Finding Lane Lines on the Road

Writeup Template

You can use this file as a template for your writeup if you want to submit it as a markdown file. But feel free to use some other method and submit a pdf if you prefer.

Finding Lane Lines on the Road

The goals / steps of this project are the following:

• Make a pipeline that finds lane lines on the road

• Reflect on your work in a written report

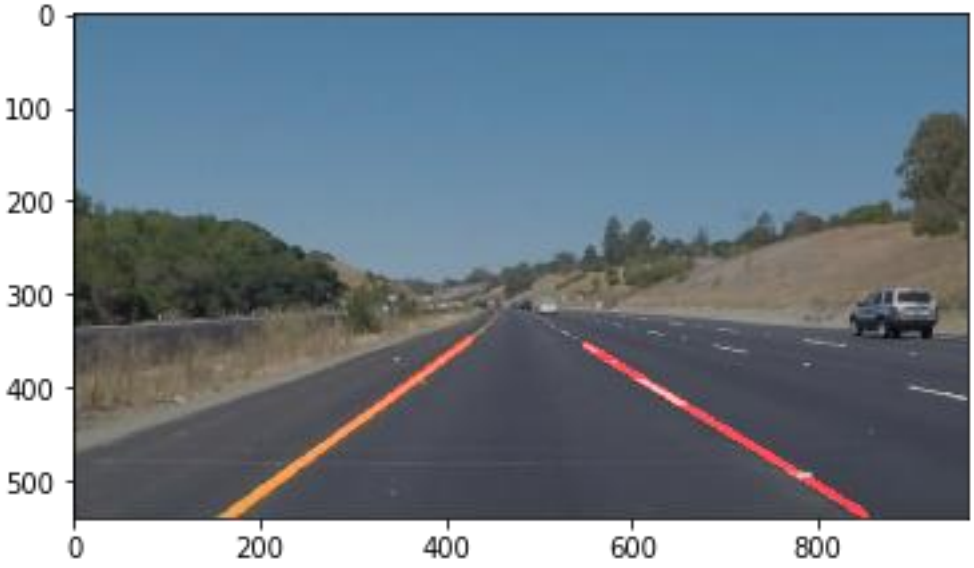
Reflection

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 applies the Gaussian Noise kernel. After finishing Canny transform, and then I find the interested region. I applies the hough transform last. Canny transform. After finishing the Gaussian Noise kernel, I define the interested region. I applies the Canny transform and drawn the line on the image.

In order to draw a single line on the left and right lanes, I modified the draw_lines() function by extrapolate the line segments detected to a full lane. To do this, I divided the lane into two categories based on the slope. With the dots assigned, I found out the function of the line using polyfit and poly1d and could get two points on the lane.

