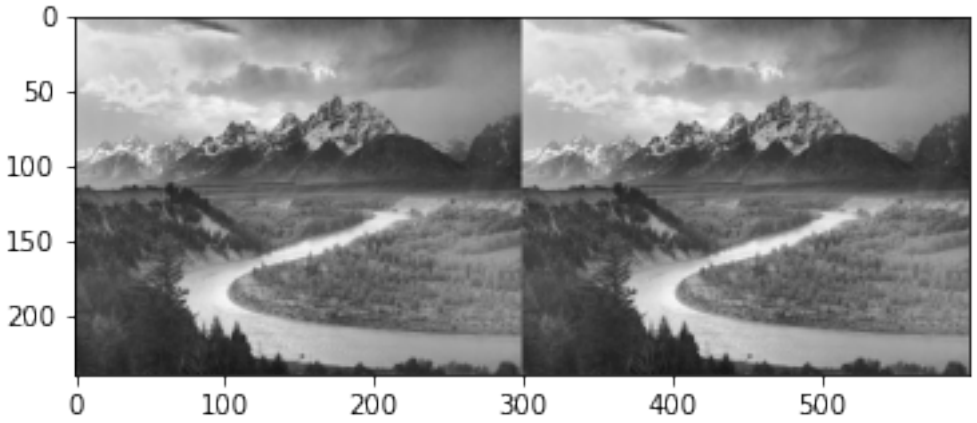
Assignment-1

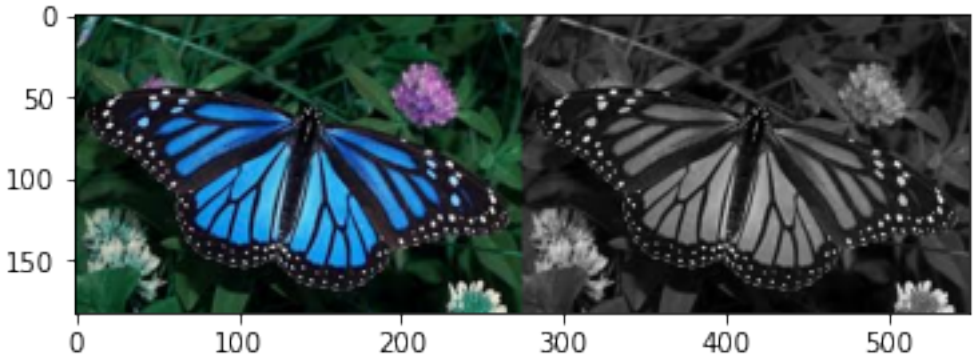
November 17, 2020

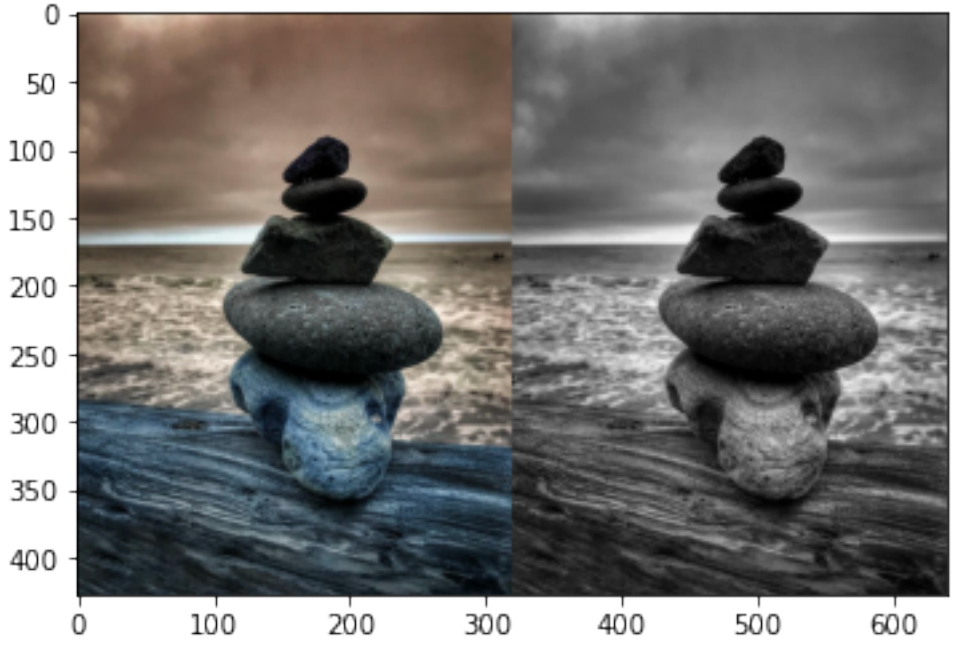
[1]:
```
import sys
sys.path.insert(0, '/home/abrar/python_ws/cv/assignment1')

import assignment_1 as a1
```

