

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 3, Issue 3, April 2023

Real Time Road Traffic Detection Using Computer Vision

M. S. R. Pavani¹, Vatsavai Tanuja², S. Bhavani Shankar³, V. Arul⁴, S. Sandeep⁵

Assistant Professor, Department of Computer Science and Engineering¹ Students, Department of Computer Science and Engineering^{2,3,4,5} Raghu Institute of Technology, Visakhapatnam, AP, India

Abstract: Object detection using Machine learning has achieved very good performance but there are many problems with images in real-world shooting such as noise, blurring or rotating jitter, etc. These problems effects the object detection. The main objective is to detect objects using You Only Look Once (YOLO) algorithm. The YOLO method has several advantages when compared to other object detection algorithms. In other algorithms like Convolutional Neural Network (CNN), Fast-Convolutional Neural Network the algorithm will not look at the image completely, but in YOLO, the algorithm looks the image completely by predicting the bounding boxes using convolutional network and finds class probabilities for these boxes and also detects the image faster as compared to other algorithms. We have used this algorithm for detecting different types of objects.

Keywords: Machine Learning, Object Detection, Yolo, Convolutional Neural Network ,Fast Convolutional Neural Network

REFERENCES

- [1]. Yi-Qi Huang, Jia-Chun Zheng, Shi- Dan Sun , ChengFu Yang and Jing Liu, Enhanced YOLOv3 Algorithm and Its Application in Traffic Flow Detections", Appl. Sci. 2020, 10, 3079,doi:10.3390/app1009307.
- [2]. Muhammad Fachrie," A Simple Vehicle Counting System Using Deep Learning with YOLOv3 Model", DOI: 10.13140/RG.2.2.15026.56001, 2020.
- [3]. OPENCV with PYTHON, by Prateek Joshi.
- [4]. D. Li, B. Liang, W. Zhang, "Real-time moving vehicle detection, tracking, and counting system implemented with OpenCV," Information Science and Technology, 2014, pp. 631-634.
- [5]. G. Lee, R. Mallipeddi, G.-J. Jang, M. Lee, "A genetic algorithm-based moving object detection for real-time traffic surveillance," IEEE Signal Processing Letters, vol. 22, 2015, pp. 1619-1622.
- [6]. N. Seenouvong, U. Watchareeruetai, C. Nuthong, K. Khongsomboon, N. Ohnishi, "A computer vision based vehicle detection and counting system," Knowledge and Smart Technology, 2016, pp. 224-227.
- [7]. Z. Moutakki, I.M. Oulou, K. Afde, A. Amghar, "Real-time video surveillance system for traffic management with background subtraction using codebook model and occlusion handling," Transport and Telecommunication Journal, vol. 18, 2017, pp. 297-306
- [8]. https://etrr.springeropen.com/articles

