ABSTRACT

Non-compliance with traffic signs in Indonesia is one of the main causes of traffic accidents. Drivers often ignore traffic signs, such as overtaking without ensuring safety. This study employs a Deep Learning approach by comparing two popular Convolutional Neural Network (CNN) architectures, namely InceptionV3 and Xception, for traffic sign classification in Indonesia. Both models were tested to evaluate their performance in recognizing various traffic signs with different visual features. The Xception architecture demonstrated better stability in classifying most classes, achieving the highest accuracy of 91,43% in the second experiment. However, the model still faced challenges in recognizing traffic signs with more complex features. On the other hand, InceptionV3 achieved a slightly higher accuracy of 91,74% in certain classes but exhibited greater variability in classes with visually similar features, such as "red light" and "no parking".

Keywords: *Convolutional Neural Network (CNN), Xception, InceptionV3, Traffic Signs*