Self Driving Car Nanodegree

Term 1

Lesson 1: Finding Lane Lines

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Methodology

First I convert the single images to grayscale and apply a Gaussian filter with kernel size 3. Then follows the canny transformation and the definition of the region of interest is applied. The houghlines transformation is done and the lines are drawn.

Now there is a picture only containing the lines of interest in the region of interest. The picture is now further processed a left and a right picture. For each part there is again a houghlines transformation with the same parameters. Since all lines should have similar slopes all the beginning and endpoints of the lines in each part of the image are averaged and an interpolated line is drawn.

Shortcomings

The algorithm has some trouble with bent parts and of objects are slightly within the region of interest.

Possible points of Improvement

1. Detecting bent lines up to a certain curvature threshold.
2. Only taking lines with a certain slope into consideration to not get lines mixed in which are caused by passing or leading car.