Finding Lane Lines on the Road

Background

A human uses his eyes to capture images and make several decisions while driving a car based on those.For a self driven car to run it becomes very important to identify objects based on data collected.

Lane Line are very important and act as a reference for where to steer car.

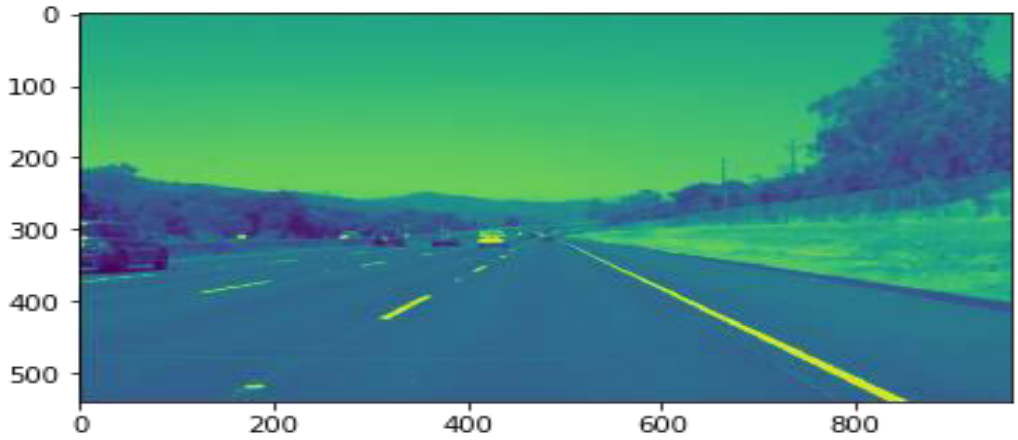
The goals of the applicaton is to help a driver less car to identify lane lines on the road

* Design and develop a program which helps in finding the lane lines on the road

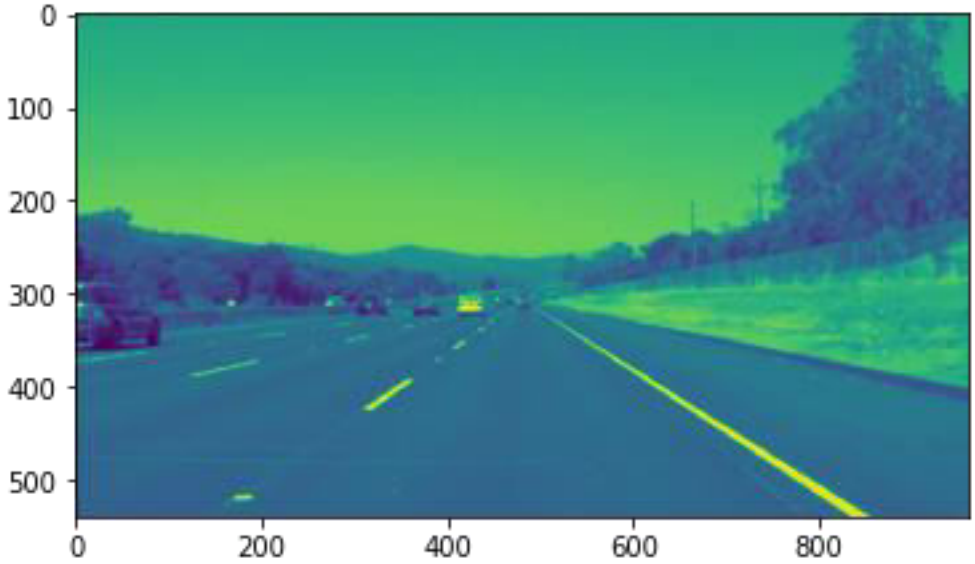
Proposed Solution

* Read the input Images or frames of a video

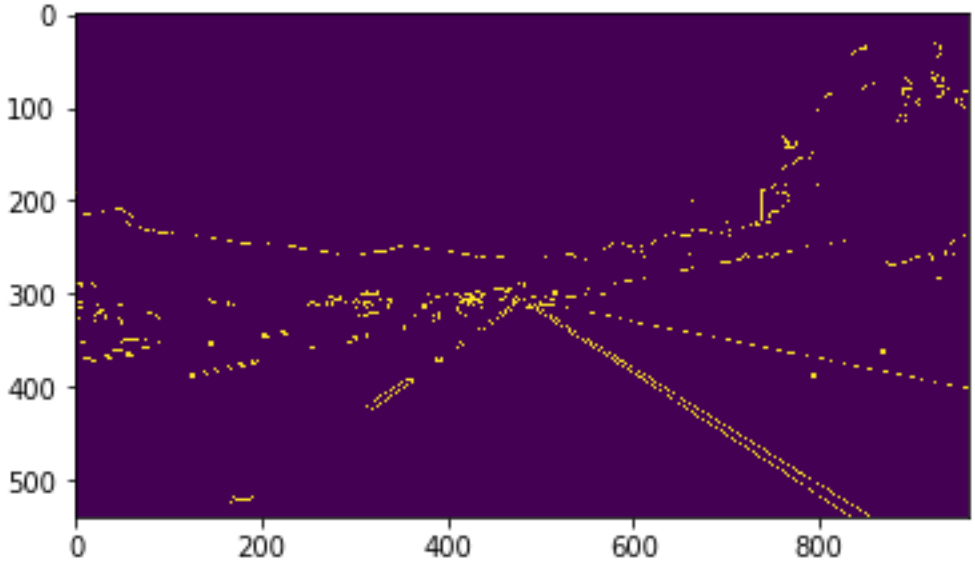
* We will be converting the image to grayscale so that luminance of the pixel can be represented in 8 bit by applying grayscale method to image



