CSE 5524 HW2

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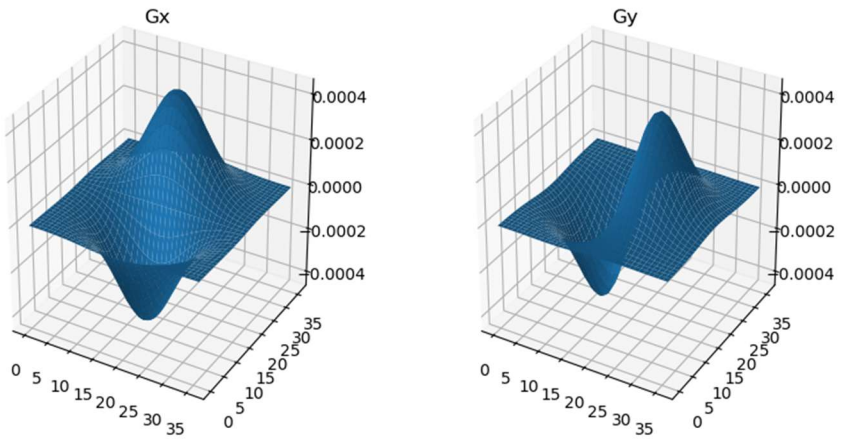
1)

Output Image:
We tried with multiple sigma values (0.5, 2.0, 3.5, 5.0, 6.5, 8.0, 9.5, 11.0, 12.5, 14.0, 15,5, 17.0, 18.5, and 20.0), and the images are in “task1_affleck_gaussian” directory.

Discussion:
To my friends, when sigma = 11.0, the face becomes recognizable.

2)

Output Image:

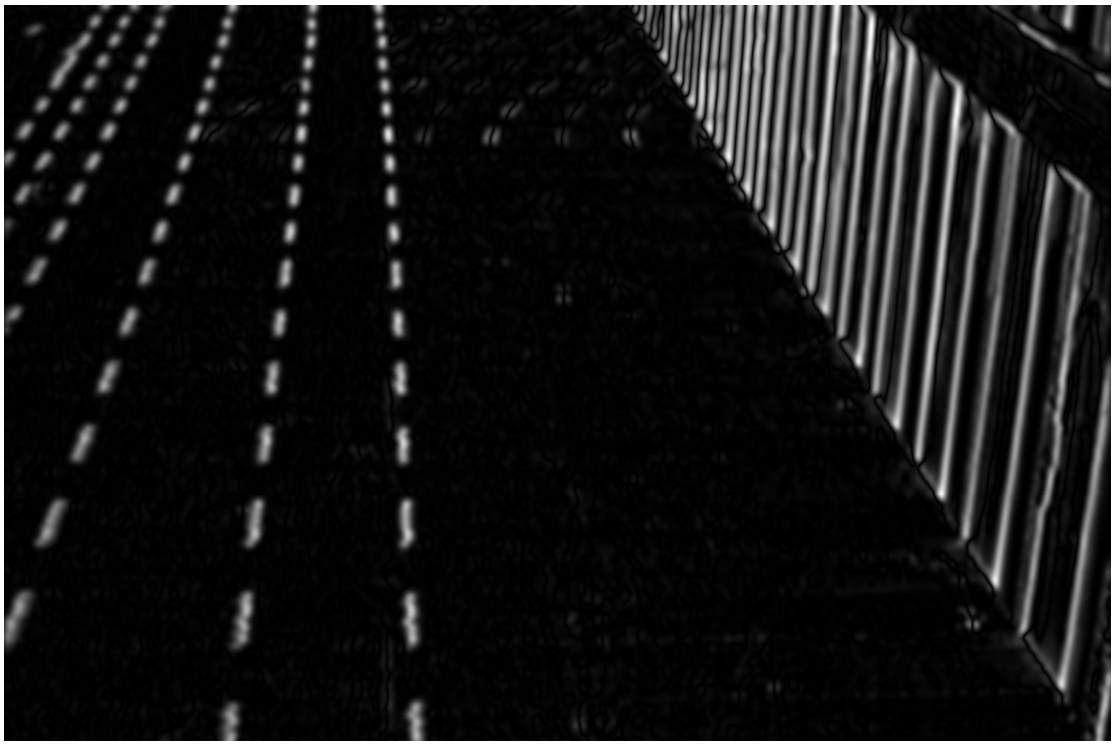


3)

