

ARRHYTHMIA DETECTION USING ECG FEATURE EXTRACTION AND WAVELET TRANSFORM

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ABSTRACT

Cardiac Arrhythmia is the most common cause of death. These abnormalities of heart may cause sudden cardiac arrest or cause damage of heart. The early detection of arrhythmia is very important for the cardiac patients. Electrocardiogram (ECG) feature extraction system has been developed and evaluated based on the multi-resolution wavelet transform. ECG feature extraction plays a significant role in diagnosing most of the cardiac disease. One cardiac cycle in an ECG signal consist of the P-QRS-T waves. This feature extraction scheme determines the amplitudes and interval in the ECG signal for subsequent analysis. The amplitude and interval of P-QRS-T segment determine the function of heart. The ECG signal will be de-noised by removing the corresponding wavelet coefficients at higher scales. Then, QRS complexes are detected and each complex is use to locate the peaks of the individual waves, R-R interval which are present in one cardiac cycle and evaluated the algorithm on MIT-BIH Database, the manually annotated database, for validation purpose.

KEYWORDS: Cardiac Arrhythmia, P-QRS-T Segment, MIT-BIH Database