Report

test5.jpg:

I chose this as my first picture to run through the code as it had both the white and they yellow colour. Step 1 and 2 were easy as we had done them before, hence, I used some of my old code to complete them.

(Continuation on next page)

Step 3:

In step 3 getting the colour ranges correct was probably the hardest part. I used trial and error to find the correct ranges. My initial colour ranges for this picture turned out to work fine, but I later realized that those ranges did not work for every picture, as you may see in test12.jpg's filtered image.

I felt that for white the range of (H = 0 to 100, S = 0 to 30, V = 160 to 255) and for yellow (H = 95 to 110, S = 50 to 150).

Step 4:

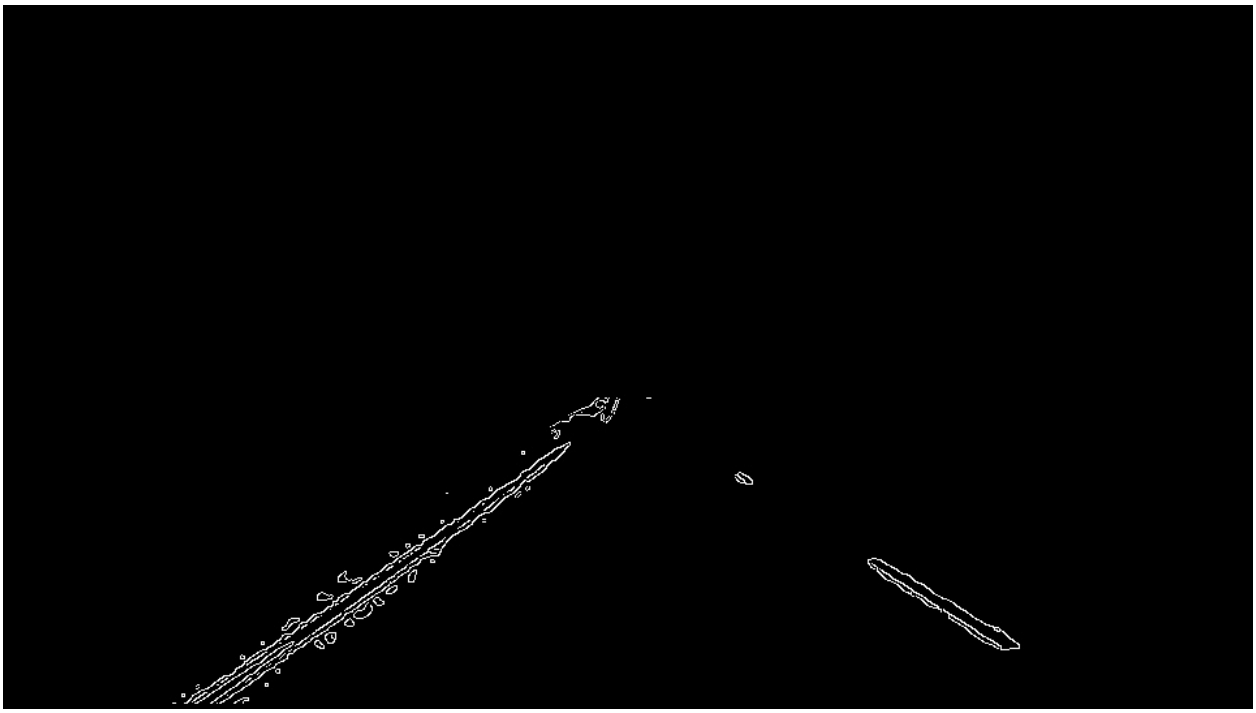
For step 4, I deviated from how the assignment pdf was instructing on how to do it as I got confused as to what to do with variable B. So, I chose to not use it and just take the canny edge detection of the result from step 3, which seemed to work fine. I felt that 50, 150 was the best value for canny edge detection.

(Continuation on next page)

Step 5:

In step 5 I initially started trying to make the shapes to cover the black area through loops, but after I found I could use the inbuilt function cv2.fillpoly(), everything became much easier, and it was just a matter of giving it the correct coordinates for a good region selection. My region selection was a little different, as instead of a single trapezoid as a mask, I made 3 trapezoids to cover the unwanted area.

In images test15.jpg and test24.jpg, without a good region selection the end result was not correct.



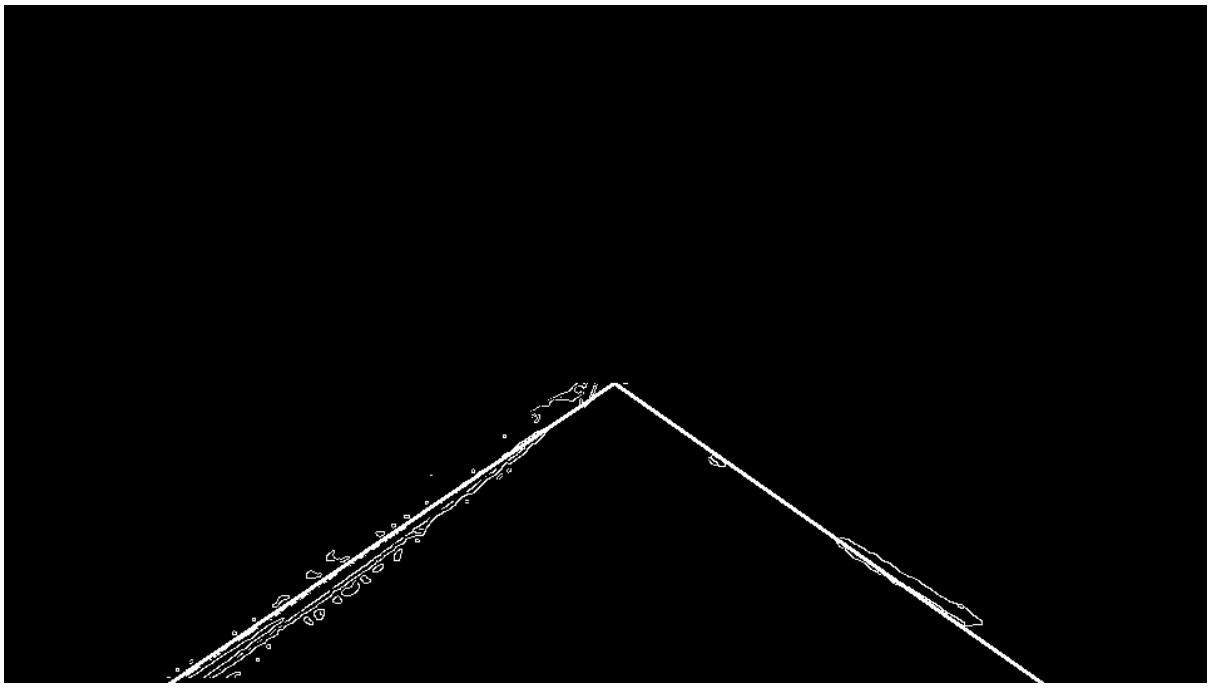
(Continuation on next page)

Step 6,7,8:

This step was clearly the hardest and the next 2 steps I completed along with completing this step, unknowingly. I searched online for how to write the code, then after many agonizing hours of understanding the code and how to use the accumulator, rhos and thetas I finally finished step 7 and 8 along with it.

For the angles, I limited theta to and angle of 45 to 70 for the line on the left, and -90 to -45 for the line on the right, so only lines with that angle would be checked. Next, I check the theta with the corresponding most value in the accumulator, which essentially contains the number of times an angle was seen in the image. The highest value of the accumulator in both these ranges was used for the lines.

It was later that I found out that we were allowed to just use the inbuilt function, that information, had it been in the assignment pdf, would have been very useful, and would have saved me many hours of work which I could have spent on my other assignments, or just doing anything other than this, however, I can’t change that now.



test1.jpg:

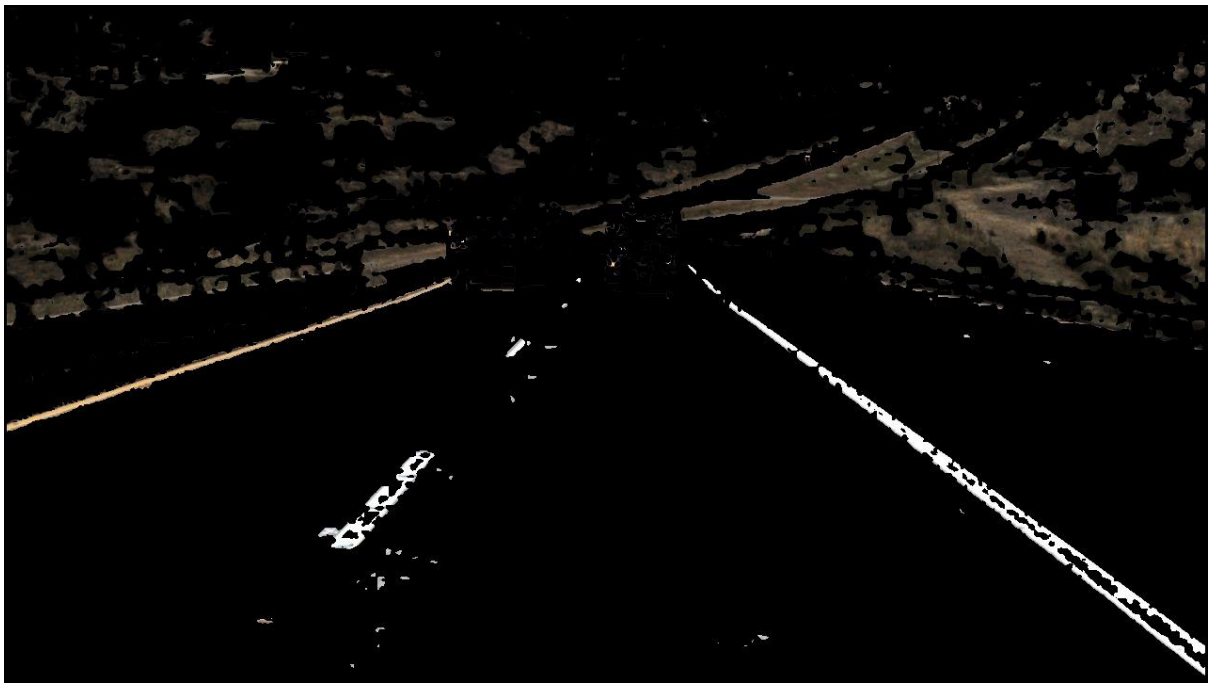
Step 3:

Step 5:

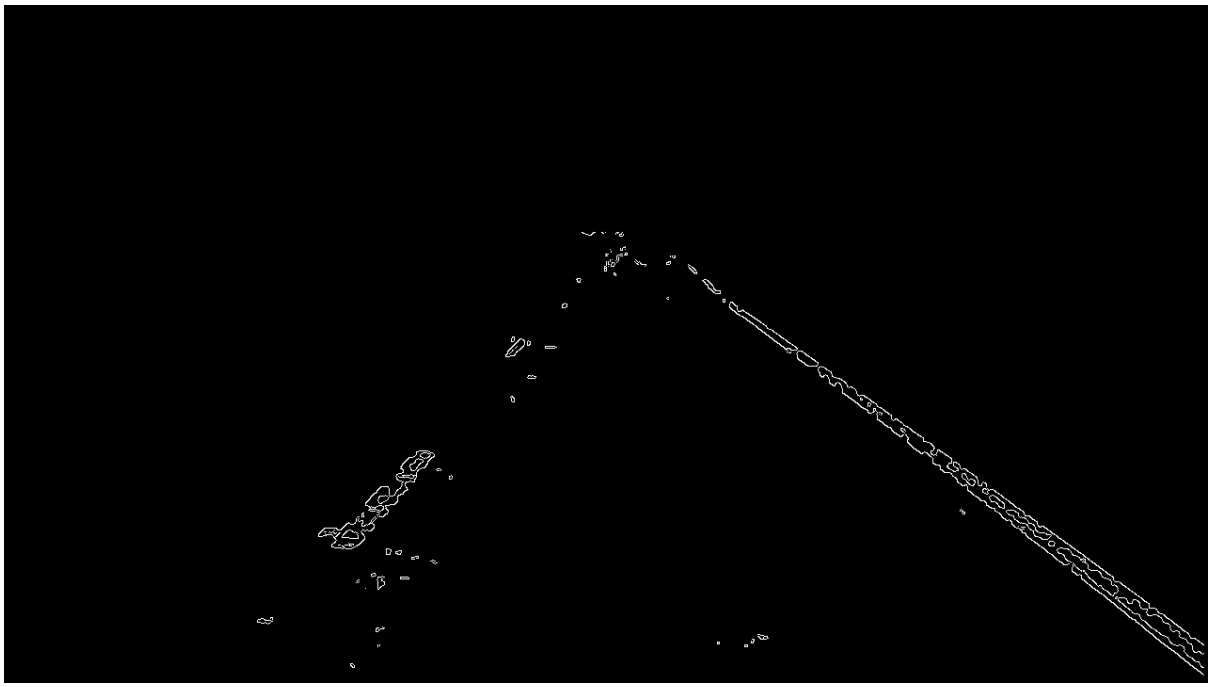
Step 8:

test2.jpg:

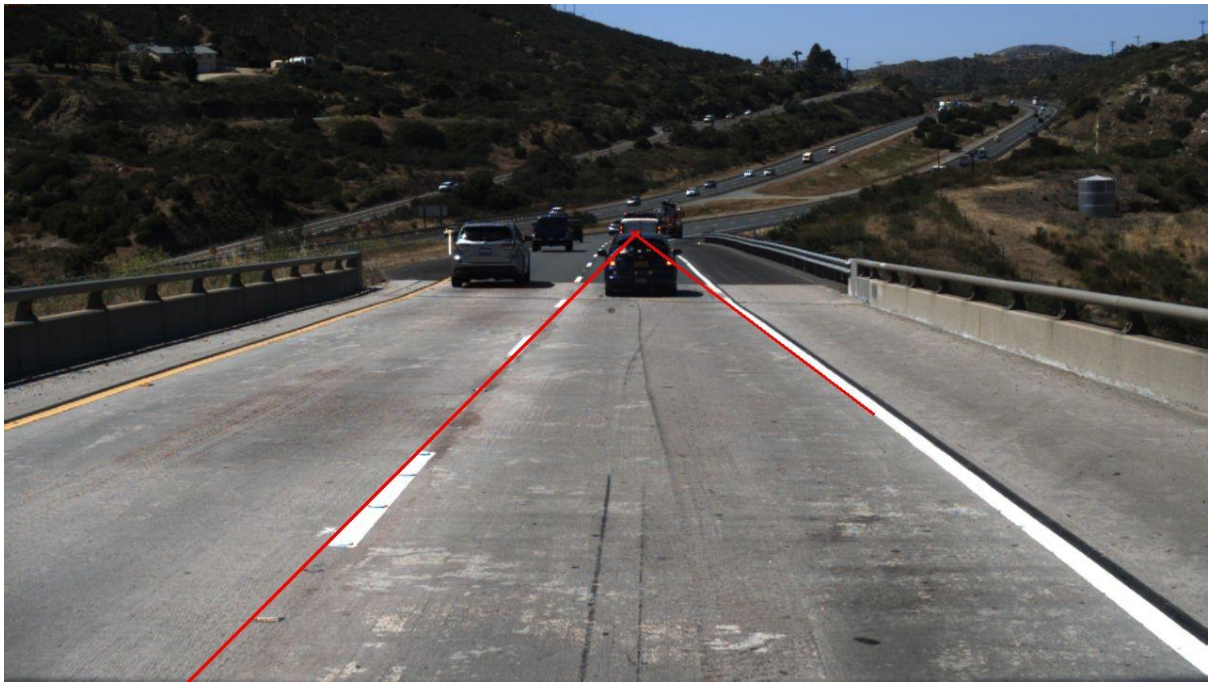
Step 3:



Step 5:

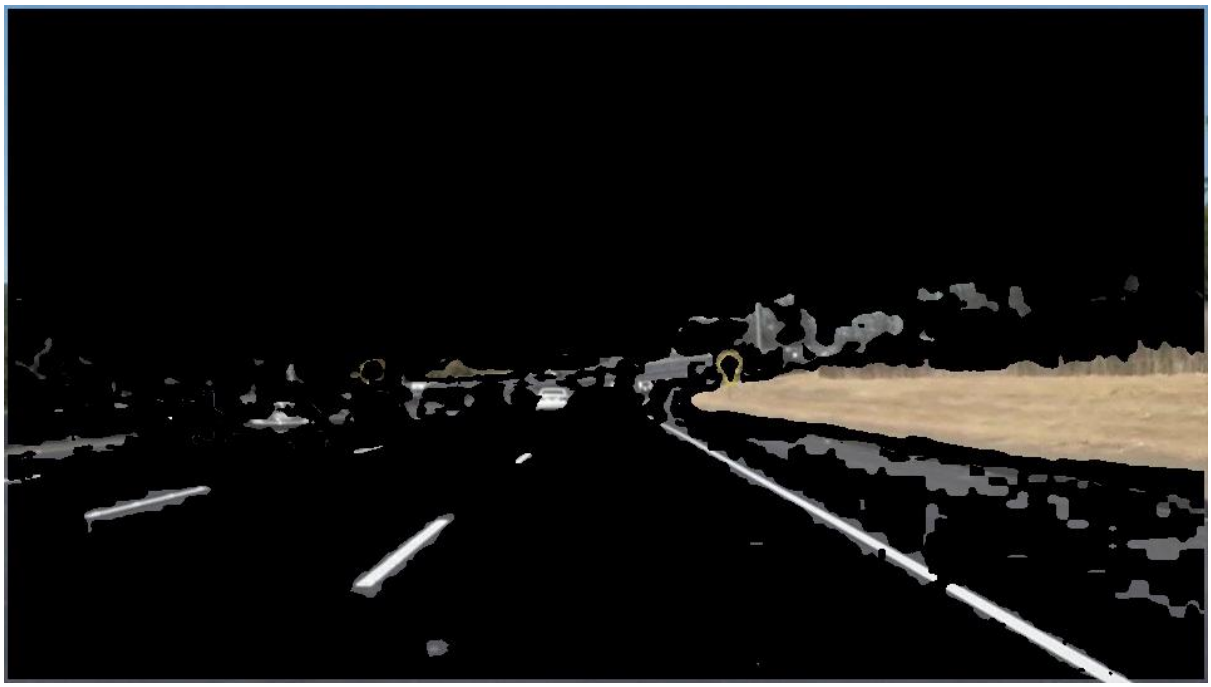


Step 8:

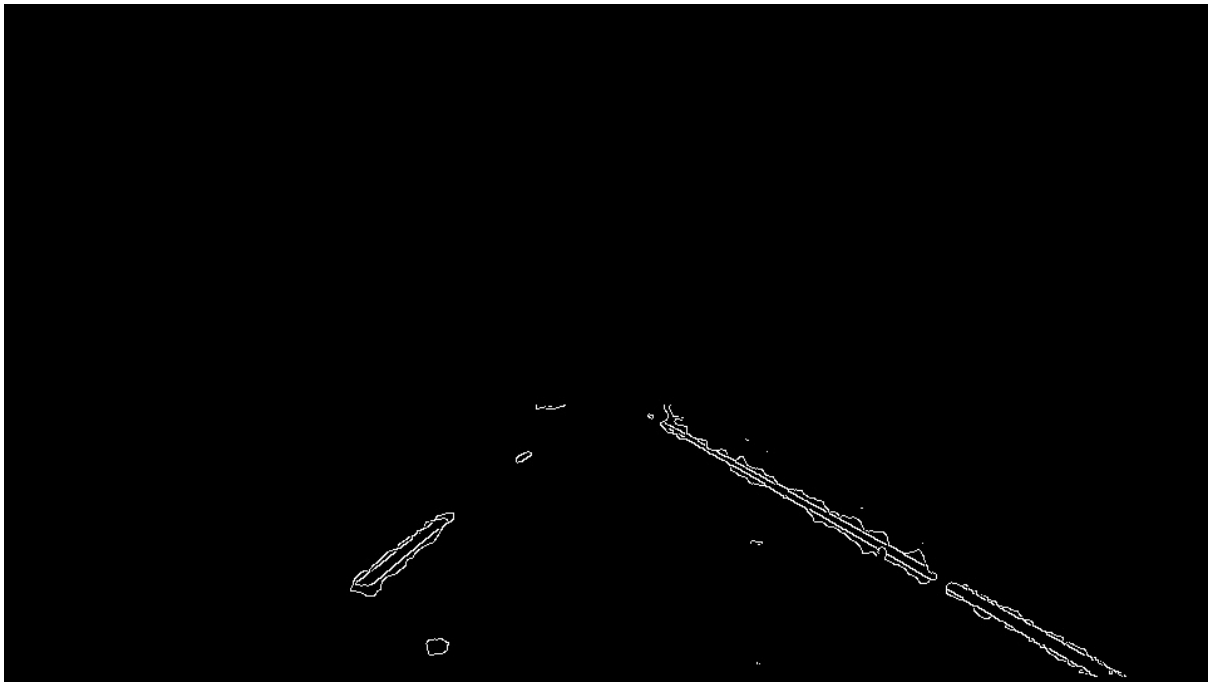


test3.jpg:

Step 3:



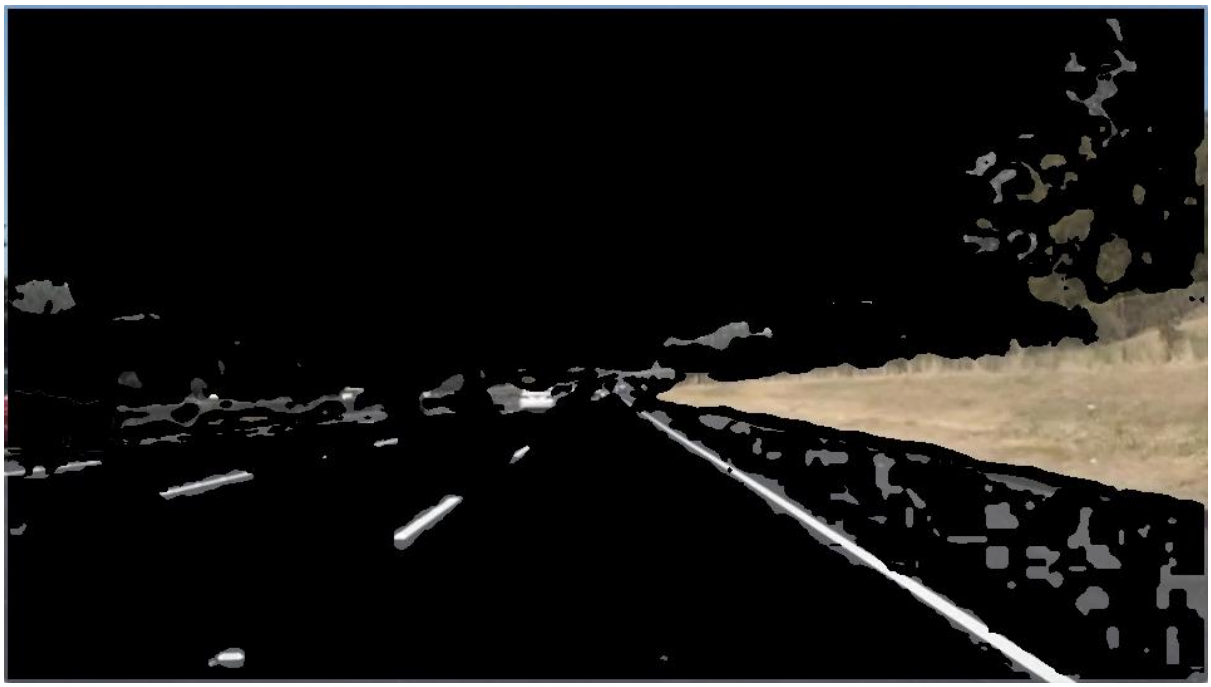
Step 5:



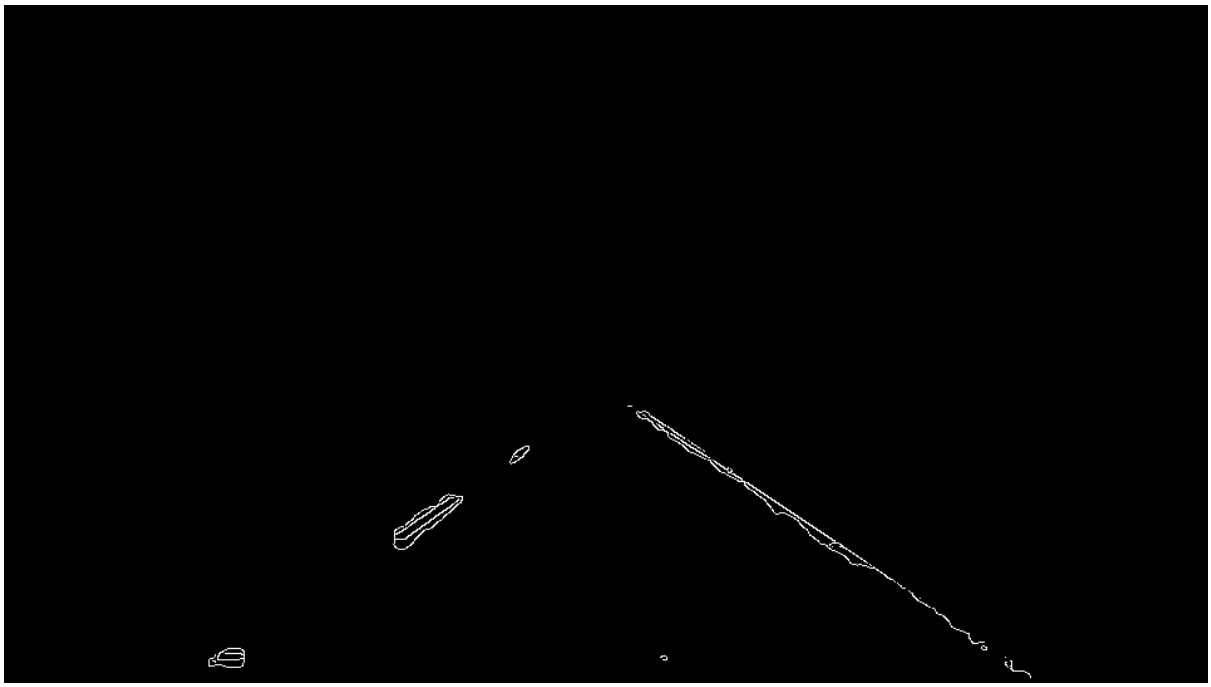
Step 8:

