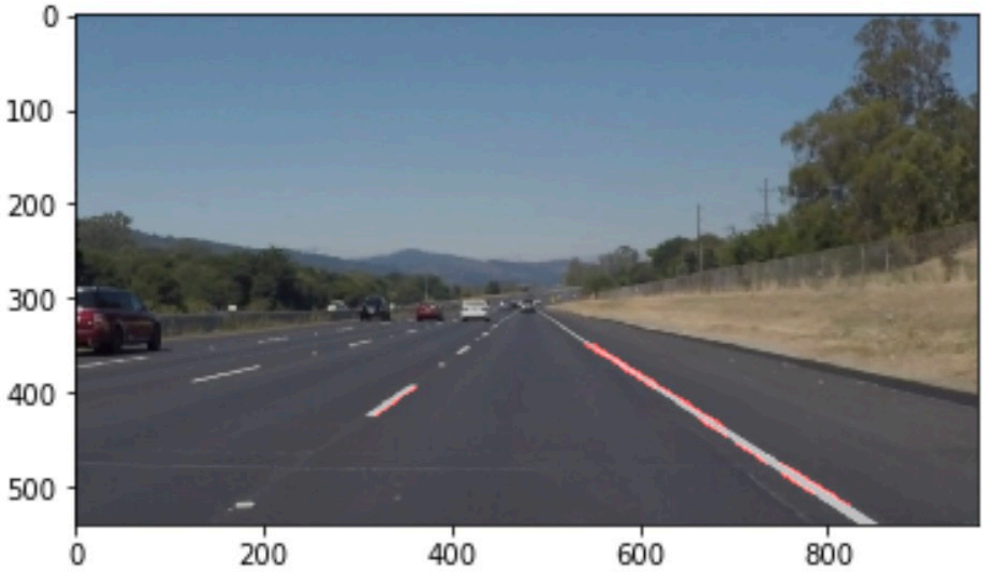
Pipeline

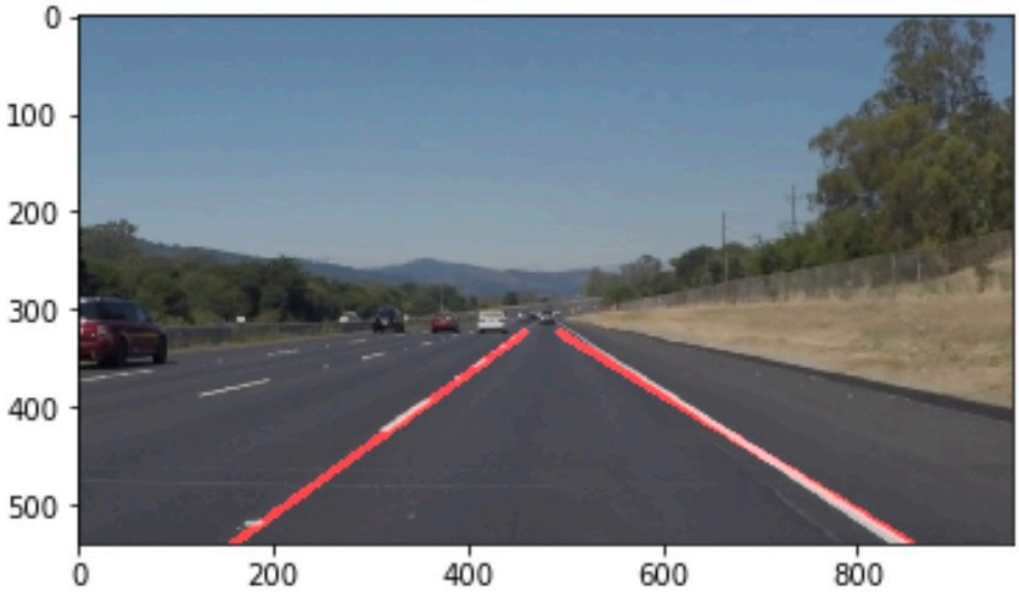
- Convert original images to a grey-scale images.
- Blur the grey-scale images with Gaussian method.
- Detect edges in blurry images with Canny method.
- Mask some regions that must not be lane lines.
- Detect lane lines with Hough Transform method.

Now most lines of what we have detected are lane lines.



Modify

- Add a function(region_of_ignore) that can mask regions that should be ignored between two lane lines.
- Limit slopes and positions of detected lines. Some wrong lane lines can be deleted. (draw_lines)
- Calculate average positions and slopes of the left lane line and the right line. (draw_lines)
- According to last calculation, draw two lane lines in proper positions.



potential shortcomings

- If lane lines have been damaged, detection will be affected deeply.
- If a car is driven in a low contrast environment. Detection will be affected deeply.
- What we detect are edges of lane lines. Therefore, it’s not a direct method to detect them.

potential improvement

- In my opinion, choices of parameters are a kind of trade-off. I don’t know what’s the most proper parameters in Canny detection and Hough Transform.
- We can set more proper mask region so that some noise can be ignored.