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A Review on Predictive Model for Heart Disease using Wearable Devices Datasets

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Abstract

Heart diseases were the number one killer in Malaysia based on the data from the Department of Statistics Malaysia in the previous year. The number of cases has been increasing from 2156 in 2020 to 2693 in 2021. There were lots of studies that had been done in discovering the factors that cause heart disease and ways to prevent it. Among the ways to prevent heart disease include analysis on the patients' historical data, developing predictive modeling involving statistical and machine learning techniques and monitoring health conditions through wearable devices. This paper reviewed the predictive model that had been applied in heart disease prediction by using wearable devices datasets. Artificial neural networks (ANN) have grown in popularity in data mining and machine learning for its ability to classify input data into several categories by detecting hidden connections in the data, which is beneficial in predicting correct classifications. Other approaches, such as Naive Bayes, neural networks, and Decision Tree algorithms, are used to analyze medical data sets to forecast cardiac disease. Based on the degree of accuracy, Naive Bayes looks to be the most successful model for predicting heart disease patients, followed by Neural Network and Decision Trees.

Keywords: Heart disease; Machine learning; Predictive modeling; Wearable devices.