Test4.jpg:

Step 3:



Step 5:

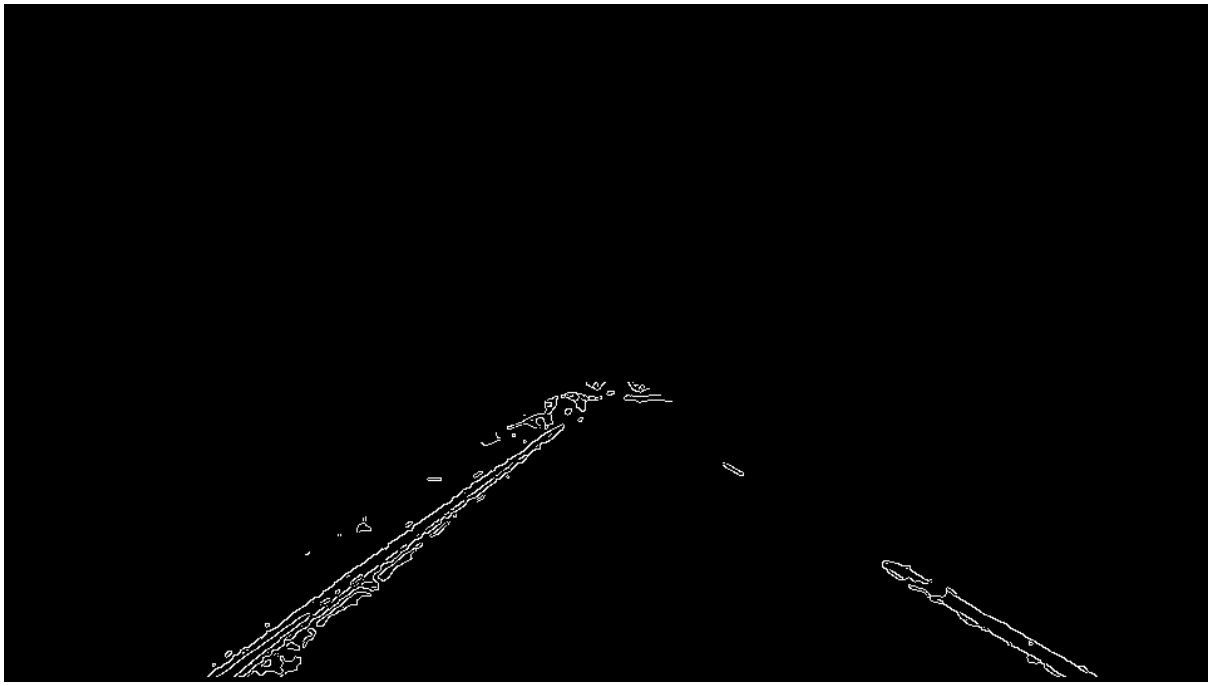


Step 8:

test6.jpg:

Step 3:

Step 5:



Step 8:

test7.jpg:

Step 3:

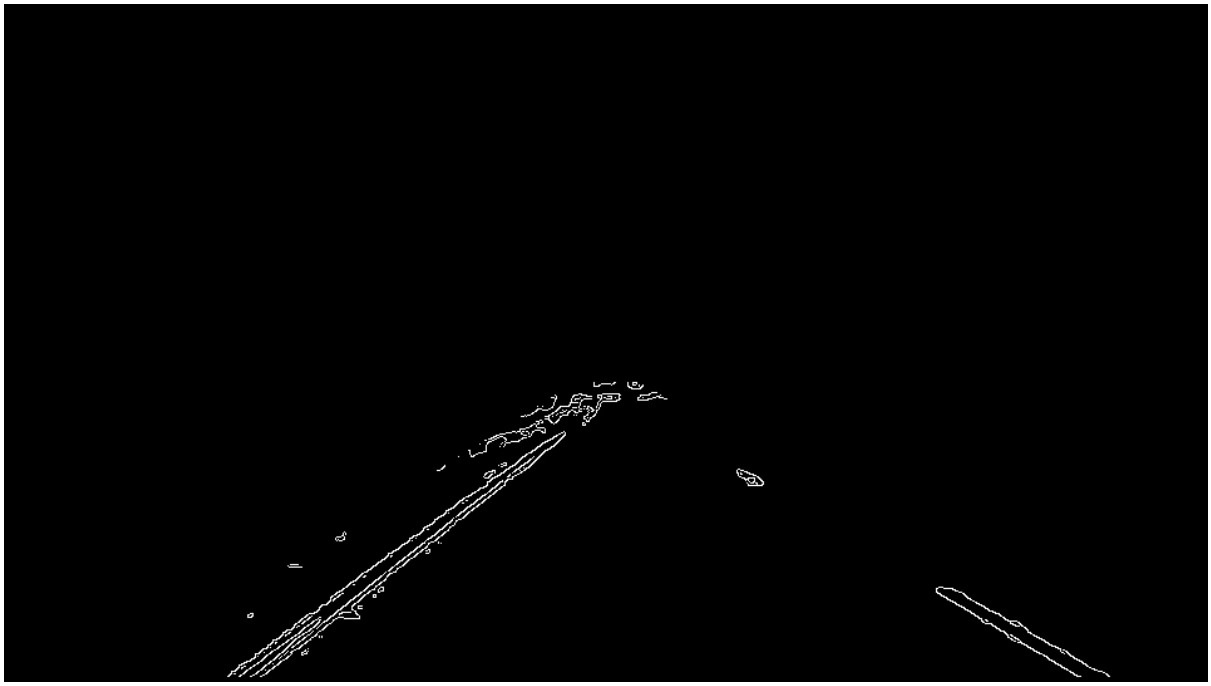
Step 5:

Step 8:

test8.jpg:

Step 3:

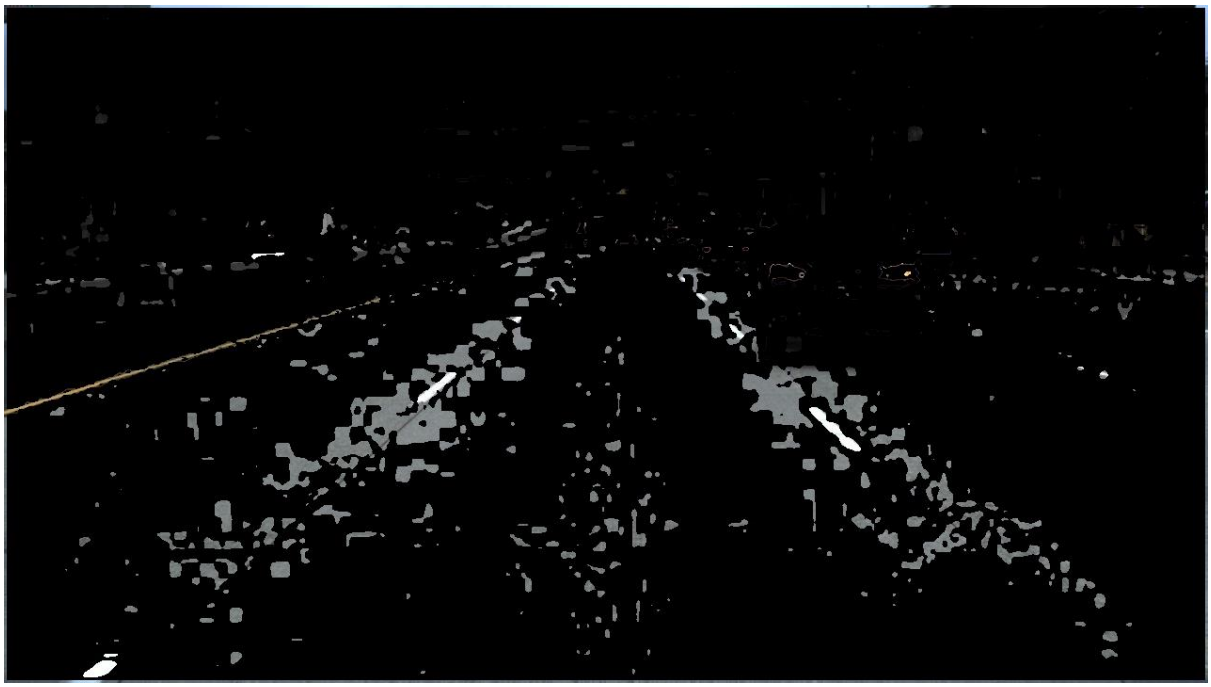
Step 5:



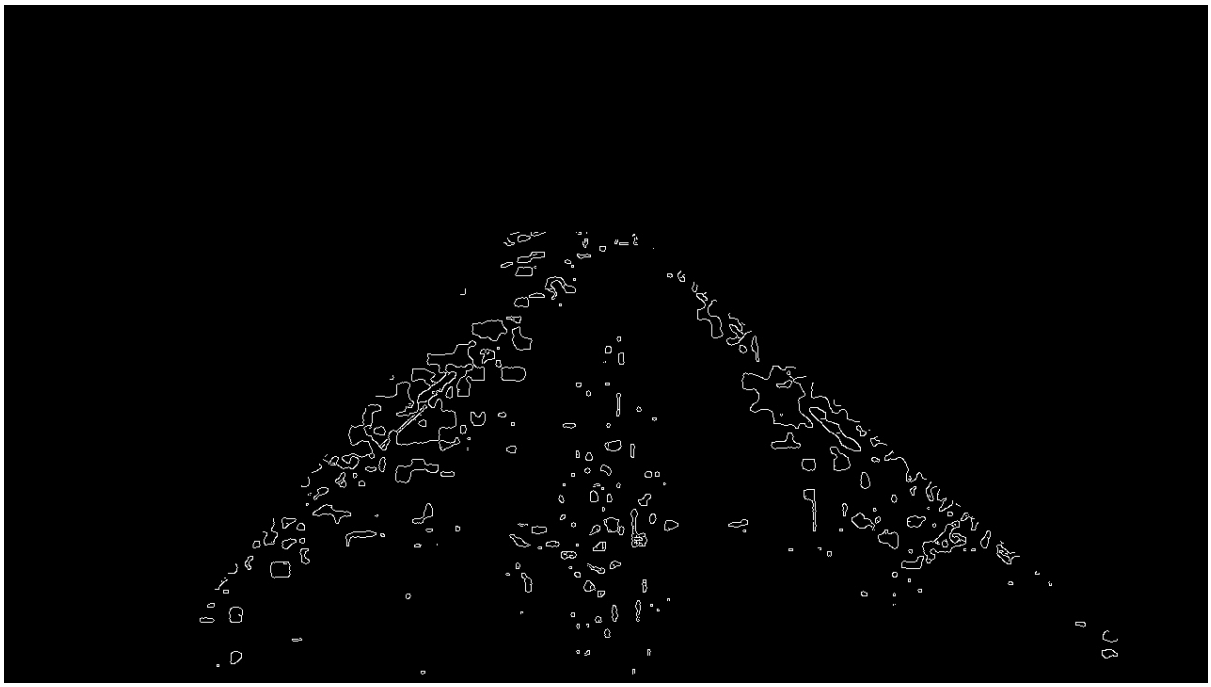
Step 8:

Test9.jpg:

