

ABSTRACT

Pothole damage is a serious problem with significant impact on road users. This research aims to develop a website that detects potholes in road images using convolutional neural network (CNN). Four CNN models were tested with variations of convolutional layer, fully connected layer, and data augmentation. The results show that the simple model without augmentation achieved the best accuracy of 82% on the test data, followed by the complex model with augmentation and the simple model with augmentation with 80% accuracy. The complex model without augmentation only achieved 64% accuracy, indicating possible overfitting. The model was implemented on the Streamlit platform, facilitating pothole detection through a web interface. In conclusion, CNN model development and integration with Streamlit is effective for early detection of potholes. The use of data augmentation helped generalize the model, although the simple model without augmentation performed best. Further research is recommended for model optimization and continuous evaluation.

Keywords: *Artificial intelligence, classification, deep learning, road infrastructure, streamlit*