

ABSTRACT

The heart is a vital organ, therefore the heart is required to be in good health on the body so that the system needs to run properly. Electrocardiogram (ECG) signal is generated from the electrical activity of the heart by placing electrodes on the body. For the introduction of heart rate, it takes a computer - based system to identify and classify the illness that is useful for the diagnosis and treatment of patients. It is necessary to model the ECG signal in some conditions to diagnose the heart disease.

In this research, ECG feature extraction using Stockwell Transform and used as a comparison Short Time Fourier Transform (STFT), while for classification using the k- nearest neighbor (k - nn). Intake characteristics is based on the value of the maximum and minimum each segment. S transform is a time - frequency representation of a signal. One advantage of this transformation is its ability to improve the resolution in the time domain by selecting the gaussian width of the right window. ECG signals are modeled include the heartbeat signal Atrial fibrillation (AF), Normal Sinus Rhythme (NSR), ventricular Tachicardia (Vtach), ventricular fibrillation (Vfib), Premtur Ventricular Contraction (PVC).

The system is able to produce an accuracy value of the ECG signal measurement method and Euclidean Distance City block similarities with k - value = 3, amounting to 76.67% based on the minimum value and a maximum value of 56.67% based on the algorithm S Transforms. As for the STFT obtained an accuracy of 70% and 56.67%.

Keyword : Electrocardiogram, Stockwell Transform, Short Term Fourier Transform, k-nearest neighbor, Gaussian window, euclidean distance, cityblock.