CLASSIFICATION OF ARRHYTHMIA FROM ANALYSIS OF THE ECG SIGNAL

RANJANA RAUT AND S. V. DUDUL

Abstract

This paper presents a comparison between two quite promising ECG characteristic points detection algorithms. Both of these algorithms can distinguish the QRS complex from high P or T waves. The combination of the filtering and recognition by artificial neural network (ANN) model with adaptive filter is used. Although Wavelet Transform (WT) ensures good results and no better transformation algorithm is known, the adaptive neural network overtakes its performance. Experiments focus on main topics in the field of ECG preprocessing (denoising), parameter extraction (recognition of waveforms, durations and segments computation) and application of artificial neural network models for classification of arrhythmia. By combining WT and adaptive algorithm and ANN techniques, a reliable automatic ECG diagnosis system is proposed. Subsequently, ECGs are classified according to features extracted from these events using ANN. Non stationary signals such as ECG are analyzed for arrhythmias detection and classification with reliable performance.