Finding Lane Lines on the Road

Writeup JP - Julia

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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 used the Gauss filter to extract interferences out of the image, afterwards I used the canny function to create an image of edges, then I created the region of interest using three points for a triangle. In the end I created the hough lines, which are shown as red lines in the image marking the lanes.

In order to draw a single line on the left and right lanes, I modified the draw_lines() function by first calculating the slope and center point of all lines and adding them to lists separating by right and left lanes. The next step was to average the data of center and slope to get a single value to create a single line for left and right. At the end I extrapolated the lines to the bottom of the image and a specific height using geometric relationships.

2. Identify potential shortcomings with your current pipeline

One potential shortcoming would be what would happen when a sharp curve appears.

Another shortcoming could be a very bumpy road, so that the region of interest maybe doesn't fit for this situation.

3. Suggest possible improvements to your pipeline

A possible improvement would be to extract more lines which are mistaken i.e. too vertical or horizontal.

Another potential improvement could be to use more than one line, maybe two lines could detect a sharp curve better