**SELF-DEPENDENT CAR**

Self-dependant Car means an autonomous car which drives by itself without the help of a driver. If this feature is installed into the cars of present world, it will surely demonstrate the kind of advancement taking place in the field of “ARTIFICIAL” INTELLIGENCE and how a person’s life gets more comforted. It simplifies the process and need for the driver gets vanished. As the car runs on it’s own and this matter is literally enthusiastic. It catches the attention of fellow travellers on the road near by.

TECHNICAL DETAILS:

INPUTS:

1. The dataset consists of the images from cameras fixed front,rear,and side-by,
2. GPS Data,
3. Ultra sonic sensors’ data,
4. LIDAR’s(LIGHT DETECTION ANDRANGING) data.

OUTPUT:

1. Steering angle
2. Breaking
3. Acceleration
4. Switching on/off of wipes
5. Following of Signals,Traffic rules
6. Avoiding Collisions

FURTHER DETAILS:

The above stated details make the process of execution so complicated so we consider the mini- dataset of this problem named Sully Chen Dataset.

This simplified version of the dataset requires the steering angle to be predicted based on given the continuous shots of front camera. This becomes the regression problem.

In Sully Chen Dataset, the driving data set contains a bunch of images captured in the

Dash camera for every millisecond.

The Exploratory Data Analysis is performed after splitting the data into 80% of Training Data and 20% of Test Data.

Model:

If at all we had a single picture, CNN’s satisfy the purpose, here in fact ,there are thousands of images hence the CNN must be iterated over all the images and the RNN best fits now.

The type of RNN we use is the LSTM, as we have to remember the observations in the previous image and append the matter with the conclusions drawn from the current image.

Thus the mode is CNN+RNN(LSTM).

Instead of considering a single image, we take a batch of images to speed up the process.