ABSTRAK

Aktivitas di jalan raya yang melibatkan kendaraan seringkali terdapat masalah kemacetan akibat memadatnya kuantitas kendaraan yang berada di jalan raya. Selain itu, ada pula masalah ketertiban dan pelanggarannya, penggunaan jalur yang tidak pada tempatnya, misalnya seperti kendaraan yang masuk ke jalur yang tidak diperuntukkan bagi kendaraan tersebut. Oleh sebab itu, peneliti merancang sebuah aplikasi deteksi kendaraan secara *real-time* menggunakan metode YOLO (*You Only Look Once*).

Analisa yang dilakukan menggunakan jumlah dataset sebanyak 1000, 1 kelas, dan 50 *epoch*. Proses pelatihan dilakukan hingga 4.000 *step*, dan penyimpanan *checkpoint* ke bentuk *protobuf file* dilakukan pada *step* 200, 400, 600, 800, 1.000, 1.200, 1.400, 1.600, 1.800 dan 2.000

Bounding box berhasil mendeteksi dan mengklasifikasi objek secara tepat. Pengujian ini dilakukan menggunakan *usb camera*

Kata kunci: *YOLO (you only look once), real time, bounding box, Raspberry Pi*

ABSTRACT

Activities on a highway that involve vehicles often have congestion problems due to the density of the quantity of vehicles that are on the highway. In addition, there are also problems of order and violation, the use of lanes that are not in place, such as vehicles entering the lane that are not intended for the vehicle. Therefore, researchers designed a vehicle detection application in real-time using the YOLO (You Only Look Once) method.

Analysis carried out using a total of 1000 datasets, 1 class, and 50 epoch. The training process is carried out up to 4,000 steps, and the storage of checkpoints to protobuf file forms is carried out at steps 200, 400, 600, 800, 1,000, 1,200, 1,400, 1,600, 1,800 and 2,000

Bounding box successfully detects and classifies objects correctly. This test is done using a USB camera

Keywords: YOLO (you only see once), real time, bounding box