Abstract

The Electrocardiogram signals are a very valuable source of data for physicians in diagnosing heart abnormalities. In this paper, we present an efficient technique for compression of electrocardiogram (ECG) signals. A new thresholding method based on the three level of quantization is proposed for encoding samples using an Embedded Zero-tree Wavelet (EZW) and Huffman algorithms. The modified encoding algorithm allows an optimal data compression for a target bit rate and appeared superior to other wavelet-based ECG coders. Also, to improve the efficiency of the proposed method we propose to use different types of wavelet and compare their performances for compression of the ECG signals. Experimental results show that the proposed method has a good performance and less complexity for compression of ECG database from MIT-BIH database different types of wavelet transform.

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ECG Compression using the Three-Level Quantization and Wavelet Transform


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Index Terms

   Computer Science       Signal Processing

Keywords

   Discrete Wavelet Transform (DWT)      EZW      Huffman Coding      Three-Level
   Quantization
