Abstract

FCM algorithm is used to divide the ECG signal into QRS and non-QRS region. This paper presents a simple technique for automatic detection of cardiac beat (QRS-complex) in Electrocardiogram (ECG) using Fuzzy C-Means (FCM) clustering algorithm. The power line interference and baseline wander present in the ECG signal is removed using digital filtering.
Development of derivative based algorithm for the detection of QRS-complexes in Single lead Electrocardiogram using FCM techniques. Absolute derivative of the filtered ECG signal is calculated to enhance the QRS-complexes in the ECG signal. Algorithm performance is validated using original single lead ECG recordings from the CSE ECG database. Detection rate of 98.32% with 1.68% of false negative (FN) and 0.08% of false positive (FP) has been achieved.

Reference

- J. L. Willems, P. Arnaud, J. H. Van Bemmel, P. J. Bourdillon, R. Degani, B. Denis, I.


Index Terms

Computer Science

Information

Technology

Key words

ECG

QRS-complex

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FCM
Development of derivative based algorithm for the detection of QRS-complexes in Single lead Electrocardiogram