

عنوان مقاله:

Classification of ECG Arrhythmias Using Adaptive Neuro-Fuzzy Inference System and Cuckoo Optimization Algorithm

محل انتشار:

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نویسندگان:

Abolfazl Ebrahimi - Department of Electrical Engineering, Sirjan Branch Islamic Azad University, Sirjan, Iran

Jalil Addeh - Bargh Gostar Baharan Golestan Corporation, Gonbad Kavus, Iran

خلاصه مقاله:

Accurate and computationally efficient means of classifying electrocardiography arrhythmias has been the subject of considerable research effort in recent years. This paper presents a hybrid method for automated diagnostic systems of electrocardiography arrhythmias. The proposed method includes three main modules including the denoising module, the classifier module and the optimization module. In the denoising module, the stationary wavelet transform is proposed for noise reduction of the electrocardiogram signals. In the classifier module, the adaptive neuro-fuzzy inference system is investigated. In adaptive neuro-fuzzy inference system (ANFIS) training, the vector of radius has an important role for its recognition accuracy. Furthermore, in the optimization module, the cuckoo optimization algorithm is proposed for finding optimum vector of radius. In the test stage, 3-fold cross validation method has been applied to the MIT-BIH arrhythmia database for evaluating the capability of the proposed method. The simulation results show that the proposed method has high recognition accuracy.

کلمات کلیدی:

Adaptive neuro-fuzzy inference system, Cuckoo optimization algorithm, Electrocardiography, Wavelet transform

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