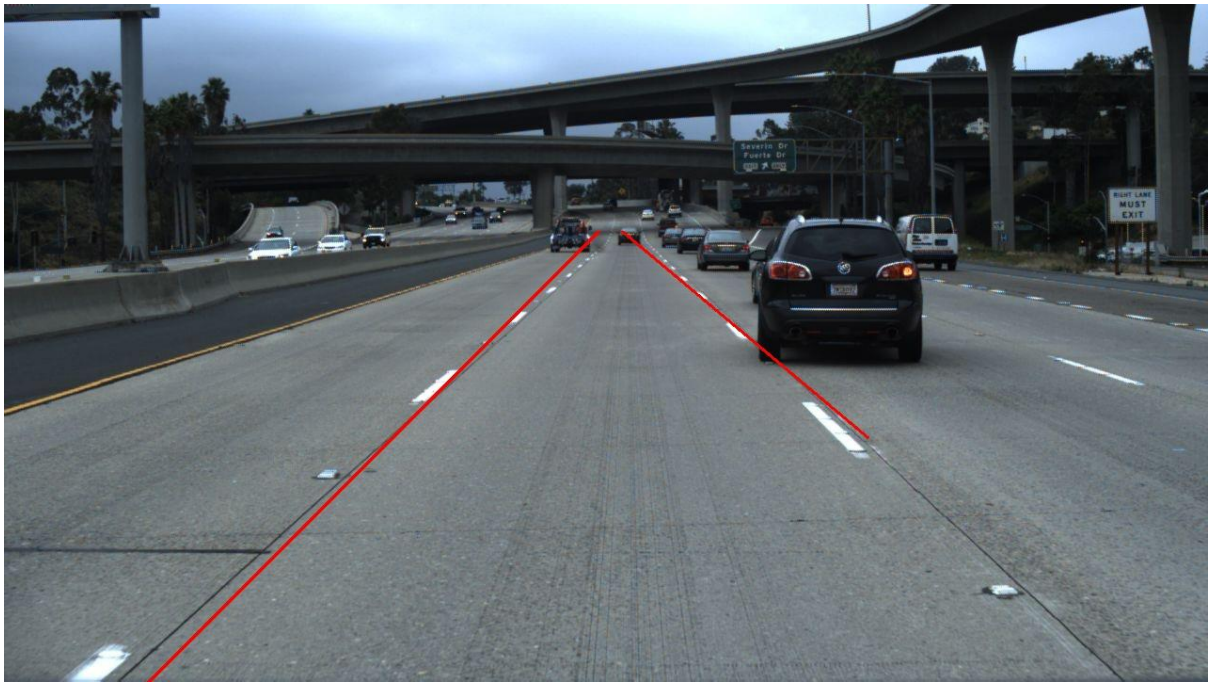
Step 3:



Step 5:

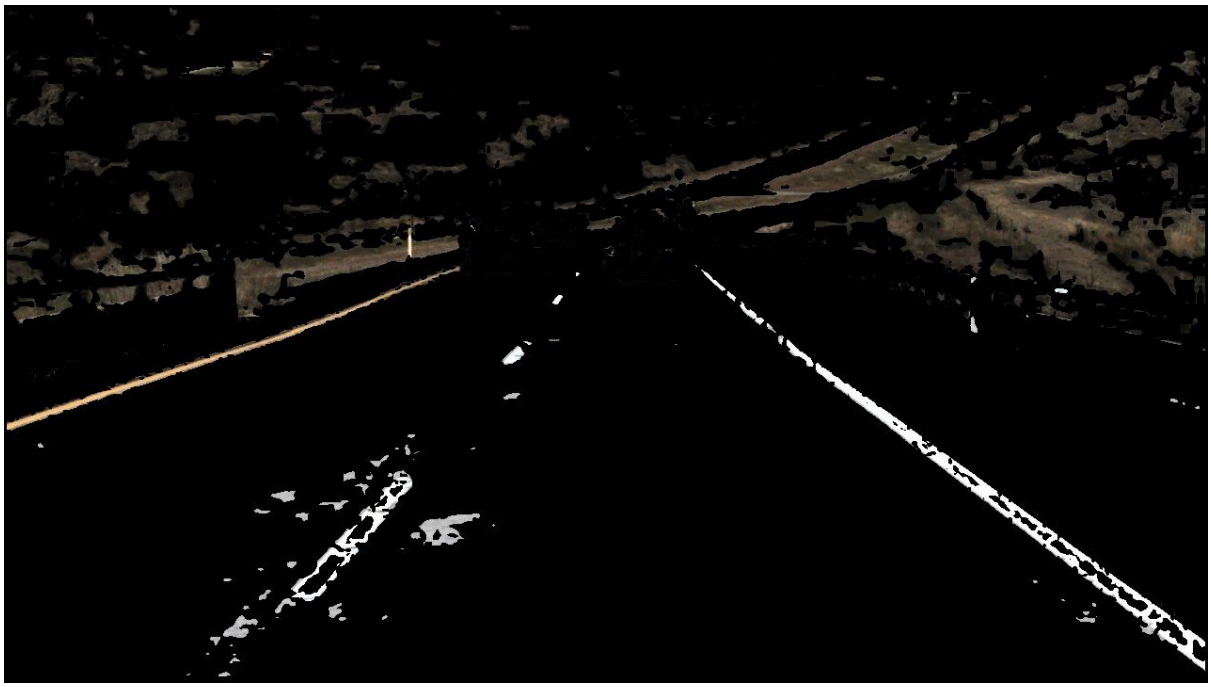


Step 8:

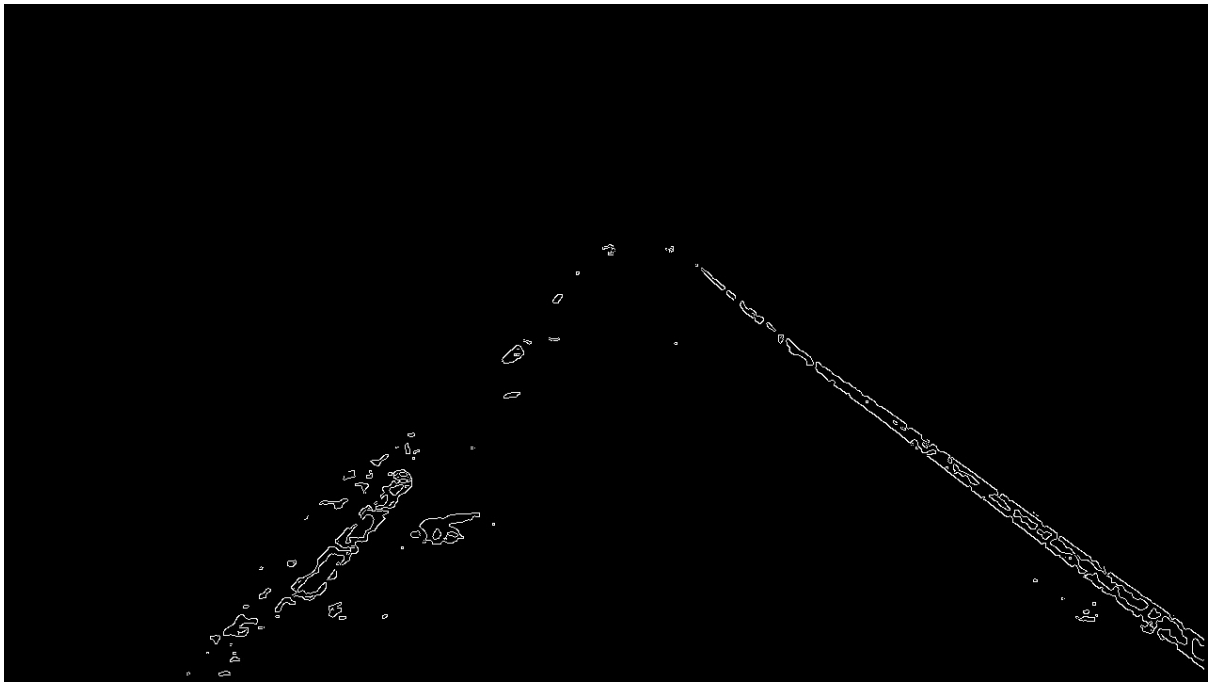


Test10.jpg:

Step 3:



Step 5:

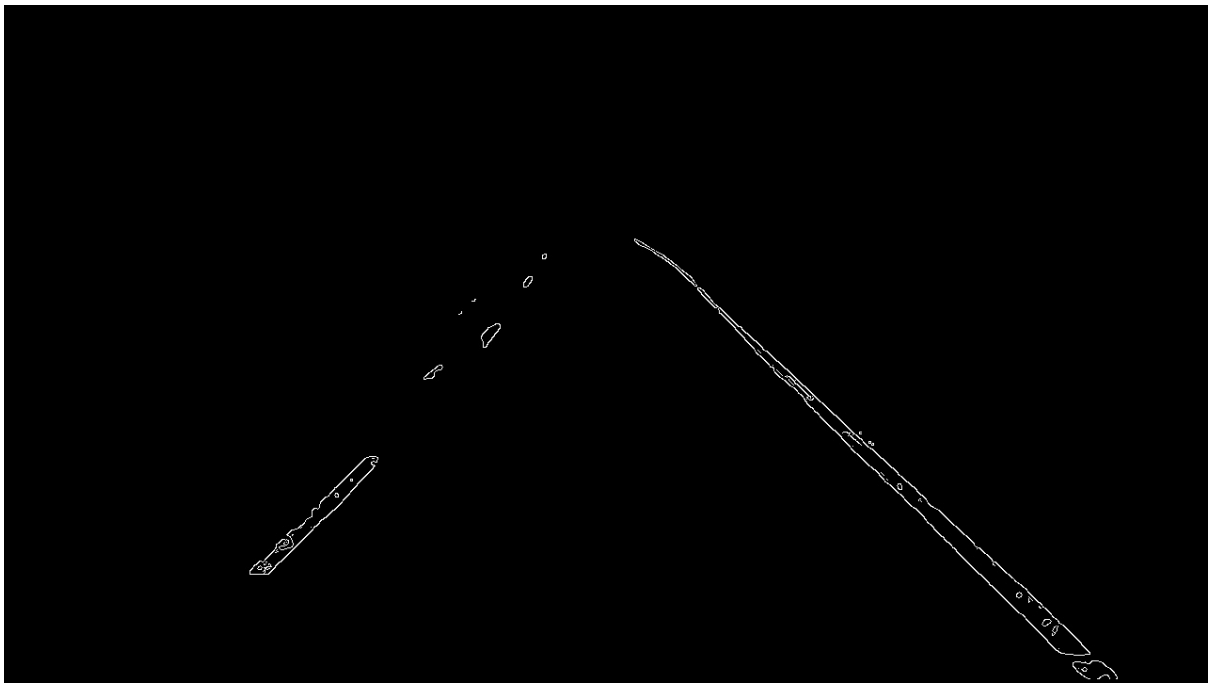


Step 8:

Test11.jpg:

Step 3:

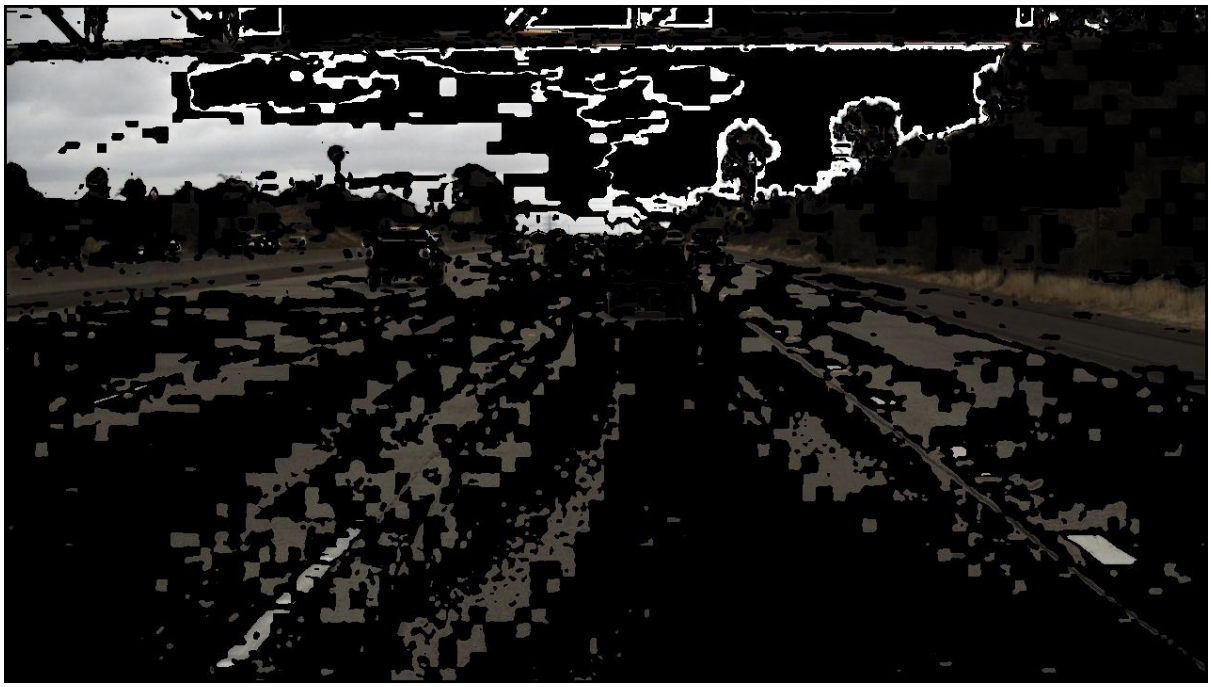
Step 5:



