

## ABSTRACT

*Influenza (flu) is a type of disease that is quite common in human life. In this final project, an alternative that is fast in predicting influenza symptoms is tried, namely by utilizing machine learning technology on realtime data using a wearable device as a watch. The subject parameters used in this study consisted of 3 subjects, while the object parameters used in this study consisted of 3 parameters, namely heart rate, footsteps, and resting heart rate, but only the heart rate parameter was entered in machine learning. patterns will be searched with descriptive statistical graphs. The method built in this study is Backpropagation as a feature selection for predicting heart rate values in the future, which will be combined with the Support Vector Machine method as a classification. The results of this study indicate that the trial subject 1 has an accuracy of 80% with the RBF kernel with  $C=100$ ,  $\text{Gamma}='Scale'$  and  $\text{Degree}=2$ , subject 2 has the best accuracy of 60% using the RBF kernel with  $C=100$ ,  $\text{Gamma}='Scale'$  and  $\text{Degree}=2$ , while subject 3 has the best accuracy of 78% with Polynomial kernel with  $C=100$ ,  $\text{Gamma}='Scale'$  and  $\text{Degree}=2$ . As for the backpropagation algorithm, the loss function metric value of MAE between subjects 1, 2, 3 is not too much different.*

*Keywords: Heart Rate, Footsteps, Resting Heart Rate, Backpropagation, Support Vector Machine, Influenza*