

Abstract

One of the impacts of Covid-19 is the delay of basketball sports competitions. This of course has an impact on the athlete's fitness and the athlete's ability to play, especially for shooting techniques. One of the technologies of the industrial revolution 4.0, namely the Internet of Things (IoT) is expected to be a solution. In this final project, the author design and build a smart watch prototype that aims to classify the basketball shooting technique as right or wrong. In general, the way the system works is that the MPU6050 sensor will take gyroscope data in the form of X, Y, and Z movements, and accelerometer data in the form of acceleration of hand movements. Then the data will be sent to the internet with the help of ESP8266. Prior to classification, feature extraction is performed to generate 18 new features from 3 axes on each sensor data, with each axis being extracted into 3 features. Then, the correct or incorrect classification of the shooting technique was carried out using the Support-Vector-Machine (SVM) method. Based on the results of the analysis of the use of the Max, Average, and Variance features in the SVM classification with a polynomial kernel, it can produce an accuracy of 94.4%.

Keywords: basketball, shooting, gyroscope, accelerometer, SVM
