Finding Lane Lines on the Road

Writeup Template

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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

[//]: # (Image References)

[image1]: ./examples/grayscale.jpg "Grayscale"

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, applied Gaussian smoothing, detected the lines using Canny edge detection, defined my ROI (region of interest), and then applied Hough transform.

In order to draw a single line on the left and right lanes, I modified the draw_lines() function by first distinguish which point belong to the right line and which belong to the right line using the slope, then add these point to training lists for a “linear regression classifier” since I know that these point are defined correctly and let the classifier predict the y-coordinate of the extrapolated x-coordinates, then draw the lines
But when making the videos I defined the training lists as global to accumulate the training point resulting in a better classifier performance with each frame

2. Identify potential shortcomings with your current pipeline

One potential shortcoming would be what would happen when the video is a life video streaming, the accumulative lists will cause a memory overflow

Another shortcoming could be when the car is turning the ROI will change but in my code it’s fixed so the result will be missy

3. Suggest possible improvements to your pipeline

A possible improvement would be to make the lists hold the last number of frame’s points to prevent the system from overflowing

Another potential improvement could be to make a flexible ROI and somehow draw curves in addition to lines to do good curves detection.