Abstract

This paper describes an Intelligent Diagnosis System using Hybrid approach of Adaptive Neuro-Fuzzy Inference System (ANFIS) model for classification of Electrocardiogram (ECG) signals, and comparison this Technique with Feed-Forward Neural Network (FFNN), and Fuzzy Inference Systems (FIS). Feature extraction using Independent Component Analysis (ICA) and power spectrum, together with the RR interval then serve as input feature vector, this feature were used as input of FFNN, FIS, and ANFIS classifiers. six types of ECG signals they are Normal Sinus Rhythm (NSR), Premature Ventricular Contraction (PVC), Atrial Premature Contraction (APC), Ventricular Tachycardia (VT), Ventricular Fibrillation (VF) and Supraventricular Tachycardia (SVT). The results indicate a high level of efficient, the proposed method outperforms the other methods with an impressive accuracy of 97.1%, As for other methods FFNN, FIS results were respectively 94.3%, 95.7%.

Reference


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Classification of Cardiac Arrhythmia Based on Hybrid System


Index Terms

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Key words

ANFIS
adaptive neuro
fuzzy inference system
ECG
ICA
Power Spectral
RR-interval