WriteUp

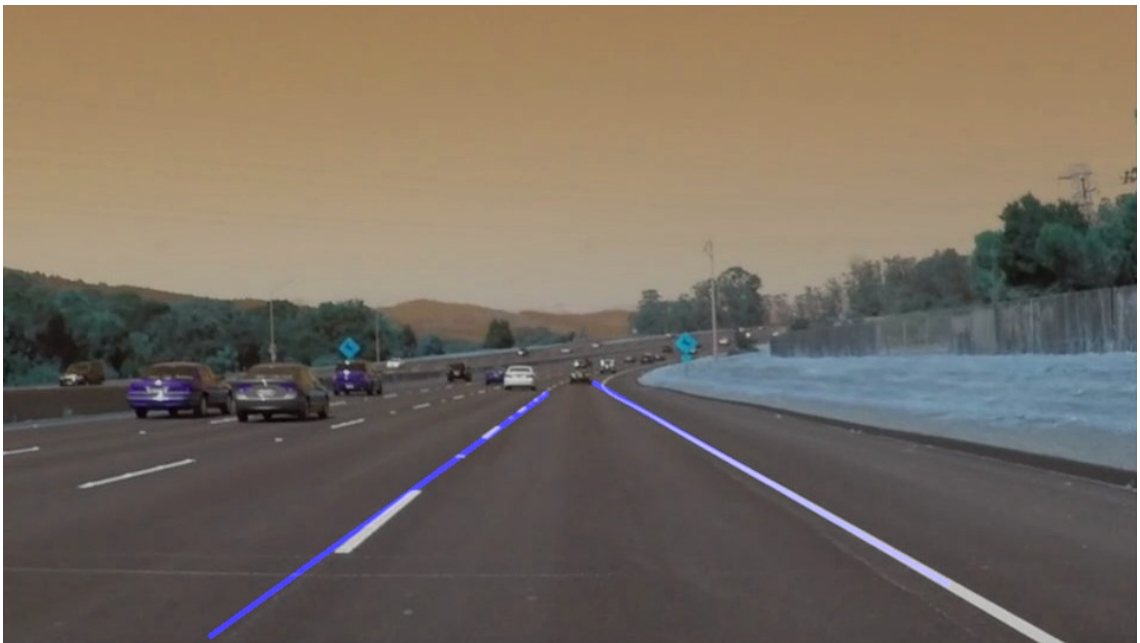
Reflection

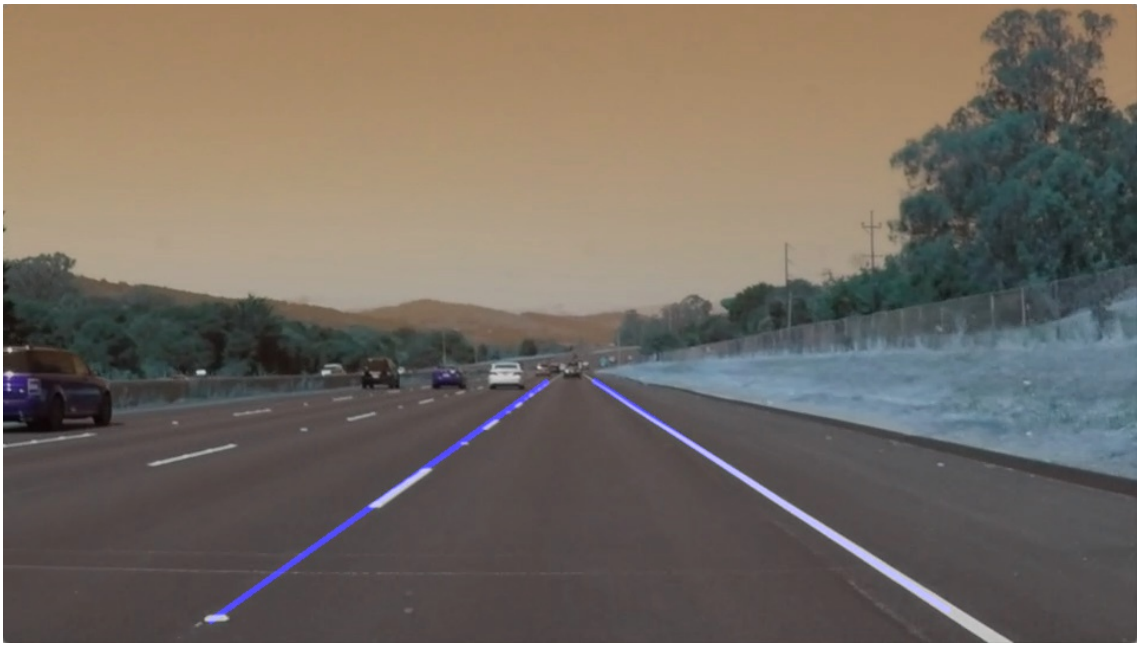
1. Describe your pipeline. As part of the description, explain how you modified the draw_lines() function.

