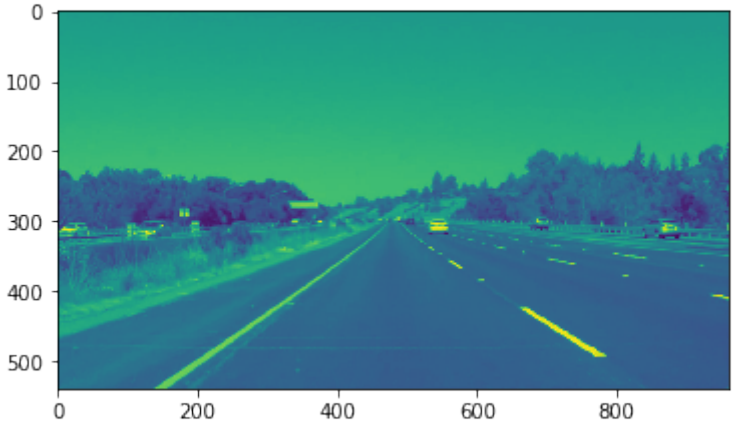
1. Finding lane lines

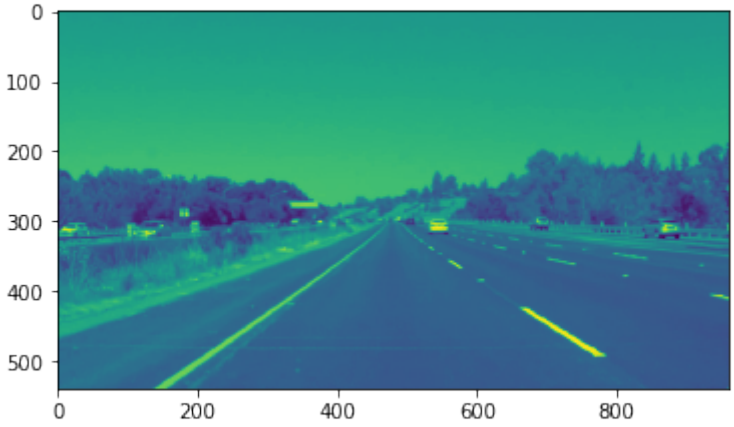
In order to keep the correct lane for the autonomous car I accomplished these steps:

1) Imported the picture.

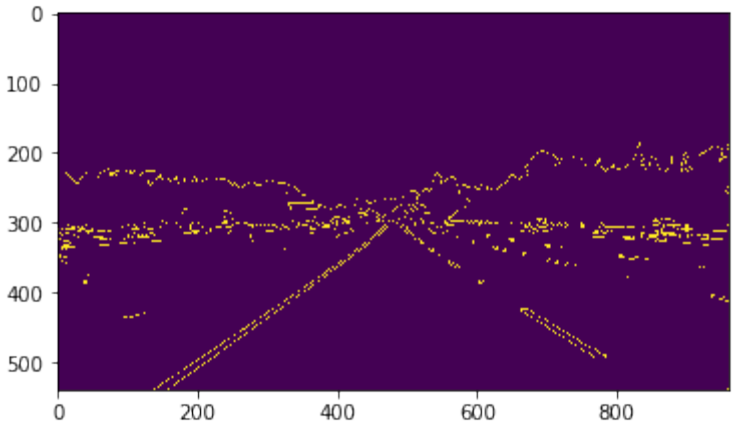
2) Converted the picture to gray.



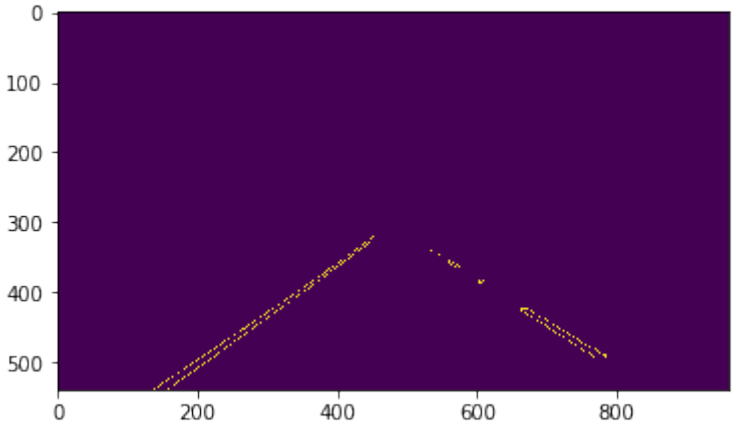
3) Converted the gray picture to Gaussian blur.



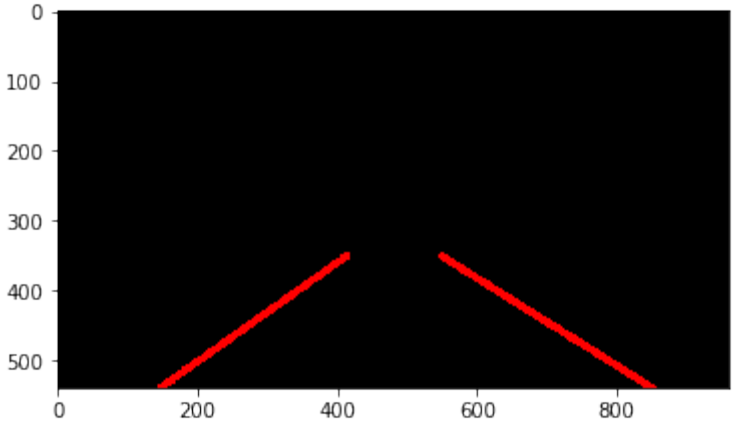
4) Applied Canny filter on the Gaussian Blur's picture



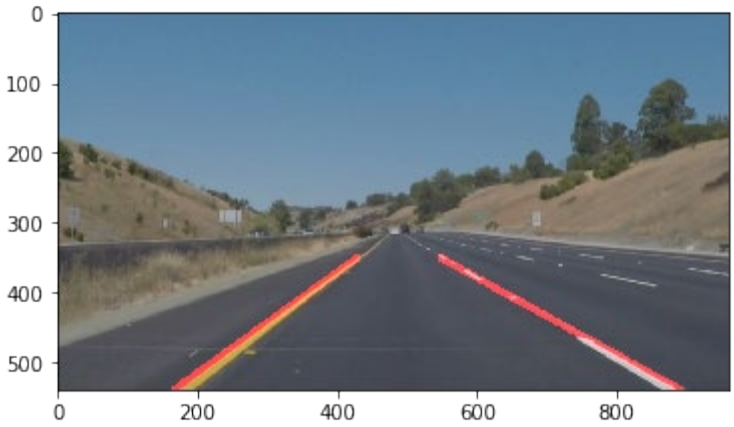
5) Found the region of interest, this region helped me to determine the unwanted edges.



6) Converted the region of interest into Hough Space, then identify left and right lane boundaries. I have found the slope and intercept for the line on the left and right. The lines with slope > 0 are on the right side thus the lines with slope < 0 are on the left side.



7) The final picture.



2. Identify potential shortcomings with your current pipeline

I've tried different parameters in order to find the best solution.

The model works well on the straight line and quite well on curved roads.

3. Suggest possible improvements to your pipeline

A possible improvement would be to use polynomial function rather than linear. I have tried the polynomial's function but without success.

In general, maybe we can use SCNN (Spatial Convolutional Neural Networks). This technic is relatively new but seems that works well.