ABSTRACT

E-POSYANDU WEBSITE DEVELOPMENT: MACHINE LEARNING APPROACH WITH KNN ALGORITHM FOR STUNTING DETECTION IN CHILDREN UNDER FIVE YEARS OLD

By
Rendi Putra Pradana
20104079

Stunting is a serious problem in children's growth and development, which can negatively affect their health and quality of life in the future. The use of information technology and machine learning can make an important contribution to addressing this problem. This research aims to develop an E-Posyandu website that utilizes a machine learning approach with the K-Nearest Neighbors (KNN) algorithm for stunting detection in children under five. In this study, researchers designed and developed a prototype E-Posyandu website that allows for electronic recording of posyandu activities. Furthermore, researchers trained the KNN machine learning model using anthropometric data of children under five. The model is integrated with the E-Posyandu website which is used to perform stunting detection based on anthropometric data input by posyandu cadres. Blackbox trials were conducted to evaluate the performance and effectiveness of the E-Posyandu website prototype and the accuracy of stunting detection performed by the KNN model. The optimal predictive model obtained from a series of training and evaluation using a training and test data distribution of 80:20 has been successfully trained by recording an accuracy rate of 99.904%, precision of 99.871%, recall of 99.877%, and f1-score of 99.874% with 96799 training data and 24200 test data.

Keywords: Website* E-Posyandu, Stunting, KNN, *Machine Learning