User Guide for Project

Software used.

Anaconda
Model is written in Jupyter notebook.
Programming language used is Python3
Libraries used are Tensorflow, PIL, matplotlib, cv
Detailed instruction to download datasets and packages are given below.

Dataset Used.

Lisa Traffic Sign dataset can be downloaded from this link. In Turnitin submission, I have removed this downloaded dataset folder, as then the zip file was 11 GB which was difficult to submit.
I have given following data extraction steps to use once data is downloaded.

The composition of the dataset can be seen in the document datasetDescription.pdf, which is present in the dataset folder.
The dataset consists signs of Warning , Prohibition, SpeedLimit , speedLimitGood
For my thesis dataset is considered only for warning signs.

Data Extraction Steps

- python lisa/tools/mergeAnnotationFiles.py frame mergeAnnotation.csv ./lisa
    - we need only images = frames and not videos.
    - creates new mergeAnnotation.csv

- python ./tools/extractAnnotations.py -c warning copy ./allAnnotations.csv
    - Extracting from categories.txt only warnings, not prohibition or speedLimit or speedLimitGood.

Softwares and Libraries used:

1. Install Anaconda
   Anaconda can be downloaded from this link. Anaconda will help you to manage all the libraries required either for Python or R. Refer this tutorial to install Anaconda .

2. Create .yml file to install Tensorflow and dependencies
   It includes

   - Locate the path of Anaconda : Terminal command (which anaconda)
   - Set the working directory to Anaconda : Terminal command (cd anaconda3)

- Create the yml file (For MacOS user, TensorFlow is installed here) : Terminal command (touch hello-tf.yml)
- Edit the yml file : Terminal command (vi hello-tf.yml)
    - You enter an **edit** mode. Inside this mode, you can, after pressing esc:
    - Press i to edit
    - Press w to save
    - Press q! to quit
    - Write the following code in the edit mode and press esc followed by :w

```
name: hello-tfdependencies:
 - python=3.6
 - jupyter
 - ipython
 - pandas
 - pip:
 - https://storage.googleapis.com/tensorflow/MacOS/cpu/tensorflow-1.5.0-py3-none-any.whl
```

    - Press esc followed by :q! to quite the edit mode.

- Compile the yml file : Terminal command (conda env create -f hello-tf.yml)
- Activate Anaconda : Terminal Commands (conda env list) and (source activate hello-tf)
- Open jupyter notebook : Terminal command (jupyter notebook Nirali_Traffic_Sign_Detect_Recog.ipynb) // You should be in project directory where the file is located.
- Other Libraries installed in jupyter notebook are
    - Matplotlib using jupyter notebook commands:! pip install matplotlib
    - CV using jupyter notebook commands:! pip install opencv-python

User Defined Functions:

• Run_inference() and generate_output() are user defined function in our model which are used for executing the model for demo mode.