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.

- I perform the pipeline formation in an image is as follow:

    1. Covert the image into gray scale
    2. Smooth image with Guassian distribution
    3. Detect edges with Canny edge detection
    4. Detect lane lines with Hough transform
    5. Merge the detected lane lines with the original image

    The image below shows a typical result:

- ## 2. Identify potential shortcomings with your current pipeline

    1. I pre-select the region of interest in the image, thus it only works in particular situations.

    2. The parameters selected for canny detection and Hough transform is pre-selected, the values are chosen based on trial-and-error, therefore it may not work in all situations

    3. Most of the detected lane lines are very straight, thus there is no guarantee that it also works well in curved lane lines.

- ## 3. Suggest possible improvements to your pipeline

    1. The parameters applied in canny edge detection and Hough transform should be chosen based on the image instead of pre-selected values.
    2. The image mask selection should be variable. Thus, it can adopt to different situation to select the region of interest in the image.