

ABSTRACT

Potholes are a type of road damage that cause issues such as accident risks and traffic disruption. Identifying potholes is essential to maintain road quality. Various efforts have been made, such as manual surveys conducted by officers. However, this traditional method is considered inefficient. Therefore, an innovative solution is needed to detect potholes. This study proposes an automatic pothole detection system using YOLOv11. YOLOv11 is chosen due to its speed in object detection, making it suitable for detecting road potholes. This model offers high accuracy with a 22% reduction in parameters compared to the previous version, indicating improved efficiency. The study uses a total of 84 primary images from personal sources and 648 secondary images from Kaggle to train the model. The results show that the model achieved up to 92% precision when tested using the best model and a confidence threshold above 0.65. This model will run on a device integrated with a web-based system as an interface that provides complete detection data. This process will facilitate the work of conducting pothole surveys, allowing for quicker decision-making.

Keywords: *potholes, YOLOv11, Kaggle, web.*