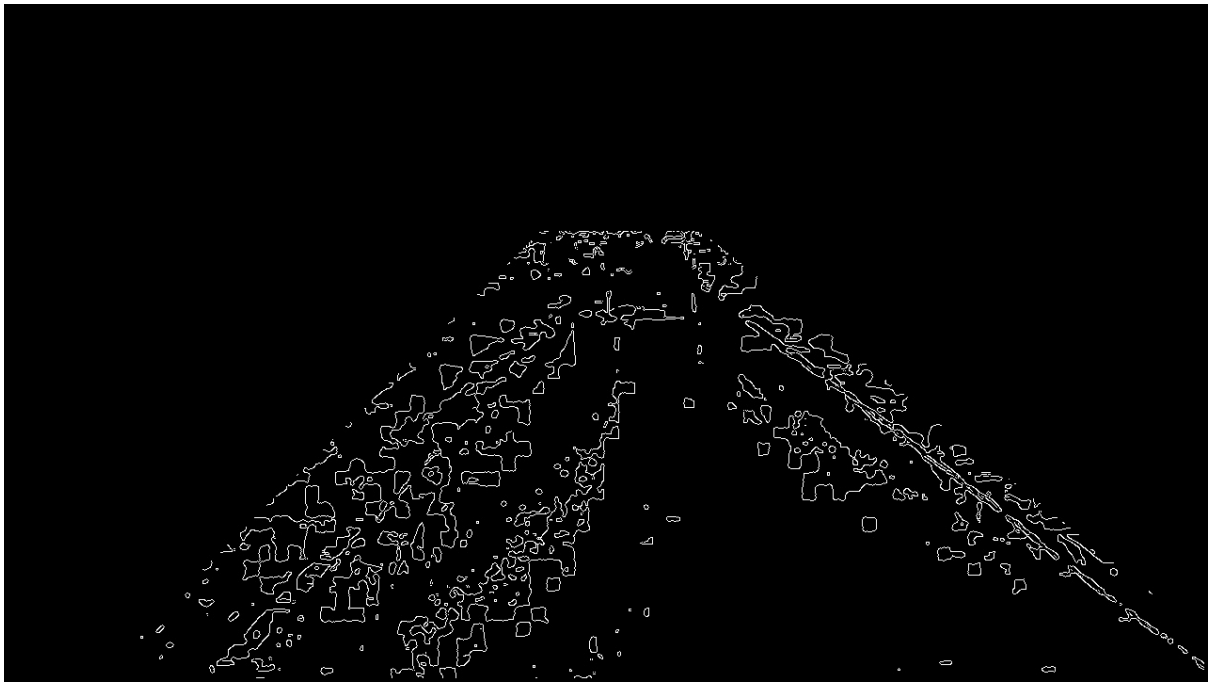
Step 8:

Test12.jpg:

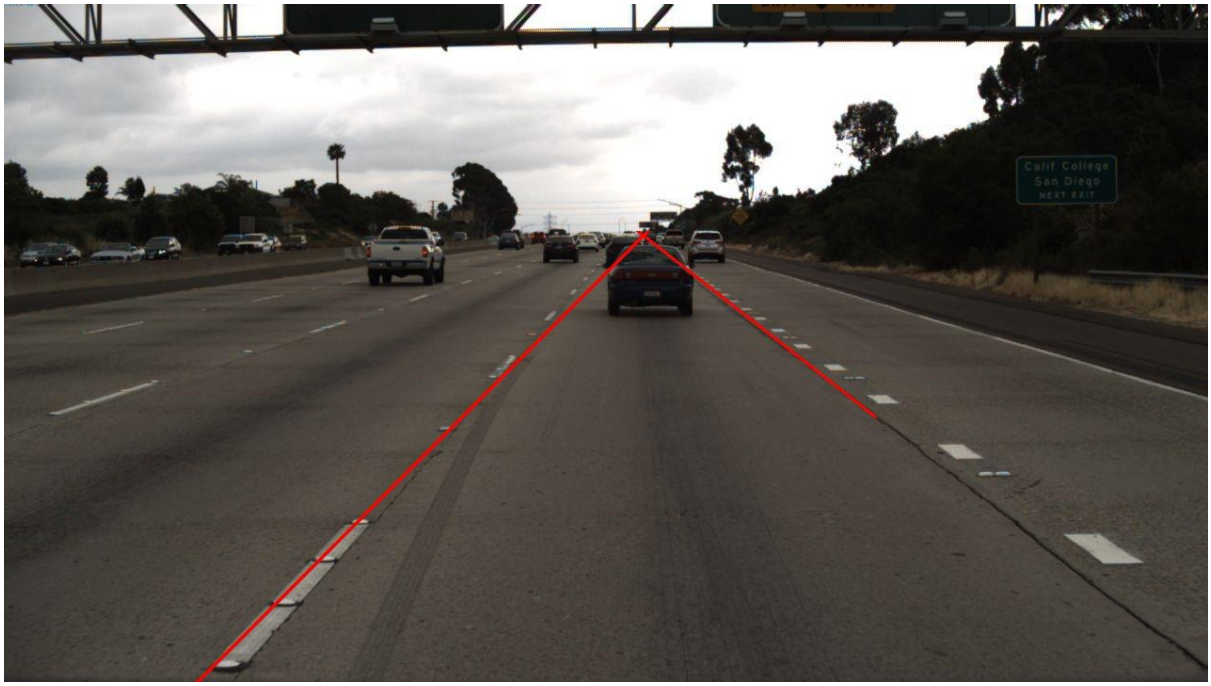
Step 3:



Step 5:



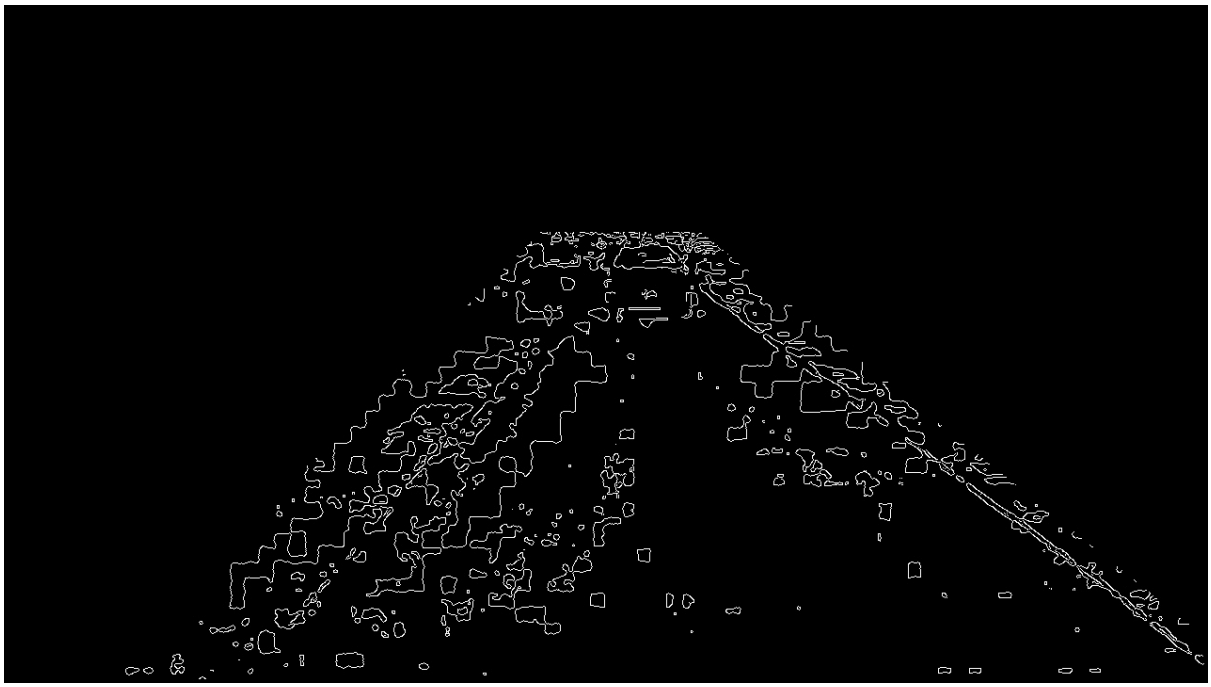
Step 8:



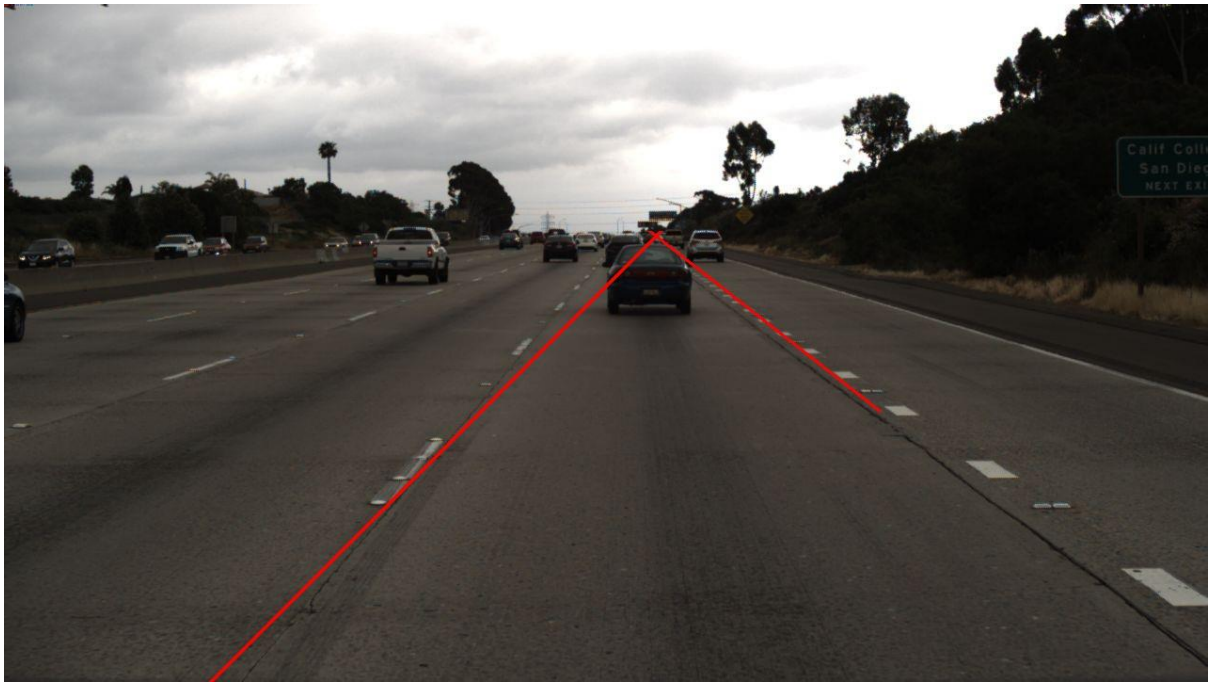
Test13.jpg:

Step 3:

Step 5:



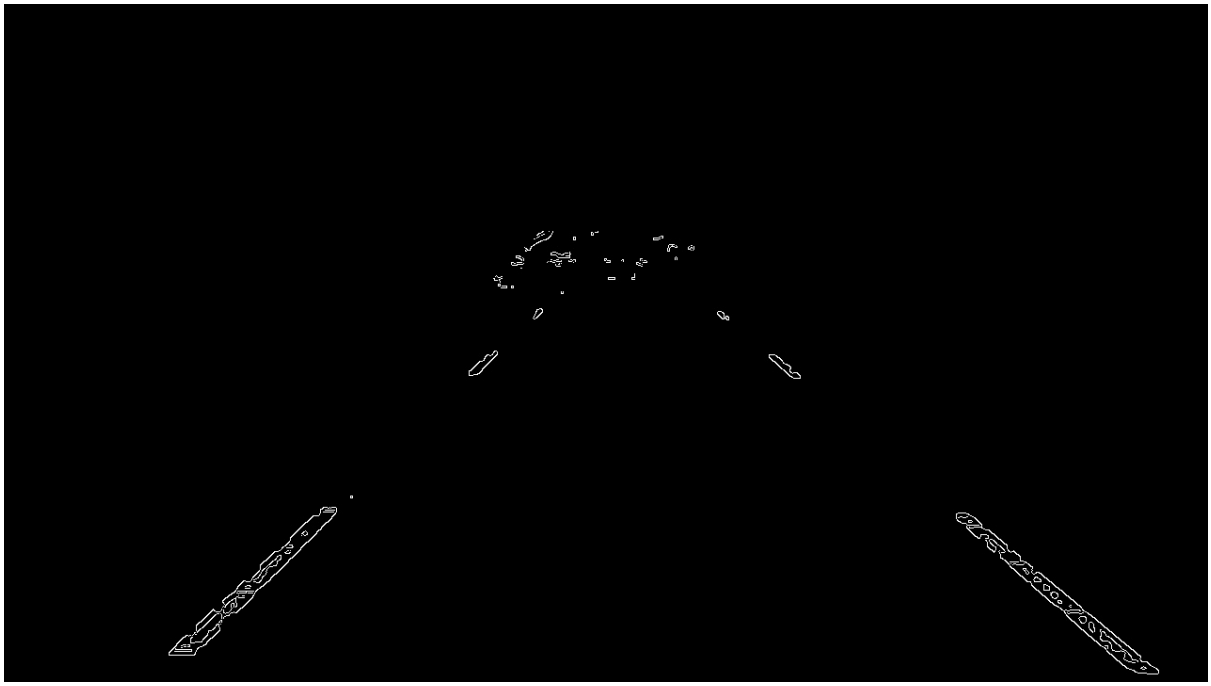
Step 8:



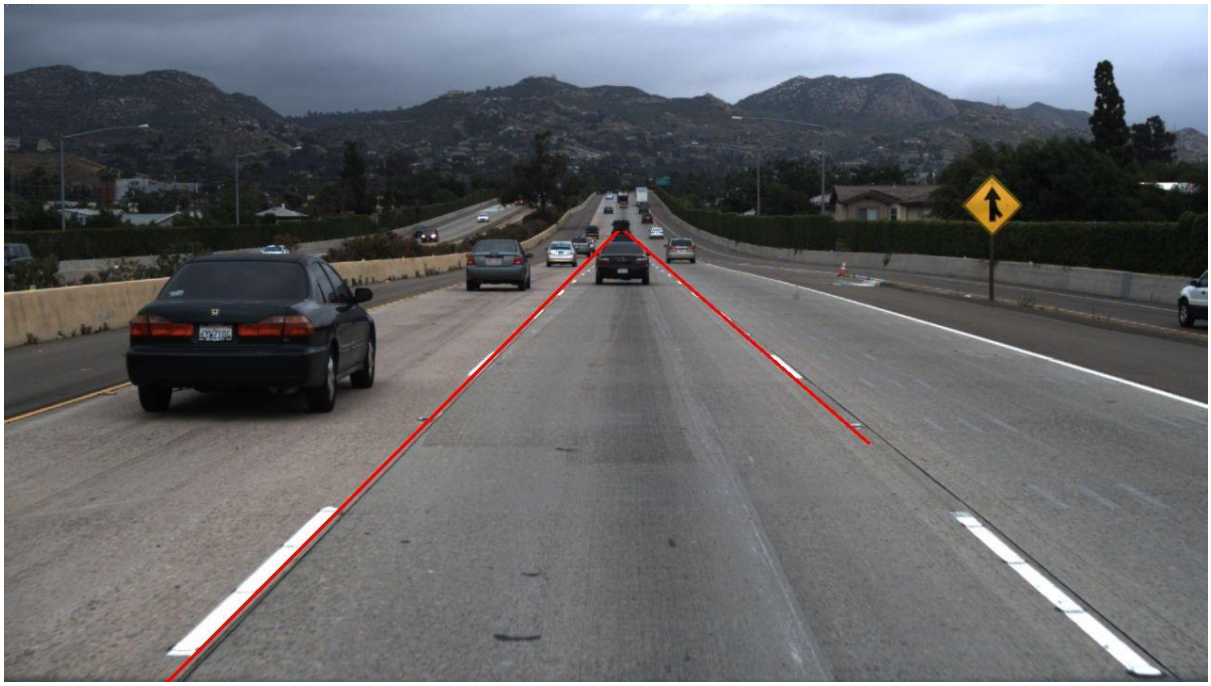
Test14.jpg:

Step 3:

Step 5:

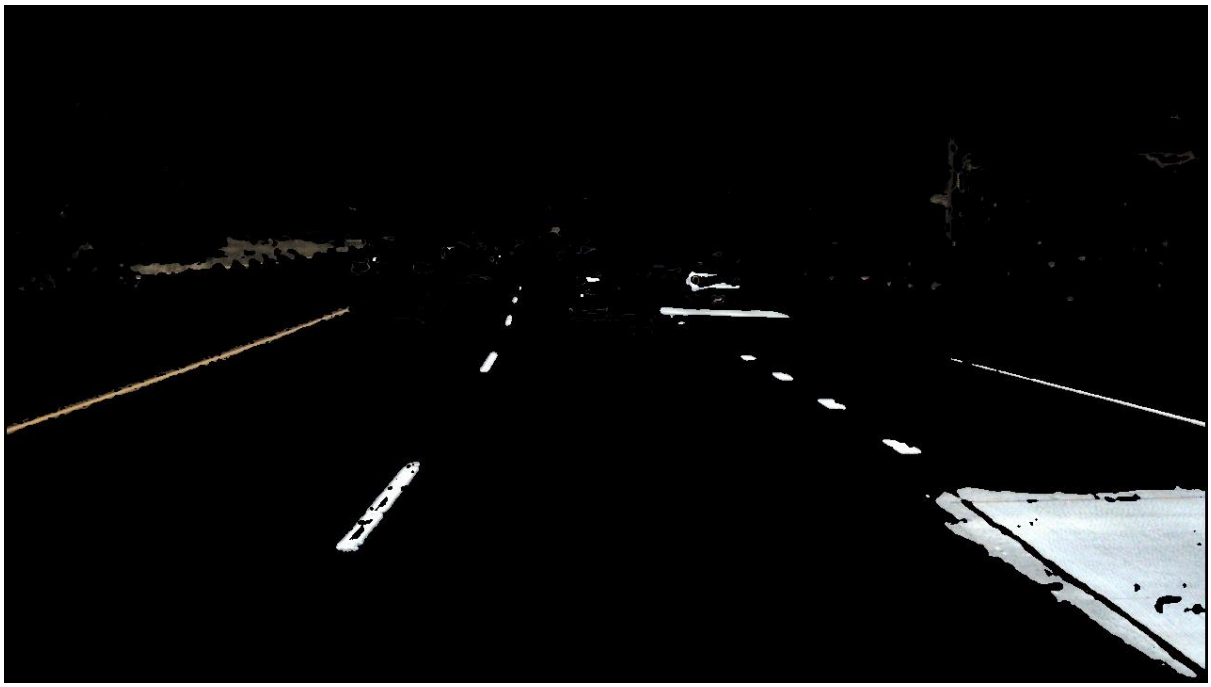


Step 8:



Test15.jpg:

Step 3:

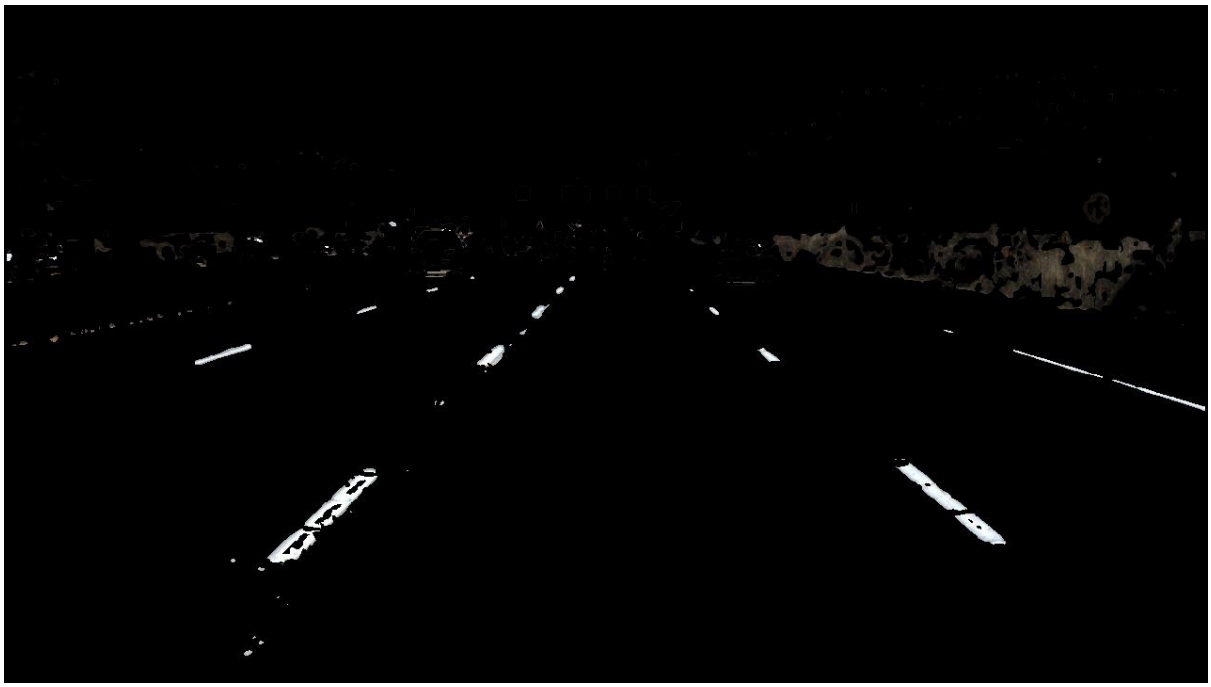


Step 5:

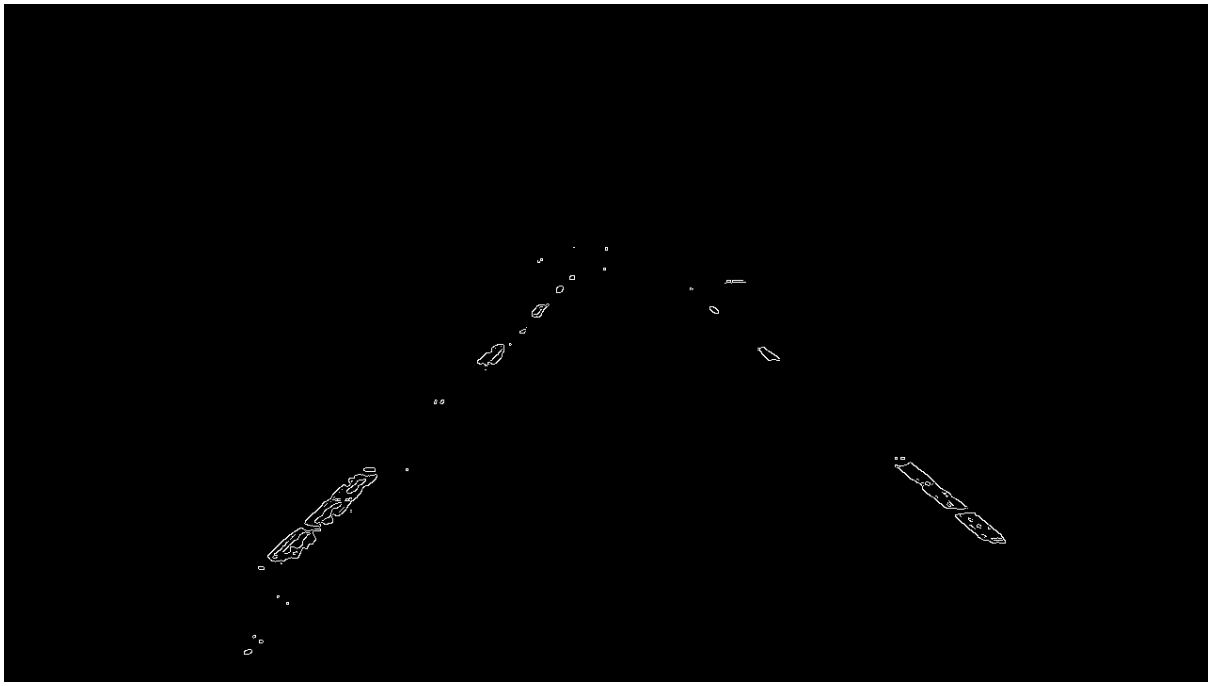
Step 8:

Test16.jpg:

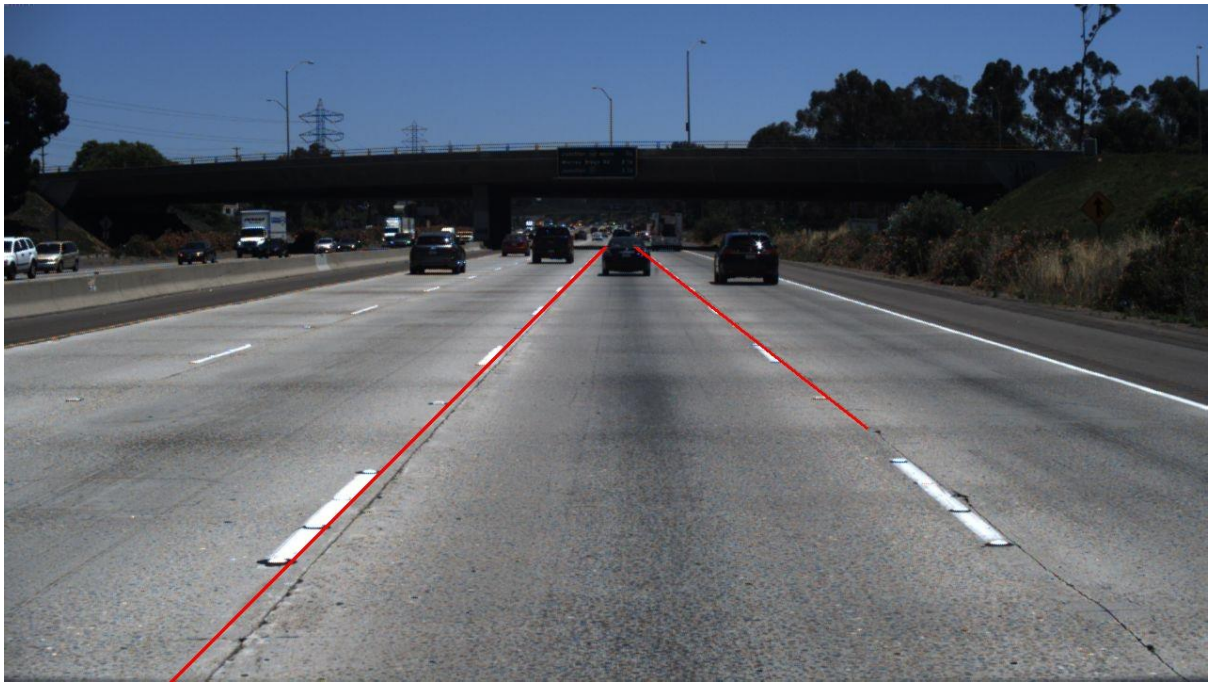
Step 3:



