Abstract

Until 2021 the number of motorcycle users in Jakarta is 21,758,695 people

and continues to grow to date. This large number of users makes it difficult for the

authorities to discipline unscrupulous motorists who do not obey the rules, one of

which is crossing the sidewalk. The construction of the bollard itself can only

block cars but cannot block motorbikes because the width of the bolar must

exceed the width of a wheelchair.

The bollard is an iron pole that is built permanently perpendicular to the

sidewalk. In order to allow wheelchairs to pass through, an intelligent system

based on object detection can be built to detect these wheelchairs.

In this study, the detection algorithm was built using datasets taken from

kaggle.com and google images using image scrapping techniques. Testing the

model using a wheelchair object, wheelchair detection using the YOLOv3

algorithm, produces a precision recall model and a mAP value with an IoU

threshold configuration of 0.5 which is used to detect wheelchair objects as input

for testing of 456 images. This wheelchair detection system can block motorized

vehicles and provide access when detecting wheelchairs passing by on the image

used as a test.

Keywords: Bollard, YOLOv3, whellchair.

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