

Adaptive Prediction Based Lossless Compression of Color Mosaic Image for Progressive Video Transmission

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Video transmission is a vital area in the era of communication. Video are of huge in size comparing to text data, video transmission takes larger bandwidth of the communication channel. Since channel capacity is limited the video transmission takes longer time. Thus video compression becomes an essential solution. Considering these factors this paper propose a way by which video is converted as a series of mosaic images and compressed for transmission.

The entire process can be given in few steps. Initially the RGB color video frames are converted into mosaic images according to Bayer Pattern. The mosaic image is one third of the size of RGB color image. Then the mosaic image is transformed to reduce the bits required to store the data. Two transformations are applied to this mosaic image. Firstly the 5/3 integer wavelet transformation (IWT) is applied to the mosaic image. Since the same color components are interleaved 5/3 IWT is used. Secondly the adaptive prediction is applied to get the predicted residue. Finally the transformed mosaic image is compressed using Golomb Rice Code which is suitable for progressive transmission.