1. Screenshots of the images generated by the simulation.
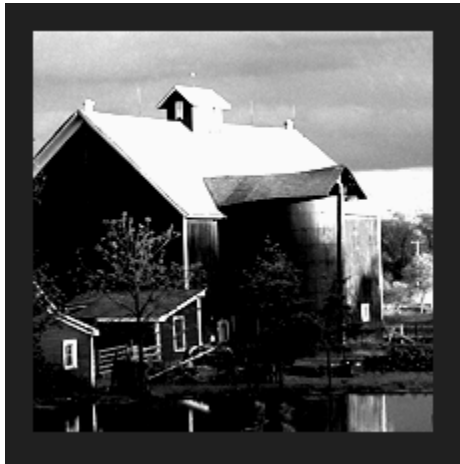
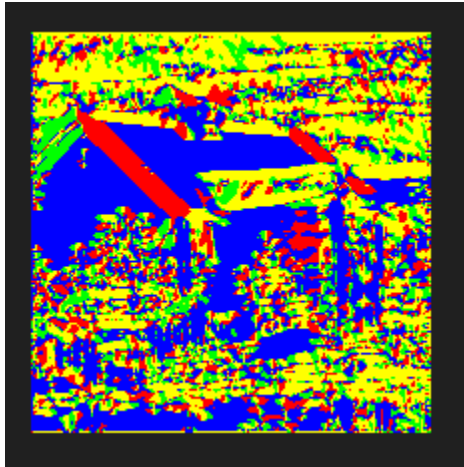0.OutputOrigin.bmp

1.OutputGauss.bmp

2.OutputGradient.bmp

3.OutputDirection.bmp

4.OutputNMS.bmp

5.OutputHysterisis.bmp

2. Screenshots of the simulation outputs.

```
[k3sh4v@n01-zeus src]$ xrun -R CannyEdge.v tb.v
TOOL:    xrun    24.03-s004: Started on Nov 06, 2024 at 15:39:05 CST
xrun: 24.03-s004: (c) Copyright 1995-2024 Cadence Design Systems, Inc.
xrun: *W,CSSF: HDL source files with -R option will be ignored.
Loading snapshot worklib.stimulus:v ................... Done
xcelium> source /opt/coe/cadence/XCELIUM240/tools/xcelium/files/xmsimrc
xcelium> run
> SUCCESS : The file was read successfully.

$fread read 54 bytes:

> memX[] Array is created.
> memXG[] Array is created.
> Gxy[] Array is created.
> Theta[] Array is created.
> bGxy[] Array is created.


> 0.OutputOrigin.bmp is created.

> 1.OutputGauss.bmp is created.

> 2.OutputGradient.bmp is created.

> 3.OutputDirection.bmp is created.

> 4.OutputNMS.bmp is created.

> 5.OutputHysteresis.bmp is created.

Simulation stopped via $stop(1) at time 251648040 NS + 0
./tb.v:532       #3000 $stop;          // stop
xcelium> exit
```

3. Screenshots of running check.py.

```
(systemc) bash-4.4$ python3 check.py
comparison for  /home/grads/k/k3sh4v/ECEN468/Lab10/src/0.OutputOrigin.bmp
Total Pixels: 120000
Matching Pixels: 120000
Matching Ratio: 100.00%
comparison for  /home/grads/k/k3sh4v/ECEN468/Lab10/src/1.OutputGauss.bmp
Total Pixels: 120000
Matching Pixels: 120000
Matching Ratio: 100.00%
comparison for  /home/grads/k/k3sh4v/ECEN468/Lab10/src/2.OutputGradient.bmp
Total Pixels: 120000
Matching Pixels: 120000
Matching Ratio: 100.00%
comparison for  /home/grads/k/k3sh4v/ECEN468/Lab10/src/3.OutputDirection.bmp
Total Pixels: 120000
Matching Pixels: 119047
Matching Ratio: 99.21%
comparison for  /home/grads/k/k3sh4v/ECEN468/Lab10/src/4.OutputNMS.bmp
Total Pixels: 120000
Matching Pixels: 119679
Matching Ratio: 99.73%
comparison for  /home/grads/k/k3sh4v/ECEN468/Lab10/src/5.OutputHysteresis.bmp
Total Pixels: 120000
Matching Pixels: 119079
Matching Ratio: 99.23%
```

4. Source code in this design with reasonable comments.

I have attached the CannyEdge.v file in the email.

5. Gate level design.(CannyEdge_gate.v)

I have attached the CannyEdge_gate.v file in the email.

6. dc_shell output. (output.txt)

I have attached the output.txt file in the email.