ABSTRACT

The heart is a vital human organ that has the function of eliminating blood throughout the body. One of the common heart diseases that occur in humans is arrhythmia. Cardiac arrhythmia, also known as abnormal heart rhythm, is a disorder of the heart's rhythm pattern. Arrhythmia causes the heart to not be able to work optimally so that it can cause chest aches and pains. In previous studies, Arrhythmia detection has been successfully carried out using the ANN classification method. However, the data training process with the ANN method takes a long time. To overcome this, DNN is known as a classification method that offers high accuracy with a shorter training process time.

Therefore, in this study an Arrhythmia detection system will be designed using the development of the Deep Neural Network (DNN) algorithm which supports increasing the accuracy of Arrhythmia classification by classifying ECG signals. In this study using a dataset from DataHub.io with a total of 444 data.

In this Final Project, the dataset obtained from DataHub.io is divided into two classes. Then several test scenarios will be carried out to find the best hyperparameter. The accuracy obtained when using the best hyperparameters obtains an accuracy validation of 71,91% and a loss validation of 0.6647.

Keywords : Arrhythmia, Deep Neural Network (DNN), Electrocardiogram (EKG)