FINDING LANE LINES ON THE ROAD

Objectives:

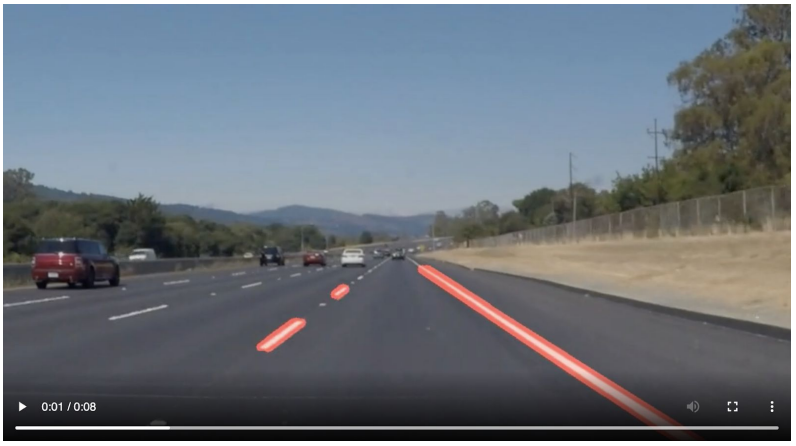
Finding Lane Lines on the Road

- Make a pipeline that finds lane lines on the road
- Reflect work and understanding describing steps in a writeup report.

General Pipeline Steps:

1. Convert the images to grayscale
2. Apply Gaussian blur to the image
3. Apply Canny Edge Detection (Canny already includes Gaussian Blur, however we use it also independently).
4. Define area of interest (in this case we used polyfit, defining vertices) and applying the mask.
5. Run Hough Transformation
6. Combining initial image with the image after Hough Transform, applying weighted_line() function
7. Test Pipeline in images

8. Run pipeline with different clips
    a. Clip 1: Solid white clip (Using simple helper function)



    b. Clip 2: Solid yellow clip (Using optimized helper function)

    c. Clip 3: Challenge Clip (Using challenge other helper functions)

d. Clip 4: San Salvador (Tested with own traffic video to understand possible potential shortcomings with the technique, the lane detection could be wrong using the algorithm with other videos and different parameterization or inputs should be required).

Potential exploration to solve these shortcomings would be:

1. Explore other filters and functions available in OpenCV or other algorithms
2. Other parameters selections playing (tuning) different thresholds, min/max, angles, curves, slopes,etc
3. Understand and explore the requirements for the input image (camera location, quality, etc) in order to discard implications from the original image.