A New Adaptive Medical Image Coding with Orthogonal Polynomials

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Abstract

In this paper, new adaptive medical image coding technique based orthogonal polynomials transformation is proposed. The input image is first applied with the proposed orthogonal polynomials based modified zero crossing algorithm for edge detection since it is not sensitive to noise and surface irregularities. Then the scan filling algorithm is used to separate the foreground that contains the most important information of medical image from the background region. The orthogonal polynomials based transform coding technique is applied on foreground region for lossless encoding and on background region for lossy encoding. The proposed work uses variable quantization to maintain different quality levels for entire image coding and preserve the most important features that contained in the foreground region of medical image. The experiment results of the proposed technique shows that a higher compression ratio is achieved for coding of medical images with lower computational complexity when compared with existing techniques.

References


Index Terms

Computer Science  Image Processing

Keywords

Edge Segmentation  Scan Filling Algorithm  Orthogonal Polynomials Based Transform Coding