

## Abstract

Arrhythmia is a symptom of heart disease that can harm an individual's body because of an abnormal heart rhythm. One of arrhythmia is Premature Ventricular Contraction (PVC) where the risk of the arrhythmia will be fatal if no further treatment is done. PVC patient can be diagnosed using an electrocardiogram (ECG) to see an abnormal heartbeat. There are 3 processes to detect PVC, and those are preprocessing, feature extraction and classification of the ECG signal data. RR-Interval and QRS-Width detection algorithms are used to distinguish between a normal heartbeat and a PVC. The normal heartbeat and the PVC beat that made a pattern can be further classified as Bigeminy and Trigeminy. Results for the efficiency of the detection algorithm based of RR-Interval and QRS-Width for detecting general heartbeats is acquired to be 94,11% and the efficiency of the PVC detection is 76,28%. The detection process based on the PVC Bigemini and Trigemini PVC patterns as well as the PVC itself is carried out based on the complete information provided by the MIT-BIH Arrhythmia Database for valid results from the evaluations obtained.

**Keywords:** Premature Ventricular Cotractions, Electrocardiogram, Classification, Bigeminy, Trigeminy.