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(57) Abstract :

The present disclosure relates to a system and method in the field of medical science. More specifically, the invention is directed to a system that detects an automatic premature ventricular contraction (PVC) using a machine learning algorithm. The PVC beat classification is proposed for detecting ventricular arrhythmia. ECG arrhythmia records are considered from MIT-BIH AD and denoised by using the discrete wavelet transform (DWT). Thereafter, a two-stage median filter is used to eliminate the baseline wander to obtain the clean and smooth ECG signal. The proposed method calculates the statistical features of extracted QRS complex segment of both PVCs and normal beats. KNN and SVM algorithms are used for the performance evaluation of the proposed method. The results obtained have shown that the PVCs classification method is highly accurate and reliable, and can be used for automatic classification of arrhythmia.

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