As we live in 21st Century, we are getting advanced day by day and so our technology. Our surrounding is getting smarter and also the automobile industry. Hence our team is trying to give their contribution towards this development. So, our team had tried to develop a project based on MACHINE LEARNING in which we used PYTHON as a programming language, which is capable of detecting the traffic signs and will help in maintaining the traffic rules.

SPECIFICATIONS

Our team have collected a **large number of data set** which consists of **140+ categories** and these categories contain around **52000+ images** which are taken under different conditions which is **decently capable of detecting a good amount of traffic signs**. We have **combined these data sets** with the **python inbuilt libraries** which makes **it stronger and capable**.

We **have combined our dataset with the machine learning algorithms and** which help us to make our model **more accurate and smart enough to detect traffic signs with good accuracy**.

The packages which we used in our model are as follows:

- **Numpy**
- **Pandas**
- **Opencv**
- **Matplotlib**
- **Keras**
- **Tensorflow**
- **CNN**

WORKING

Our model is **capable of detecting the traffic signs** hence if you place any traffic sign infront of your camera within the **distance of 15 to 20 cm**, it **will automatically detect the sign and will show the result** within the window with the **respected accuracy as well as FPS**.

STEPS TO USE:

We have created our first **program (recogni sign > codes > 1st program) i.e. a training program** in which we added our **data set (https://drive.google.com/drive/folders/125BCyiujweYOazL2XeKqwCBfxY-s2tRP?usp=sharing)** and trained it. we have saved it in a **pickle format (recogni sign > codes > pickle file)**

We have developed a **casket classifier** (**recogni sign > codes > cascade classifier)** to recognize the image.

1) We have created our **second program (recogni sign > codes > 2nd program) i.e. GUI interface of a model** in which
   a) you have to add the **casket classifier** in the **first line of second cell.**
   b) you have to add the **pickle file** in the **second line of second cell.**
2) Now you have to **run the program** which will direct you to a window **which uses the camera** and show the details such as **FPS, accuracy and the name of sign with some other details**
3) Now the **user have to place the sign** infront of the **camera** within the range of **15 to 20 cm**