Here are the results I test on the other images.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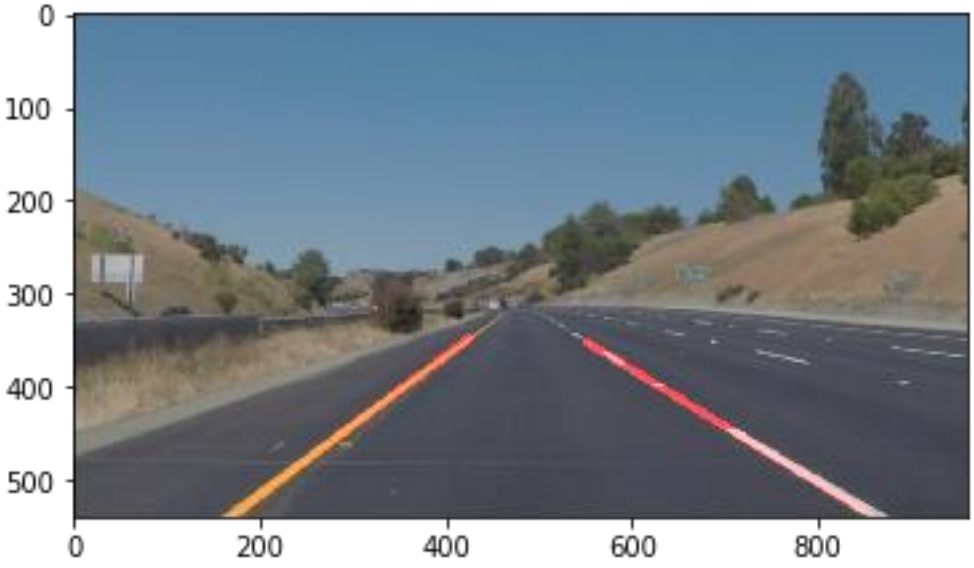
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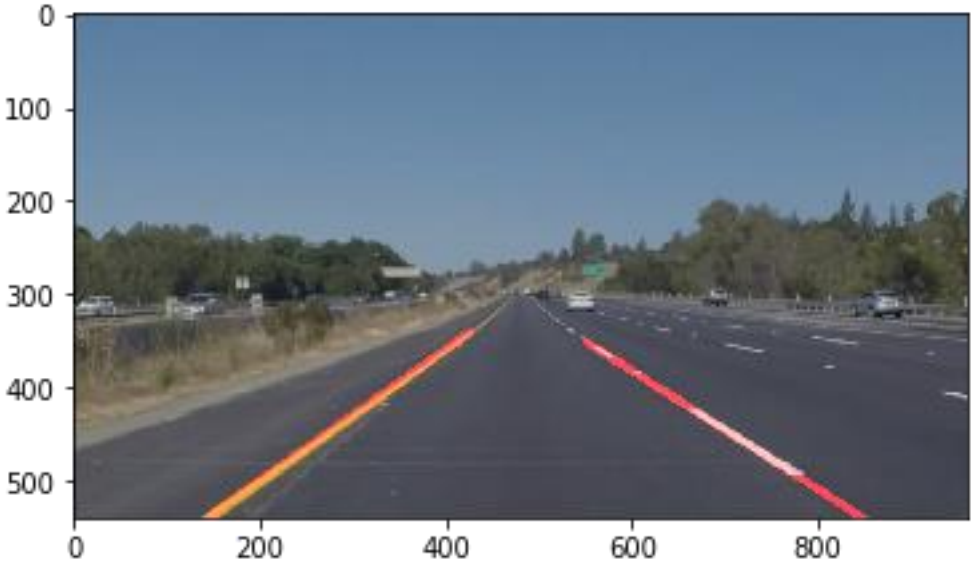
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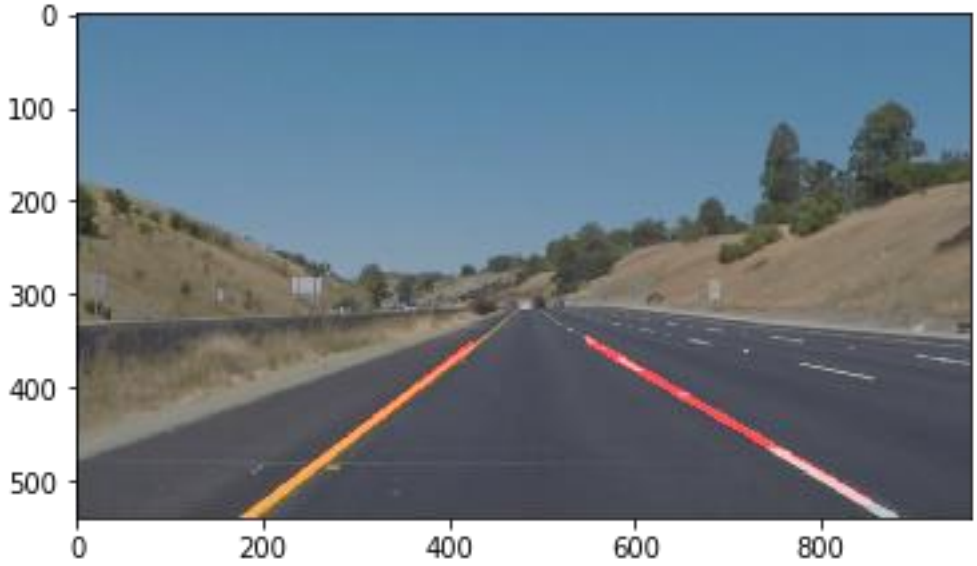

2. Identify potential shortcomings with your current pipeline

One potential shortcoming would be what would happen when the size of video is changed, the interested region will be changed too. The parameters should be changed.

Another shortcoming could be if there are many vehicles on the front of our car, it may increase the probability of mistake detection.

If there is some rubbish on wright or yellow, the detection may be disturbed.

And also, if the curvature of the lane is big, the detection may make mistake.

3. Suggest possible improvements to your pipeline

A possible improvement would be that we can make the parameters of the pipeline to adjustable according to the parameters of the camera.

Another improvement would be that we can modify the draw_line() with average or other method.

The optional challenge is different from the first two videos, the curvature of

the lane is big. When using the draw_line, the points of the left may be connected with the point from the right lane. So the pipeline fails on the optional challenge.