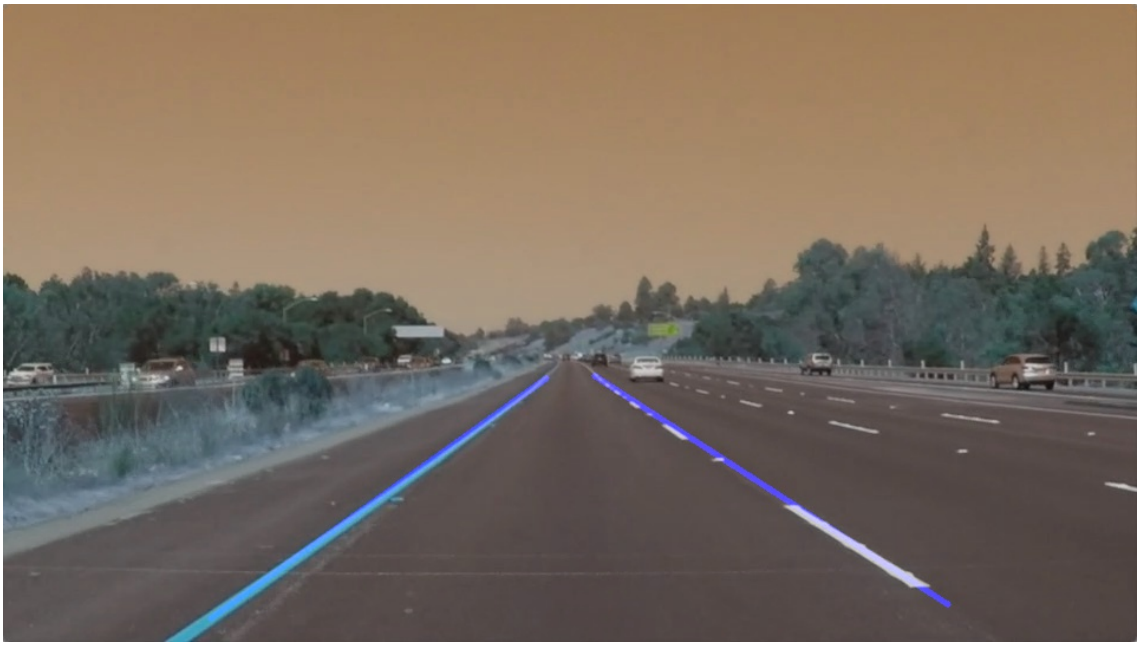
My pipeline consisted of 5 steps. First, I converted the images to grayscale, then I applied Gaussian Blur to the grayscale image.In the third step, I used canny edge detection with high and low threshold of 150 and 50 respectively. In the next step, I created a masked image with a specific region of interest using the vertices, which removes the area not required for the lane detection.In the final step, I used Hough transform to get the straight lines from the edges found in the masked region.

In order to draw a single line on the left and right lanes, I modified the draw_lines() function by firstly creating a Line class which includes the slope, value of b and functions to get x and y.After that i created a method for calculating the average of the lines using the Line class.In the draw lines method, for right lines the slope should be greater the zero and for the left lines the slope should be less than zero, append these lines and calculating the average of these lines and predicting the start and end value of the left and right lane.

Images:







2. Identify potential shortcomings with your current pipeline

One potential shortcoming would be what would happen when with faster speed the detection line might not be able to detect the the lines.
Another shortcoming could be with faster turn and hard turn the pipeline will not be efficient.

3. Suggest possible improvements to your pipeline

A possible improvement would be to draw the lines more efficient while speeding up the turn.
Another potential improvement could be to improve the masked region for better detection.