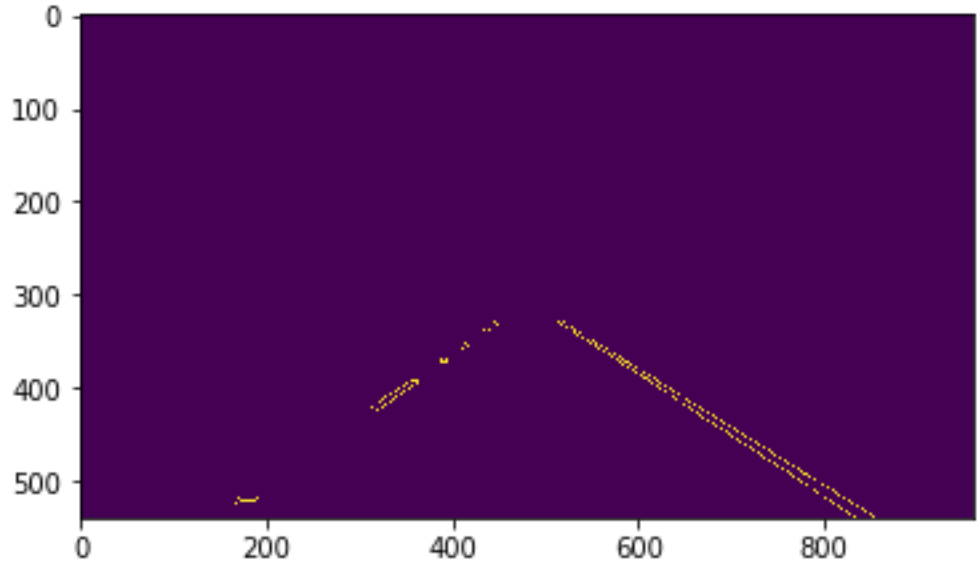
* Applying Gaussian smoothing to smoothen the image



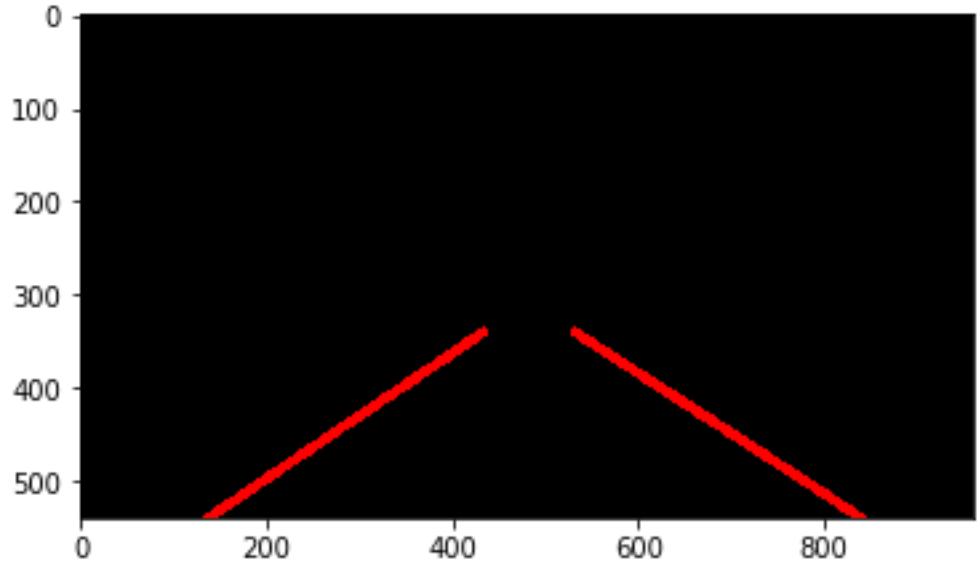
* Apply Canny Edge detection algorithm to identify the edges based on the sharp changes in the intensity of pixel



* Identifying and separating the region of interest that will be the part of images having lane marks that are of significance



* Apply Hough Transform to the line which represents the line in a Hough parametrized space



* Average the line and draw a single left and right line with precision over the image

Identify potential shortcomings with your current pipeline

One potential shortcoming would be what would happen when the curves are huge. The program parameters are based predominantly according to the images we have considered but what happens when it's more dynamics. The solution need to be more accurate and flexible to work in any real time scenario.