

ABSTRACT

There has been a lot of research on speed bump detection. However, research on the detection of speed bumps in low-light conditions is still low. Whereas a speed bump detection system in low light conditions can help drivers to pay attention to the condition of the road environment so as to reduce the inconvenience due to speed bumps that cannot be detected by the driver's vision. This research proposes Real-Time Detection Transformer (RT-DETR) as a method to detect speed bumps in low light conditions that are effective and efficient. The dataset used in this research is more than 1200 images with the same class, namely speed bumps and collected independently. Tests carried out with various scenarios to find the best configuration, so that the results of the model performance are optimal. With the use of optimal configuration and training, this model gets a good AP performance of 83.5% and FPS achieved 25fps using test data containing a collection of images that focus on speed bumps in low light conditions with environmental conditions both dry and wet.

Keywords: speed bump, low light image, object detection, deep learning, transformer, RT-DETR