

Shri Ramdeobaba College of Engineering & Management

Department of Computer Science and Engineering

Traffic Sign Classification

Abstract

Road traffic constitutes a major part in the problem of society. As the road traffic is increasing day by day there is a necessity of following the traffic rules with proper discipline. Traffic rules consist of traffic sign boards and traffic signals which are meant to be followed by everyone in the society. The signboards are captured using cameras installed in the vehicle. This gives the driver a sort of assistance which alerts the driver and reduces the work of the driver. The main goals of this project are detection, and recognition.

Aim and Objectives

To design a model which detects and classifies the traffic sign.

Technology & Tools



Process

The project is divided into the following major parts -

Step 1 -

Initially we gone through some research papers based on traffic sign detection and researched on real time object detection. And then collected the dataset of different traffic signs.

Step 2 -

First we tested upon the static images using CNN to classify the input image and we extended this to the region classification using R-CNN, so that different sign boards in a region can be classified.

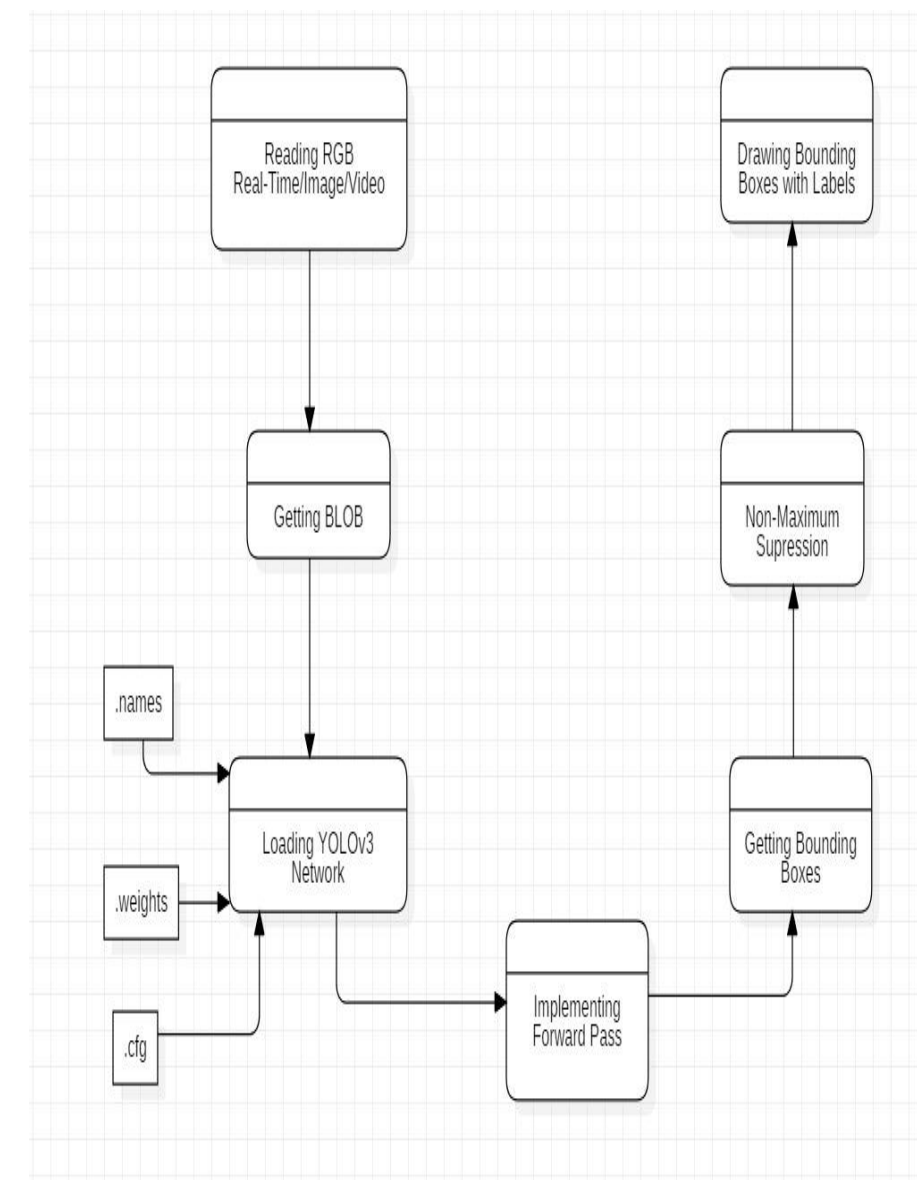
Step 3 -

Next we moved to classification of traffic signs at real time using Yolo V3 & Darknet architecture, these algorithms are used for real time object detection. So we trained 900 different images and build a model based on those images.

Step 4 –

Finally we integrated the model with GUI, for which we used PyQt5 to design the UI for the project.

Flowchart



Benefits

- This Real time classification of traffic signs will be very helpful in reducing the accidents which takes place due to careless approach of humans. What can be done is we can set up a device in vehicles which will recognize the traffic sign and notify the driver at real time.

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