

ABSTRACT

The heart is the most important organ in the human body and is very well taken care of so that the condition of the heart remains good. The emergence of abnormalities in the heart can be fatal for the patient. The rate of death from heart defects or disease is very high and is also increasing. One way to detect heart abnormalities is an electrocardiogram (EKG) signal examination. To analyze the results of the ECG required a classification method and identify cardiac abnormalities based on ECG signal data.

In this study, a method for the classification of ECG signals using FdispEn (Fluctuation-based dispersion Entropy) is proposed. FdispEn measures the uncertainty in the signal and is expected to be able to distinguish the physiological state from the time series of the ECG signal. In this study, FdispEn and statistical computing were used as feature extraction of the ECG signal and combined with the Support Vector Machine (SVM) for the classification process of Normal ECG, AFIB (Atrial Fibrillation), and CHF (Congestive Heart Failure).

The result of this final project is that training and testing of the 3 characteristics is carried out including the FdispEn characteristics, statistical characteristics, and the combined characteristics of these 2 characteristics. The results obtained in testing the combined characteristics of FdispEn and statistical characteristics with the SVM classification can provide an accuracy of 91,5%. The system proposed in this study is expected to assist in the clinical diagnosis of abnormalities in the heart.

Keywords: *Cardiac Abnormalities, Electrocardiogram, Fluctuation-based Dispersion Entropy, Support Vector Machine.*