Abstract

Valvular Heart Disease (VHD) is a type of heart disease that is triggered by a failure or abnormality in one or more of the four heart valves which results in difficulty in circulating blood between the chambers or blood vessels of the heart. In recent years, many methods have been proposed to detect occurrence of VHD. With advances in technology, to detect these abnormalities can utilize telemedicine technology. The detection method in this paper analyzes the PCG signal (Phonocardiogram) from the patient. The performance value obtained from the detection process is strongly influenced by the algorithm at the feature extraction stage and the feature selection method. Therefore, the selection of the right feature extraction and feature selection method is important. Of the many literatures that propose detection of VHD with the application of feature extraction methods, the average performance obtained is still low. To solve the above problems, this research proposes the development of a feature extraction algorithm that supports the improvement of VHD detection accuracy. In addition, prototypes based on the proposed algorithms and methods were also developed. This research also analyzes the accuracy of the proposed prototype detection. The methods used in this research are 1. Literature *Abstract* study on VHD detection, 2. Development of feature extraction algorithms methods, 3. Performance testing and analysis. The performance test results show that the proposed algorithm has achieved an average accuracy of 99%, sensitivity of 100% and specificity of 97%.

Keywords—VHD, Feature Extraction, PCG