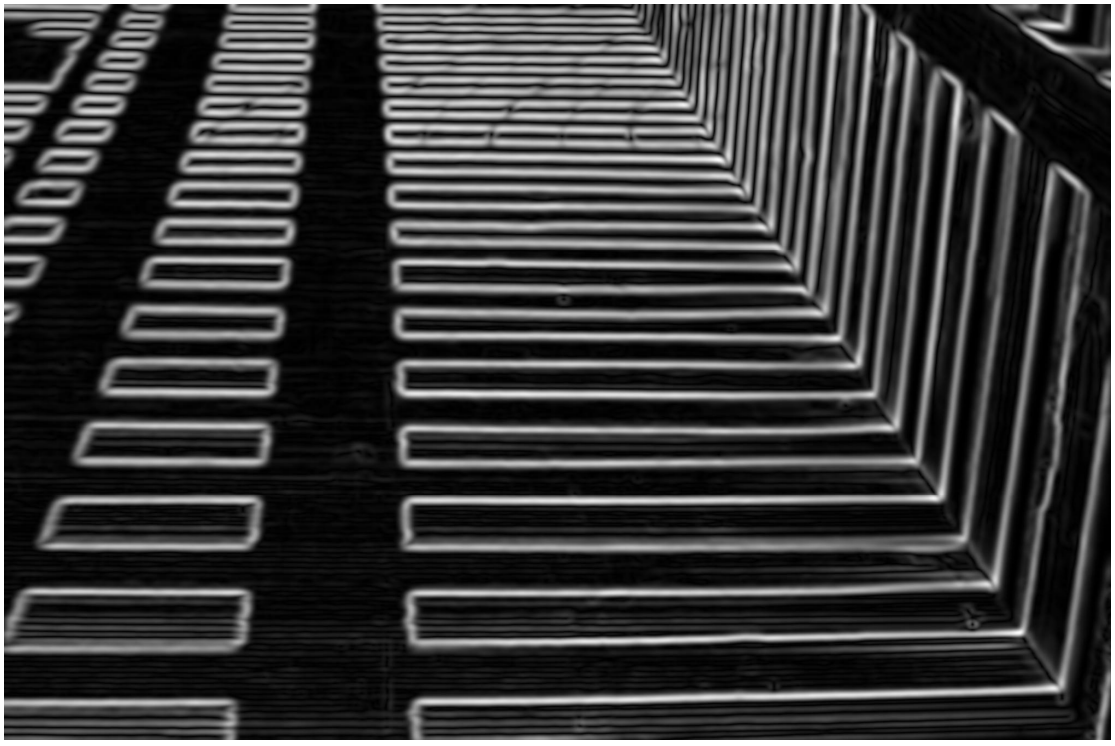
Input Image:

Output Image:

