Deep Learning based Vehicle Count Model

Tools used for this project:

1. Python
2. Open-CV
3. Git
4. Spyder

Description:

Developed a Vehicle Count Application which counts the number of vehicles passing by a fixed line. The model takes the path of video and the coordinates of the lines and shows the live count of the vehicles on the road.

Approach:

I have used Background Subtraction algorithm (createBackgroundSubtractorMOG2) in order to extract the forward mask of the frame. Through opencv we extract frame one by one and apply Background Subtraction algorithm . After that we find all the contours and extract the mid points of all the rectangles(contours).

The y axis midpoint can then be compared with the coordinates of lines and if it crosses the line, counter is incremented.

I chose this model because it is less complex and requires less processing power. This model just subtracts the pixel values of 2 frames which results in which results in white foreground objects in motion.

I could have used Mean Filter approach for foreground detection but I found the above model apt for this kind of usecase.

My current model is better because it is working on fairly low processing power and the Frame Rate is also not that low. It is also accurate in day conditions. In night conditions, due to the shadows, it’s not that much accurate.