used for prediction of following picture independent of corresponding slice type. A wavelet based hierarchical coding structure has been proposed which selects best matched reference frame for the current frame to be encoded based on the mean square error (MSE) in the group of picture(GOP). The scalable encoding of hierarchical prediction has also been exploited. This algorithm has been compared with the performance of traditional multiresolution motion estimation technique based on peak signal to noise ratio. The proposed algorithm show an improvement of 13% in PSNR value over the traditional MRME technique.
Hierarchical Coding Structure for Video Coding and its Applicability in Scalable Video Coding

References


Index Terms

Computer Science

Image Processing

Keywords
Discrete wavelet transform  video compression  hierarchical coding  scalable

PSNR