gxlm



gyIm

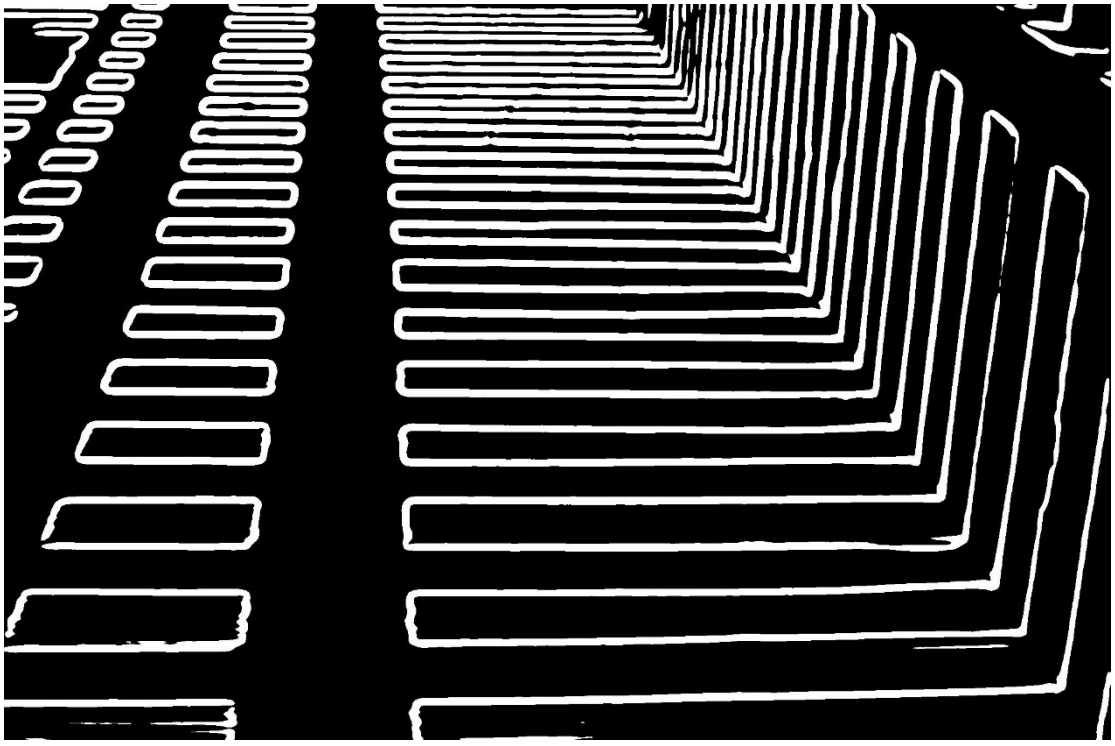


magIm

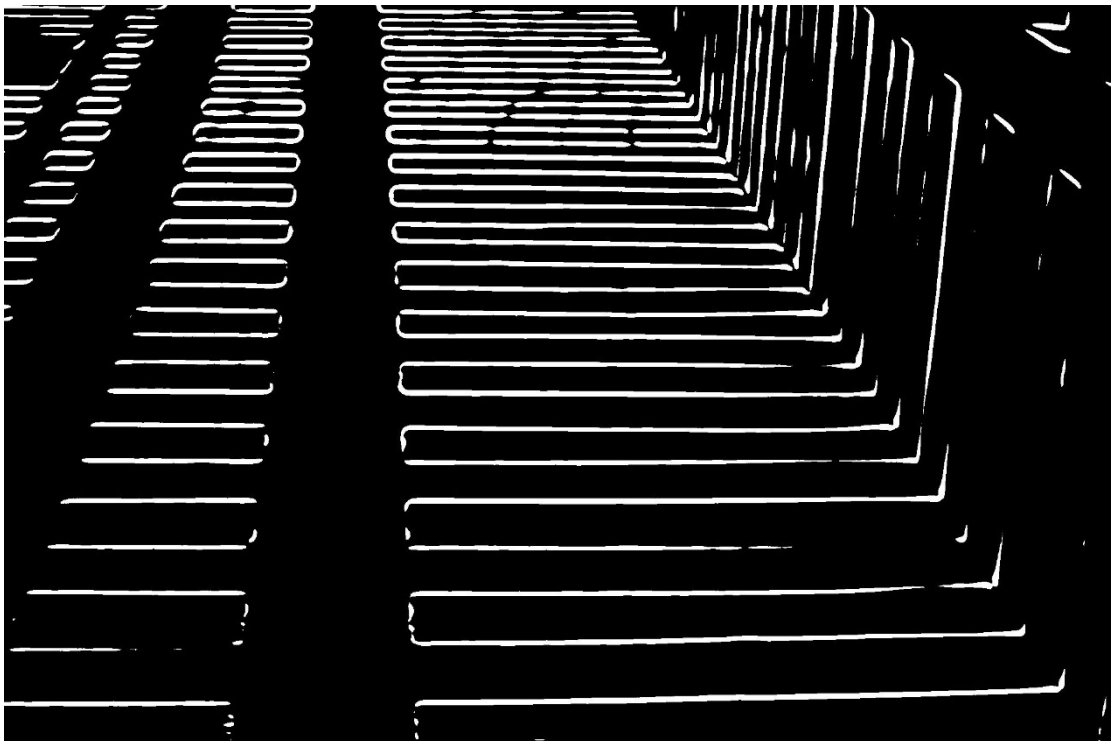
4)

Output Image:

