

### PROJECT

## Finding Lane Lines on the Road

A part of the Self Driving Car Engineer Nanodegree Program

### PROJECT REVIEW

NOTES

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# **Requires Changes**

1 SPECIFICATION REQUIRES CHANGES

Hello

There are just small modifications that you need to make in this project.

All the best for your next submission!

## **Required Files**

The project submission includes all required files

# **Lane Finding Pipeline**

The output video is an annotated version of the input video.

Well done! You have correctly built a pipeline and your video is properly annotated.



In a rough sense, the left and right lane lines are accurately annotated throughout almost all of the video. Annotations can be segmented or solid lines

Your video passes this section as you did well enough to annotate left and right lane lines distinctly without any intersection. (Good work) We still suggest you get a better version of the output for this and the next section.

Visually, the left and right lane lines are accurately annotated by solid lines throughout most of the video.

In order to meet this section's specification, your video needs to be accurately annotated by single solid line.

## **SUGGESTIONS**

• Your annotations do not cover up the whole of lane lines.



what you could do is fine tune your region of interest accordingly to eliminate any noise from unwanted areas that are occurring in the annotations. Taking a better endpoint will actually be a great job.

- max\_line\_gap that defines the maximum distance between segments that will be connected to a single line.
- min\_line\_len that defines the minimum length of a line that will be created.
  - Increasing min\_line\_len and max\_line\_gap (~100 and above) for Hough Transform will make your lines longer and will have less number of breaks.(this will make the solid annotated line longer in the output)Increasing max\_line\_gap will allow points that are farther away from each other to be connected with a single line.
- threshold increasing(~ 50-60) will rule out the spurious lines.(defines the minimum number of intersections in a given grid cell that are required to choose a line.)
- Decreasing the kernel-size in the Gaussian Filter might also help, as this will remove the noise making the image less blurry.

For further reading and references:

link1

link2

link3

link4 for optional video.

#### Reflection

Reflection describes the current pipeline, identifies its potential shortcomings and suggests possible improvements. There is no minimum length. Writing in English is preferred but you may use any language.

 $Great \ addition \ in \ the \ reflection \ section \ rubric \ about \ how \ the \ pipeline \ would \ have \ troubled \ identifying \ curved \ lanes!$ 

Since the algorithm is "trained" on a very specific road and light conditions when these conditions change we can expect that the algorithm performance will degrade.

Some more shortcoming where the algorithm might fail can be:

- Shadows on the lanes
- Missing/faded lane line
- Color of the lane line
- Uphill/downhill

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