

ABSTRACT

Ventricular Tachyarrhythmia is one type of arrhythmia disease that has a heartbeat rhythm becomes faster resulting in abnormalities in the heart's ventricle. In the world of health, ventricular tachyarrhythmia can be known to someone from the examination of a medical device that is electrocardiogram (ECG). In general, ventricular tachyarrhythmia detection may also be performed by extracting ECG signal characteristics as well as classification. In this study, the author uses median filter method in Preprocessing, Principal Component Analysis (PCA) technique in characteristic extraction of heart signal and modified backpropagation (MBP) that Levenberg Marquardt as classification. The Principal Component Analysis (PCA) method is used to reduce the sample feature size in order to extract complex QRS waves (characteristic of VT disease) by sampling over the limit $> 200 \parallel < -200$. While the Levenberg Marquardt's algorithm is used to speed up the training process. Based on the research that has been done using all the above method, obtained the best accuracy result that 93.06% when using PCA+MBP method with the best parameters that principal component=10, hidden neuron=5 and value of $\mu = 0.0016$ as well training time 1 seconds.

Keywords : Elektrokardiogram, Levenberg Marquardt's Backpropagation, Median filter, Principal Component Analysis, and Ventricular Tachyarrhythmia.