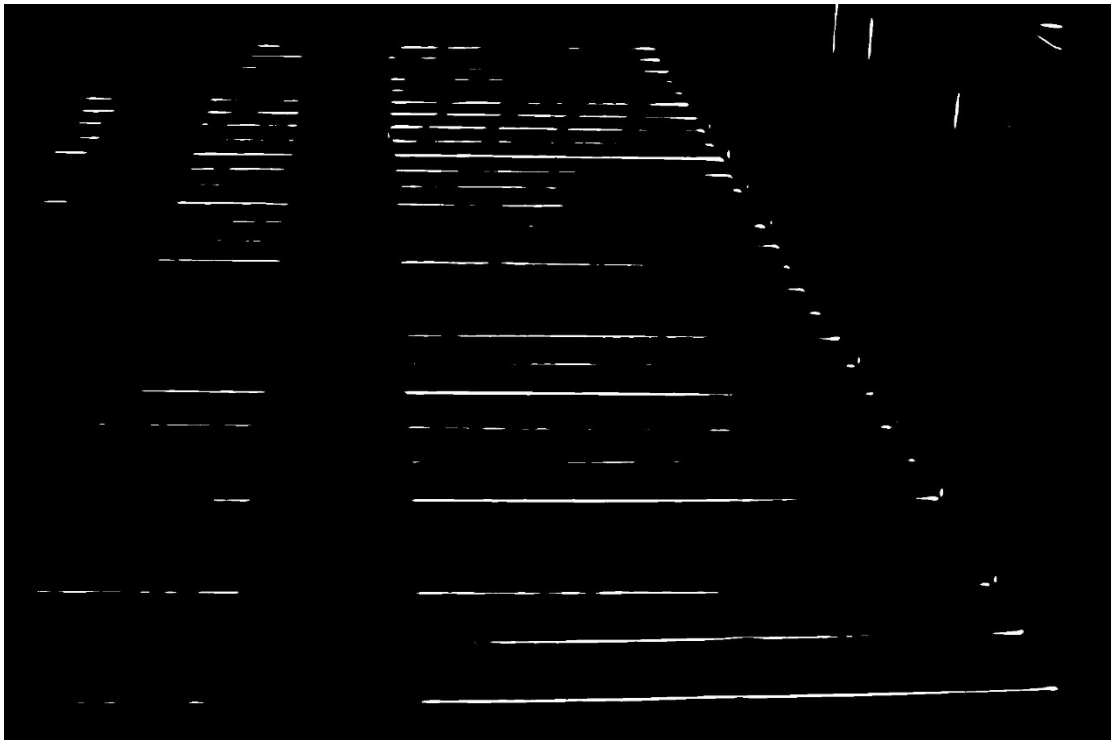
T = 50



T = 100



T = 150

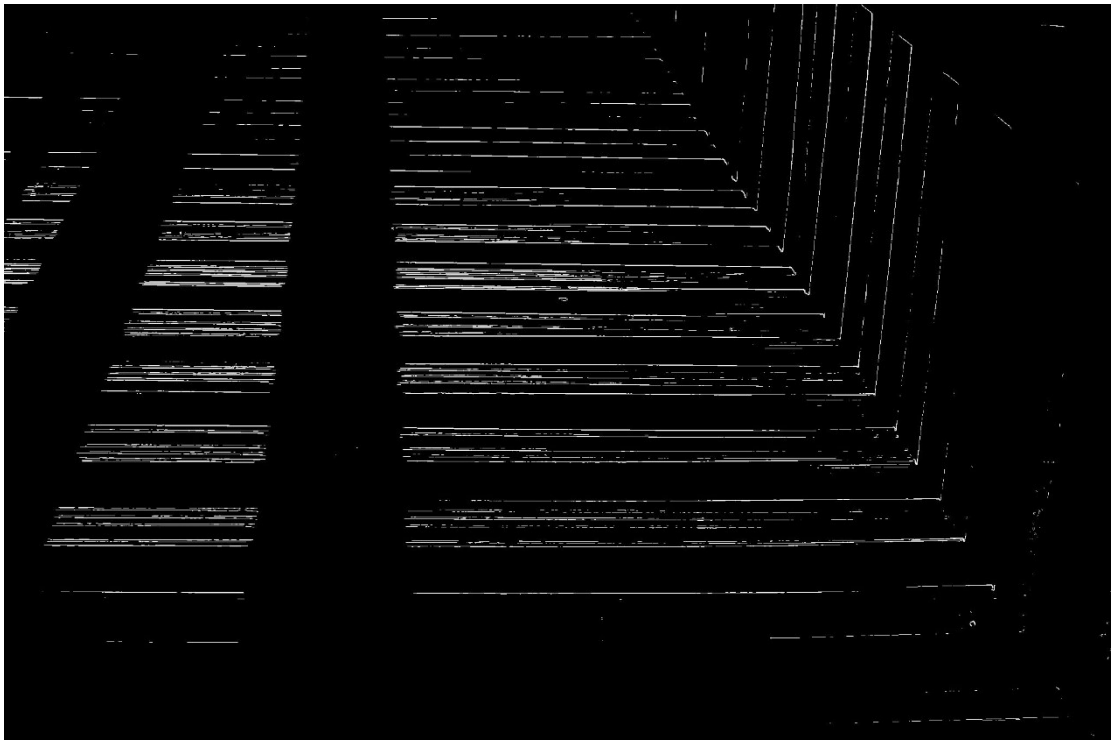


T = 200

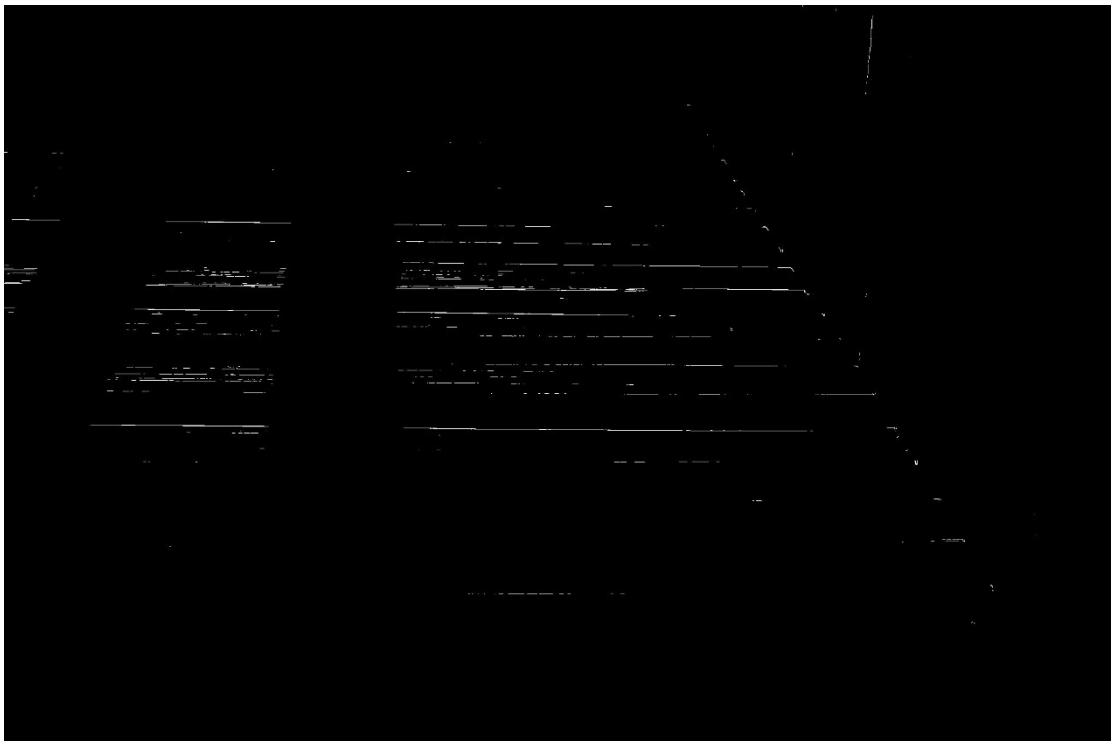
5)

Output Image:

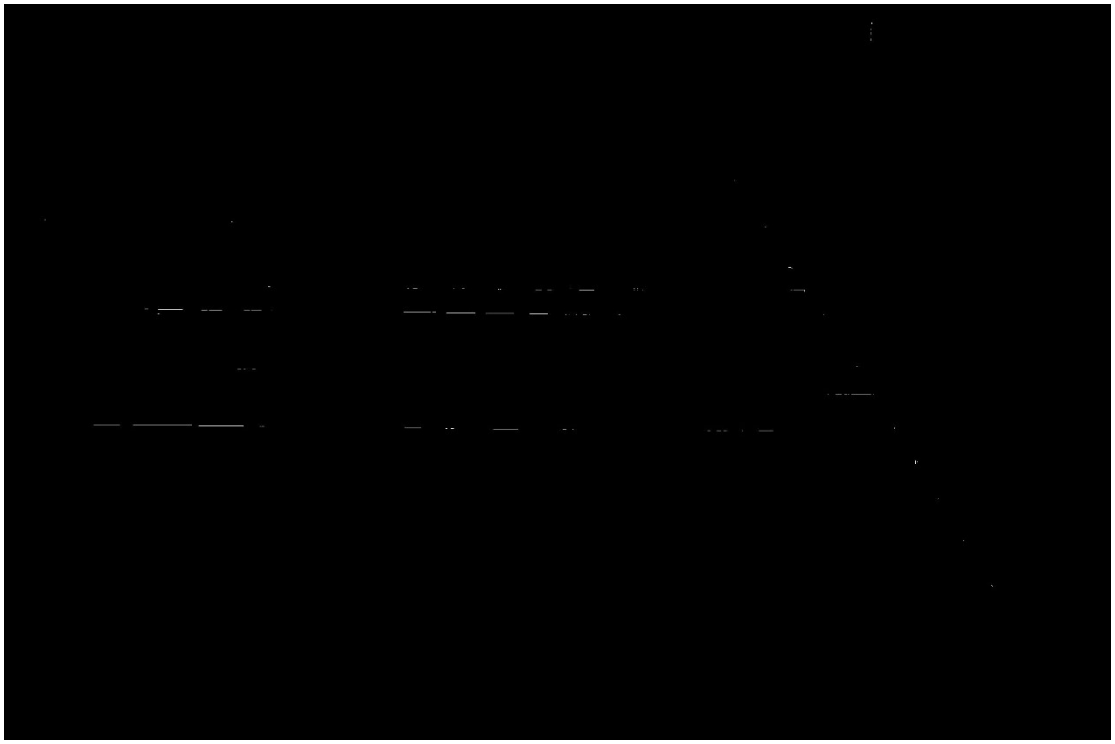
T = 50



T = 100



T = 150

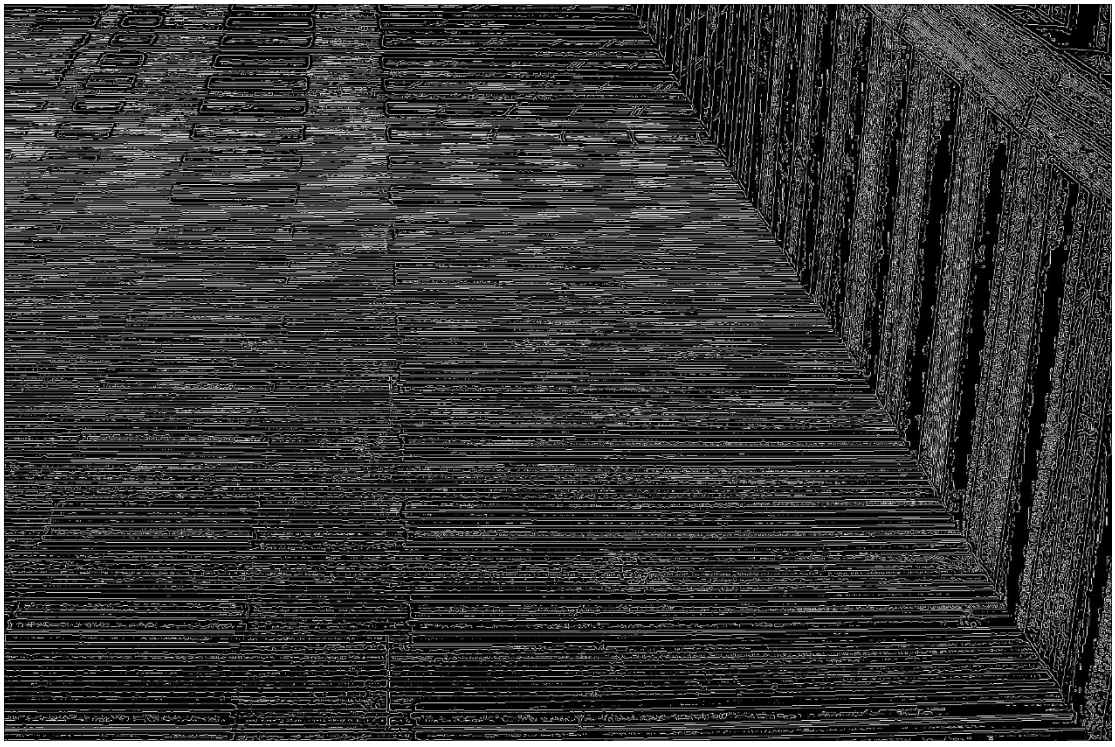


T = 200

Discussion:
Compared to results generated from Sobel masks, edges generated from Gaussian masks are thicker (i.e., closer edges are more likely to be clustered to one edge).

6)

Output Image:



The above image is the result from canny detector with the default setting.

The way it compares is that:

1. Smooth the image to remove noises.
2. Find the gradients of the image.
3. Looking for points where gradient magnitude is maximal along the direction of the gradient and keep them.
4. Use upper and lower thresholds to perform edge linking.