

## ABSTRACT

Padang cuisine is one of Indonesia's traditional culinary specialties that consists of various dishes with similar shapes, colors, and textures, which makes automatic identification challenging. This issue becomes important when a fast, accurate, and efficient food detection system is required to support applications such as automated cashier systems, calorie estimation, and digital catalogs of traditional foods. This study aims to automatically detect various types of Padang dishes using the You Only Look Once version 8 medium (YOLOv8m) algorithm. The dataset used consists of 3,998 images of Padang food collected from various open sources and annotated using Roboflow, which were divided into 3,647 images for training, 235 images for validation, and 116 images for testing. The training process was conducted for 110 epochs with an input size of  $640 \times 640$  pixels, batch size of 16, and active data augmentation using the base model *yolov8m.pt*. The training results show that the model achieved stable convergence without significant overfitting, with a consistent decrease in loss for both training and validation data. Based on the testing results, the YOLOv8m model achieved an average Precision of 0.85, Recall of 0.751, mAP@50 of 0.834, and mAP@50–95 of 0.701. In addition, the Accuracy of 0.829 and F1-Score of 0.787 indicate that the model has a good balance between detection precision and completeness. Overall, the results show that YOLOv8m is effective for detecting various types of Padang food and has the potential to be further developed for automatic food detection systems in computer vision-based culinary applications.

**Keywords:** YOLOv8m, object detection, Padang food, deep learning