

ABSTRACT

Stunting is a condition of failure to thrive in children due to chronic malnutrition that lasts for a long time and impacts on the physical growth and cognitive development of children. In Indonesia, the prevalence of stunting is still relatively high, at 15.8% in 2024, greater than the national target of 14.8% in 2025. Stunting detection is generally still done manually through height and weight measurements, which are at risk of recording and interpretation errors. This research aims to develop a prediction of height and weight in children based on images using MobileNetV2. The system is designed to receive input in the form of photos of children's bodies from the front view, age, weight, and height, which are then analyzed using an efficient model that can be run on mobile devices. The MobileNetV2 architecture is used because it is lightweight and suitable for image processing on low-specification devices. The test results show that the best model is able to predict children's height and weight with a Weight MAE of 2.30 kg, Height MAE of 5.12 cm, Weight RMSE of 2.55 kg, and Height RMSE of 6.71 cm. The model with a front view image angle, Adam optimizer, and batch size of 16 produced the most optimal performance. This system contributes as an early detection tool that is practical, fast, and supports efforts to accelerate the handling of stunting in Indonesia.

Keywords: stunting, image processing, artificial intelligence, growth prediction, early childhood, MobileNetV2.