README

Folder Structure

1. Unet: Unet implementation
2. ERnet.ipynb : ERNet implementation
3. Processed.ipynb : to preprocess Dataset and create binary mask
4. Preprocessed_color.ipynb: To create Instance masks
5. CustomLoss.ipynb

Steps to Follow:

1. Past the DataSet folder in the main folder.
2. Go into to Processed.ipynb and follow these steps:

#Description of Dataset:

The lane marking is the main component on the highway. It instructs the vehicles interactively and safely drive on the highway. Lane detection is a critical task in autonomous driving, which provides localization information to the control of the car. We provide video clips for this task, and the last frame of each clip contains labelled lanes. The video clip can help algorithms to infer better lane detection results.

Dataset Size

3626 video clips, 3626 labelled frames.
Information of each clip: 20 frames for each one.

Directory Structure:

```
|
|
|
|----clips/ #
video clips, 3626 clips
|------|
|------|----some_clip/ #
Sequential images for the clip, 20 frames
|------|----...
|
|----label_data_0313.json #
Label data for lanes
|----label_data_0531.json #
Label data for lanes
|----label_data_0601.json #
Label data for lanes
```

#Description of the ENet Code:

It contains a Class names LaneDataset in this while initliazation in __init__ change

dataset_path="C:/Users/azhar/OneDrive/Desktop/DL lab/data/lane detection/ TUSimple/train_set" : to path where dataset is located

#Description of the PreProcessed.ipynb:

```
clips =
'/Users/deepanshubissu/Desktop/DL_Project/TuSimple/TUSimple/train_se
t/clips/'

new_frames = '/Users/deepanshubissu/Desktop/DL_Project/Colouring
Lanes/tusimple_preprocessed/
training/frames'

change clips to where clips is located in your
dataset and new_frames is folder where coloured
frames will be store create it

df_0601 = pd.read_json('/Users/deepanshubissu/
Desktop/DL_Project/TuSimple/TUSimple/train_set/
label_data_0601.json', lines=True)

df_0313 = pd.read_json('/Users/deepanshubissu/
Desktop/DL_Project/TuSimple/TUSimple/train_set/
label_data_0313.json', lines=True)

df_0531 = pd.read_json('/Users/deepanshubissu/
Desktop/DL_Project/TuSimple/TUSimple/train_set/
label_data_0531.json', lines=True)

df = pd.concat([df_0601, df_0313, df_0531])

change the path of these json files accordingly
as mentioned in above description of dataset
```

To Run the Unet Code:

Go to Train.ipynb and change the paths according to the mentioned above and run the inference.

CustomLoss.ipynb:

It contains the Custom loss implemented class