Step 5:



Step 8:



Test17.jpg:

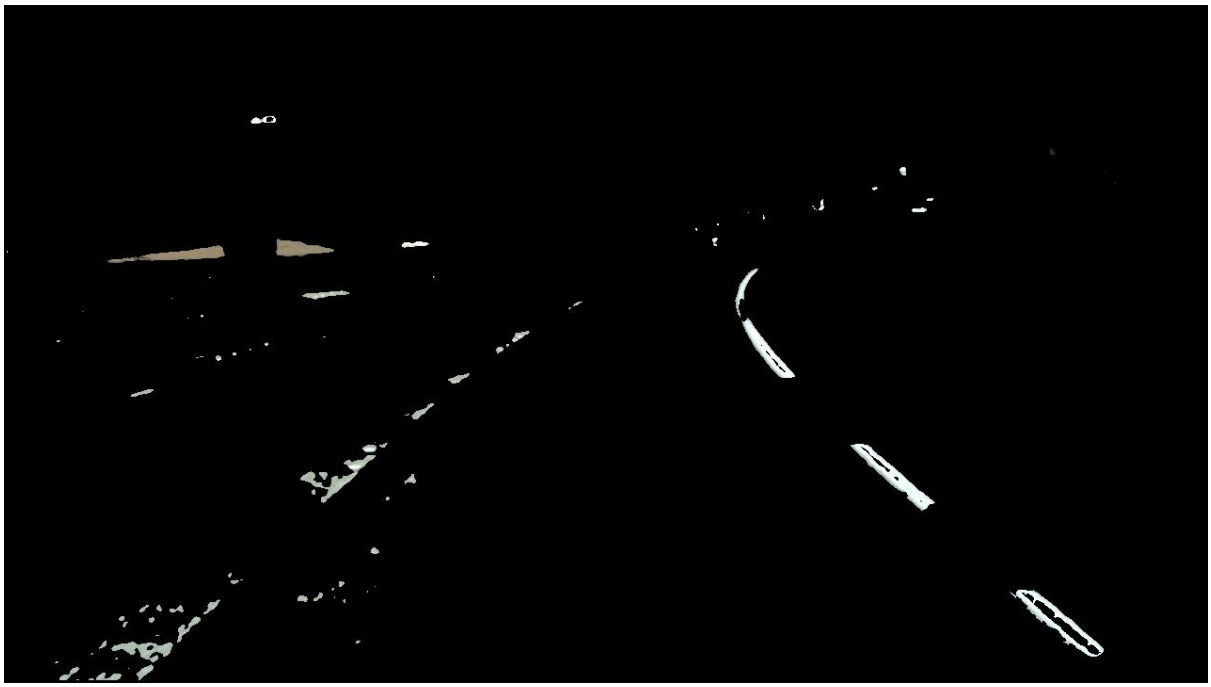
Step 3:

Step 5:

Step 8:

Test18.jpg:

Step 3:



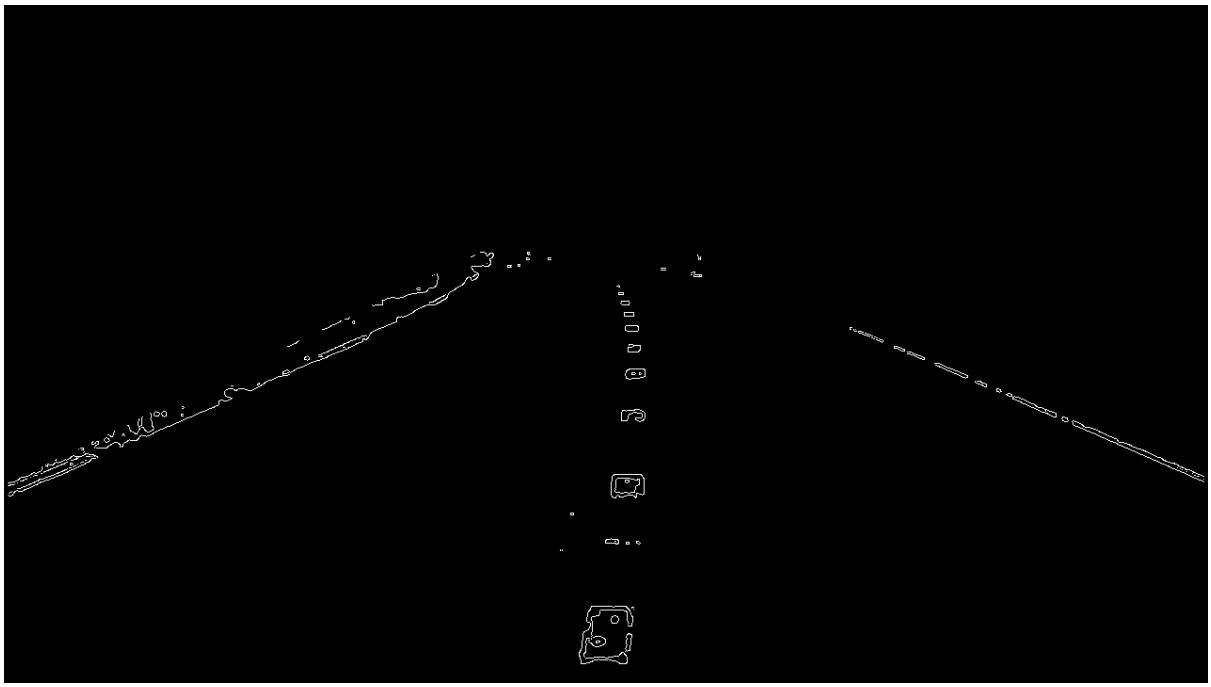
Step 5:

Step 8:

Test19.jpg:

Step 3:

Step 5:

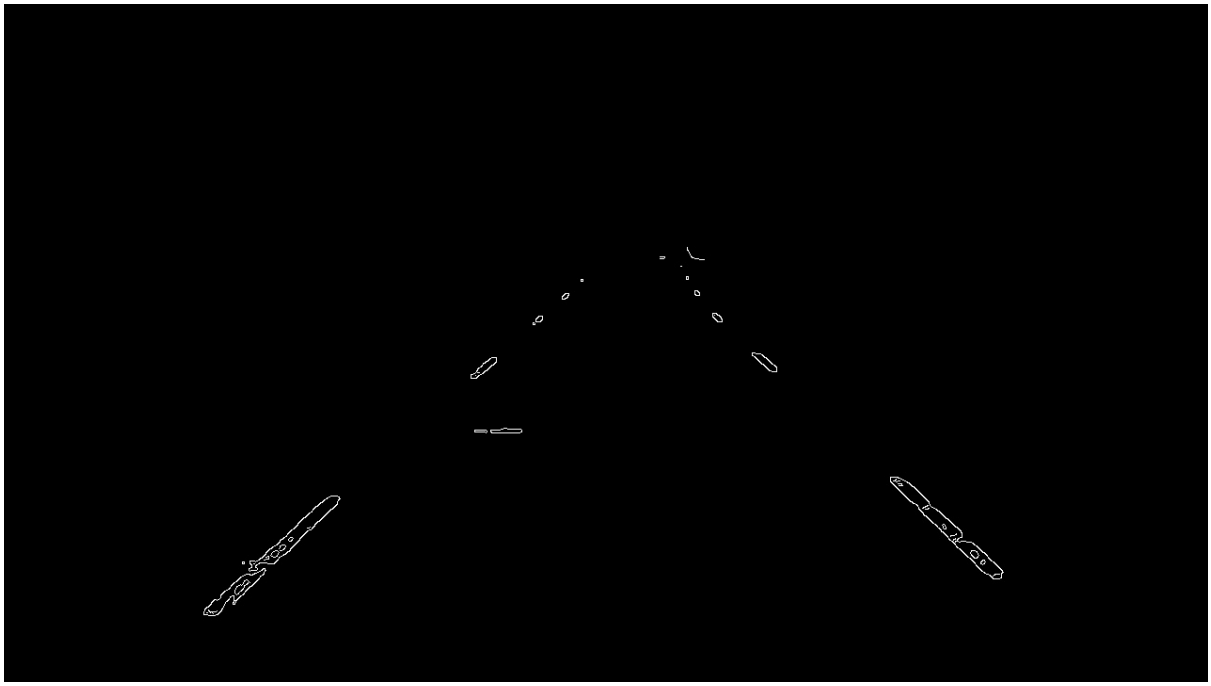


Step 8:

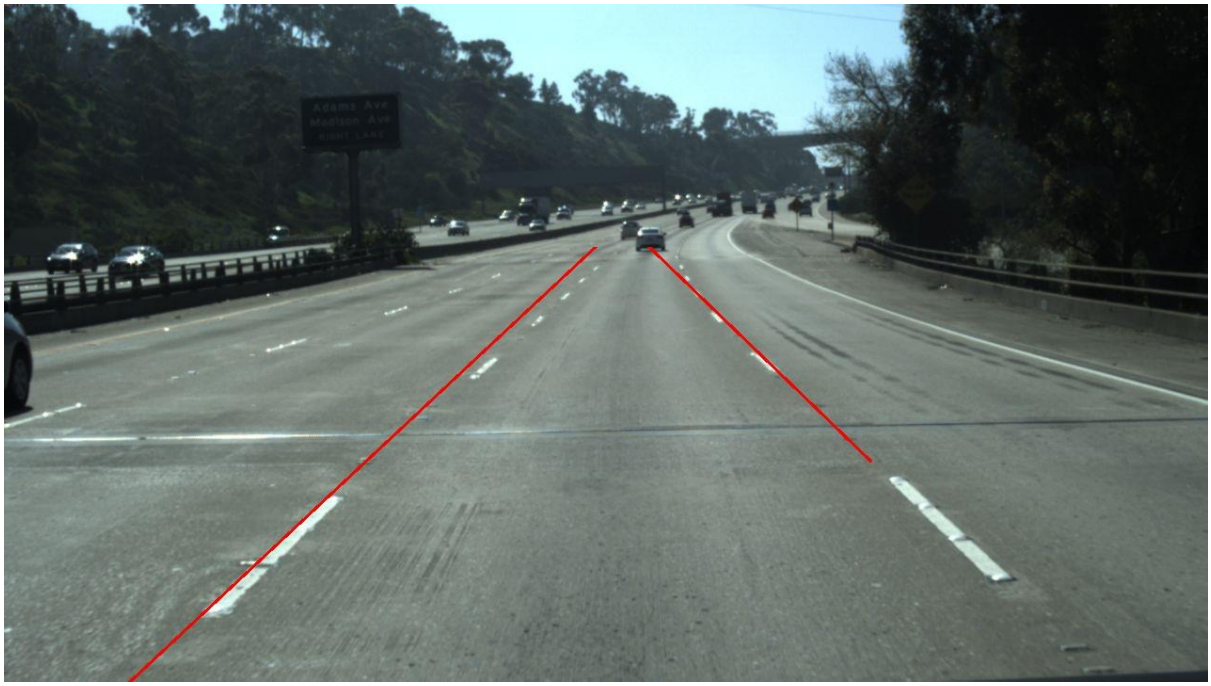
Test20.jpg:

Step 3:

Step 5:



