عنوان مقاله:

Chaotic and nonlinear analysis of ECG signal to detect PVCarrhythmia

محل انتشار:

سومین کنفرانس پژوهشی های کاربردی در مهندسی برق (سال: 1401)

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خلاصه مقاله:

Early diagnosis of heart disease plays an important role in treating the disease and preventing its dangerousconsequences. One of the most common cardiac arrhythmias is premature ventricular contraction (PVC). In thisresearch, using the extraction of chaotic characteristics of the ECG signal, ventricular premature contraction arrhythmiahas been detected. Four important characteristics of chaotic systems used in this article are fractal dimension, Lyapunovexponent, correlation dimension and approximate entropy. Two supervised and unsupervised methods are used to detectarrhythmia. The nearest neighbor method was used as a supervised method for classification and the results were ۹۳.۰۱%accuracy and ۹۰.۰۱% precision. The second method is known as K-Means .and was used as an unsupervised method forclustering and the results were ۷۹.۰۶% accuracy and ۷۸.۷۸% precision

کلمات کلیدی:

Electrocardiogram, premature ventricular contraction (PVC), Chaos, KNN, K-Means