Abstract

Coronary Artery Disease (CAD) is one of the most deadly types of heart disease in the world. CAD is triggered by narrowing or blockage of the coronary arteries by plaque. CAD can lead to a more dangerous disease, Myocardial Infarction (MI) or better known as a heart attack. A heart attack occurs when blood flow to the heart stops completely, causing damage to the heart muscles due to lack of oxygen supply to the heart muscles. Phono-cardiogram (PCG) is one type of signal that is commonly used to detect cardiovascular disease. There have been many studies related to cardiovascular disease detection based on PCG signals. However, studies related to MI detection are still rare. Generally, MI detection procedures must go through various laboratory tests which are quite long while patients need fast and accurate treatment. To overcome this problem, in this study, a model was built to detect MI. There are several feature extraction methods used, such as Mel-Frequency Cepstral Coefficients, Energy Entropy and Discrete Wavelet Transform. By using bagging, boosting and stacking technique as classifier, the highest specificity, sensitivity and accuracy from the experiment are 99.28%, 99.64% and 99.64% respectively.

Keywords: textitmyocardial infarction, *phonocardiogram, ensemble learning*