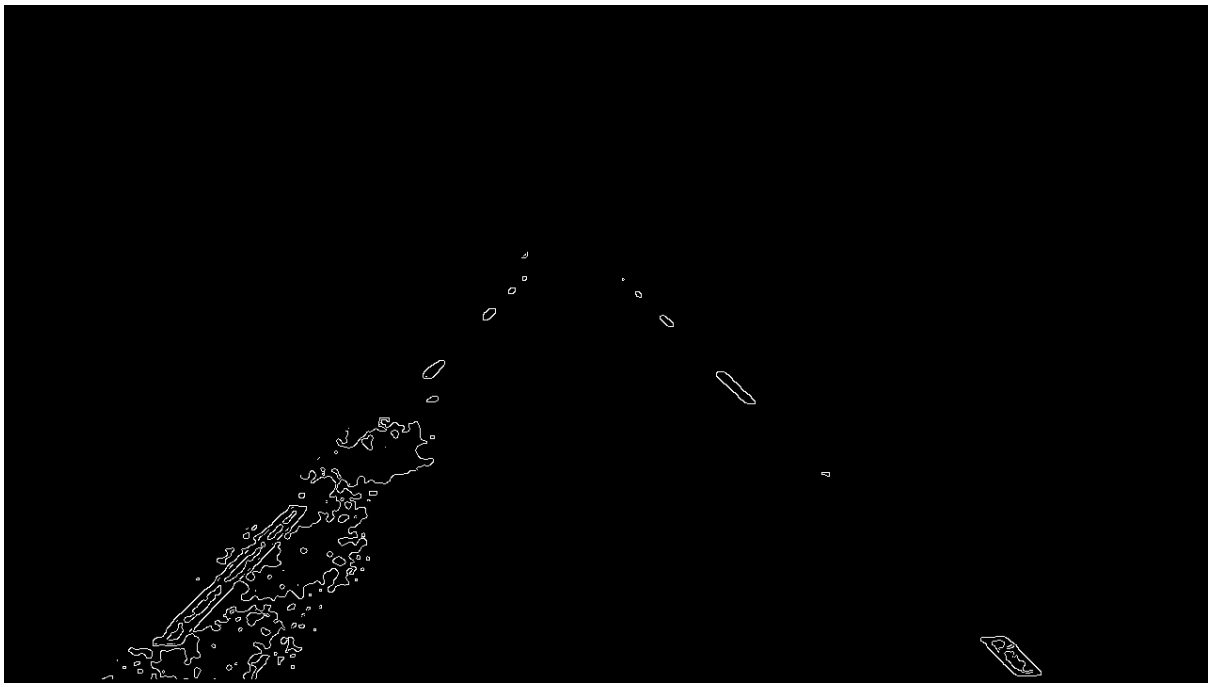
Step 8:



Test21.jpg:

Step 3:

Step 5:

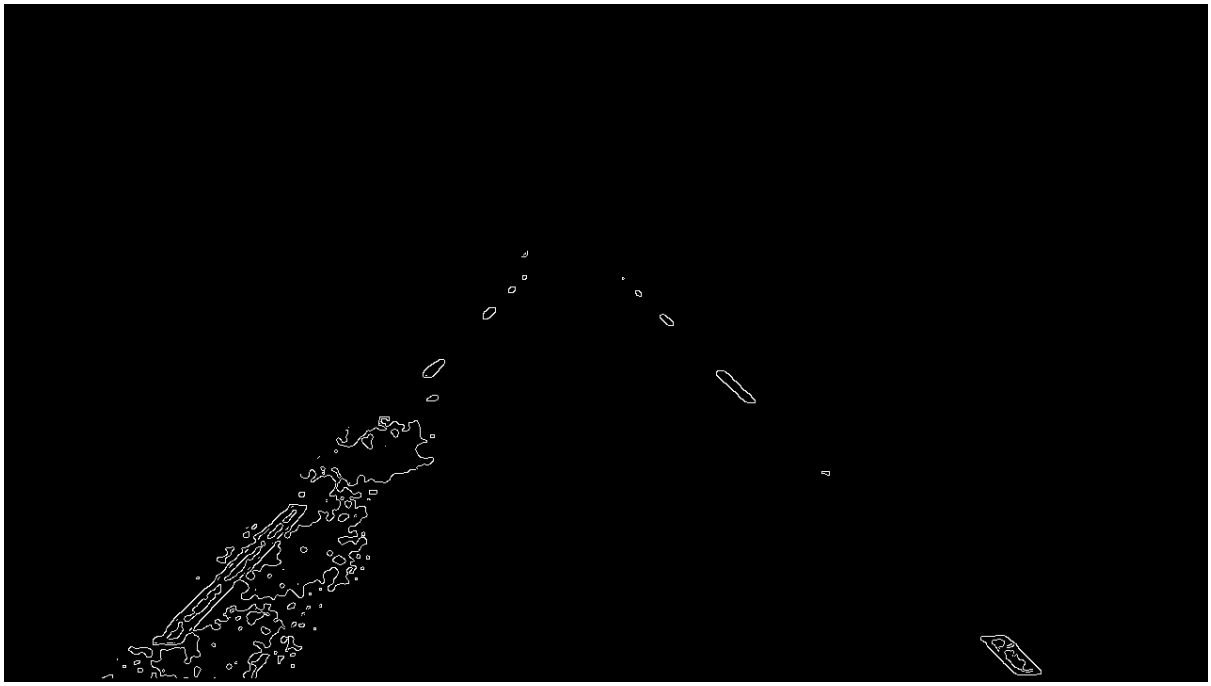


Step 8:

Test21.jpg:

Step 3:

Step 5:

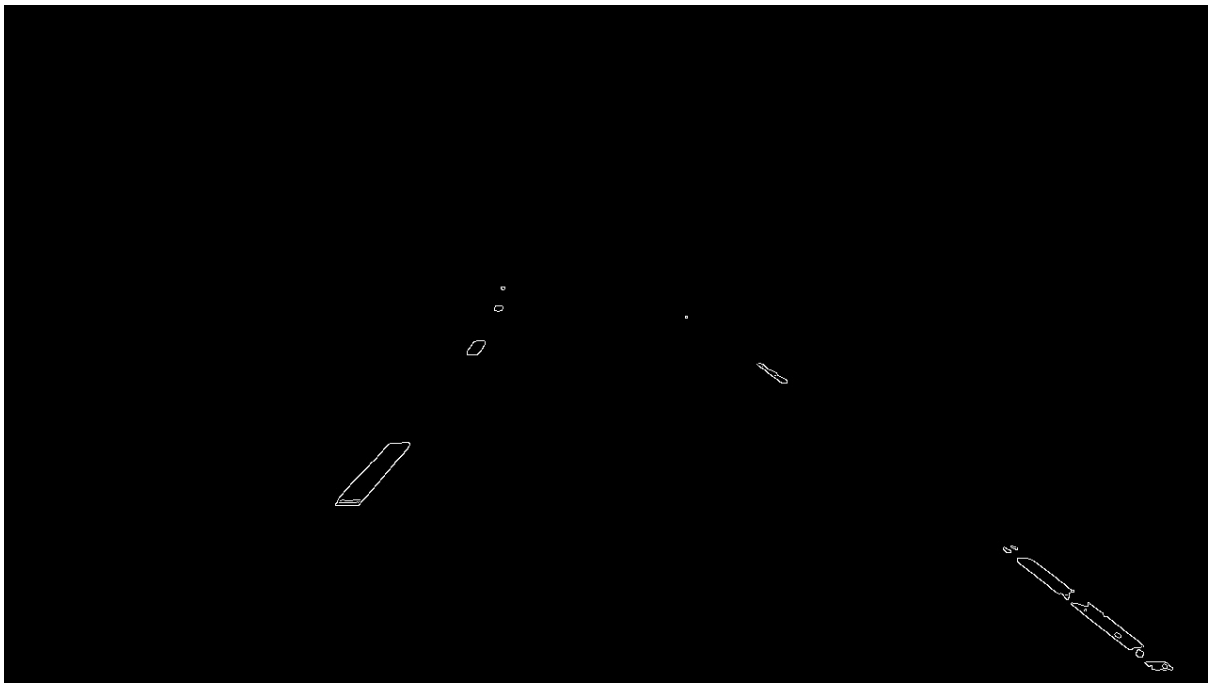


Step 8:

Test22.jpg:

Step 3:

Step 5:



Step 8:

Test23.jpg:

Step 3:

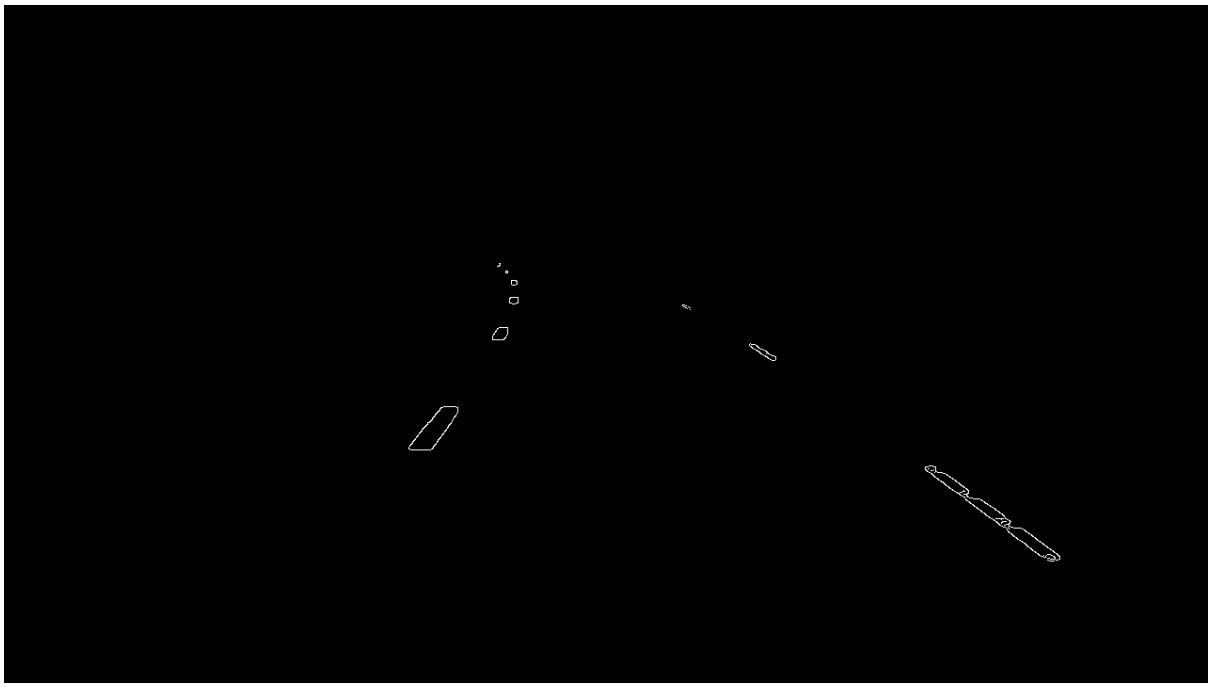
Step 5:

Step 8:

Test24.jpg:

Step 3:

Step 5:

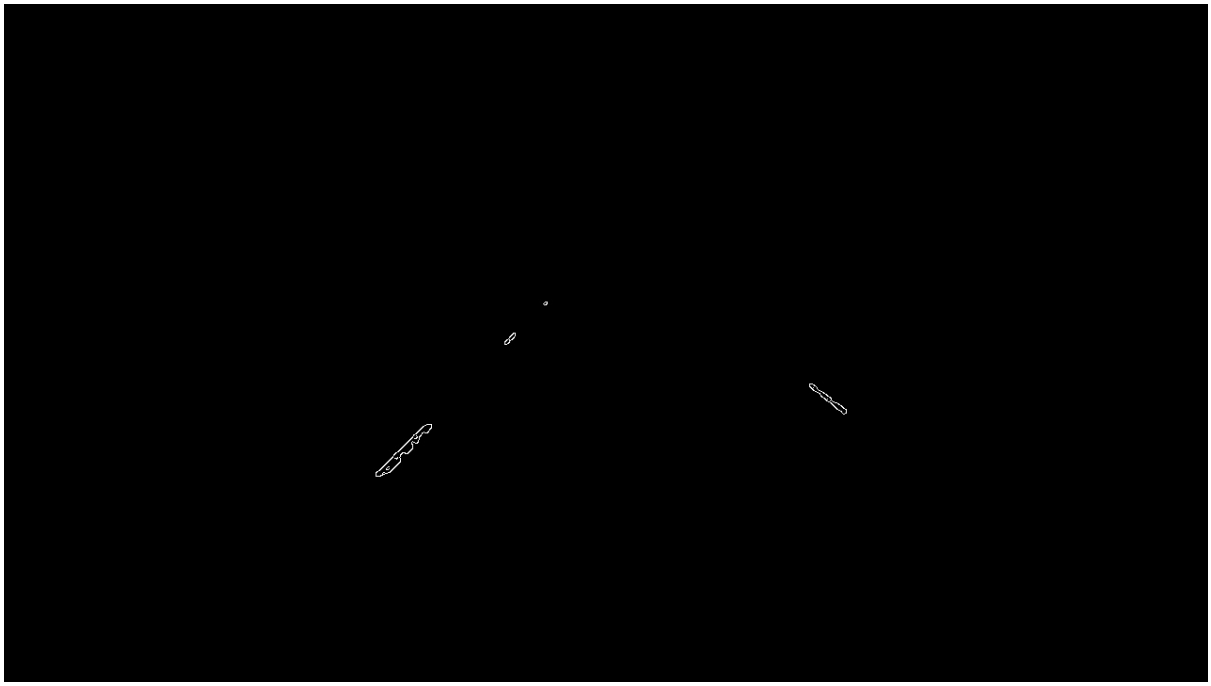


Step 8:

Test25.jpg:

Step 3:

Step 5:



Step 8: