Abstract

This paper presents a new approach for compression of medical images with MFHWT (Modified Fast Haar Wavelet Transform) and SPIHT (Set Partitioning In Hierarchical Trees). It provides high compression ratio with high picture quality. The Modified Fast Haar Wavelet Transform is used to decompose the image at different frequency levels. It has high multi-resolution characteristics. The CR (compression ratio) of proposed method is better than existing method (SPIHT). Medical images have a number of regions where intensity is changing slowly or even have a constant value. Such regions are compressed with higher compression ratio. In medical applications image distortion is not acceptable. So the quality of the images is also improved in proposed method in terms of PSNR (Peak Signal to Noise Ratio).

References

- Darius Mateika, Romanas Martavius, analysis of the compression ratio and quality in medical images; Department of Electronic Systems, Vilnius Gediminas Technical University Naugarduko 41, LT-03227 Vilnius, Lithuania, 2006, Vol. 35, No. 4
- Phang Chang and Phang Piau; Modified fast and Exact Algorithm for Fast Haar Transform; World Academy of Science, Engineering and Technology, 2007.
- U. S Ragupathy, D. Baskar, A. Tamilarasi, New Method of Image Compression Using Multiwavelets and Set Partitioning Algorithm; on the third international conference on industrial and information systems, Kharagpur, IEEE 2008
- B. Vijaya Lakshmi and Dr. M. Mathirajan; Reduce Memory Requirements by Handling Efficient; on International Conference of Signal and Image Processing, dec 2010
- Samsul Ariffin Abdul Karim, Bakri Abdul Karim; Wavelet Transform and Fast Fourier Transform for signal Compression (A Comparative Study); on international Conference on Electronic Devices, Systems and Applications (ICEDSA) in 2011.

Index Terms

Computer Science

Signal Processing

Keywords
Enhancement of Compression Ratio and Image Quality using ISPIHT with MFHWT

<table>
<thead>
<tr>
<th>Compression Ratio</th>
<th>Haar Wavelet Transform (HWT)</th>
<th>Image Quality</th>
<th>Modified Fast Haar wavelet transform</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PSNR

SPIHT