[2]:
```
a1.reading()
```



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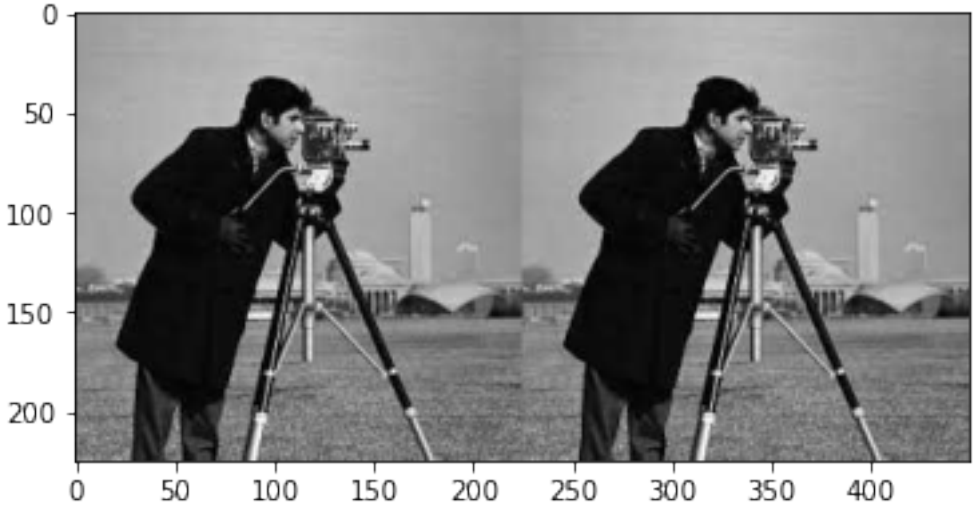
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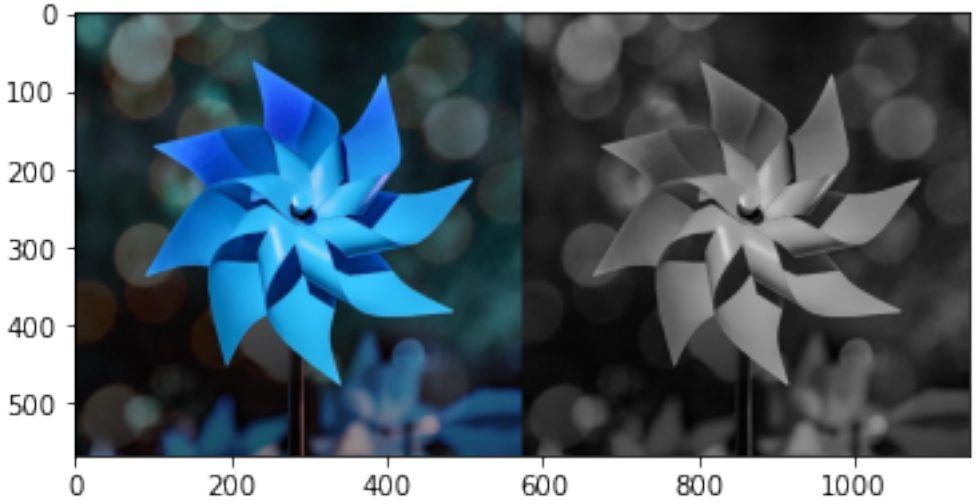
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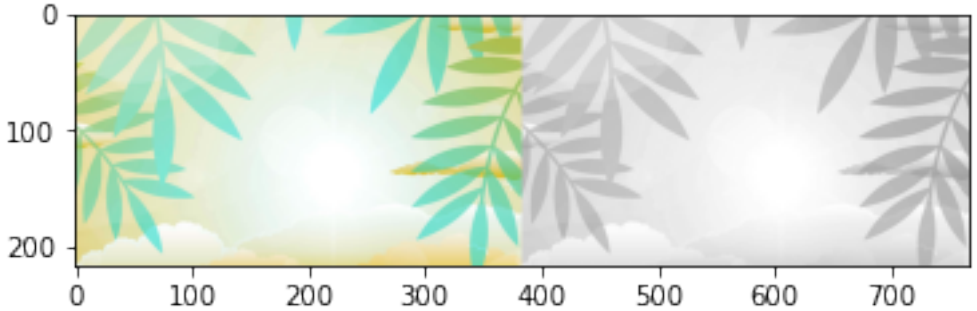
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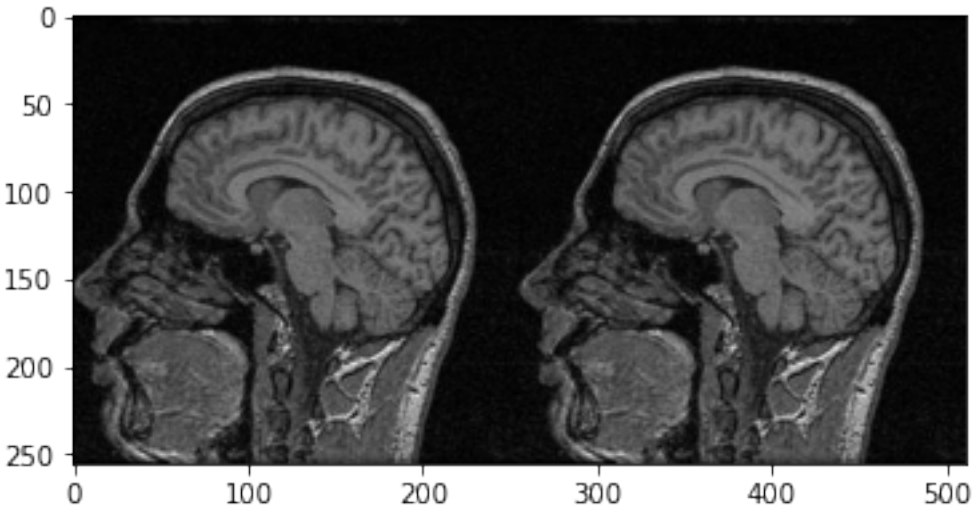

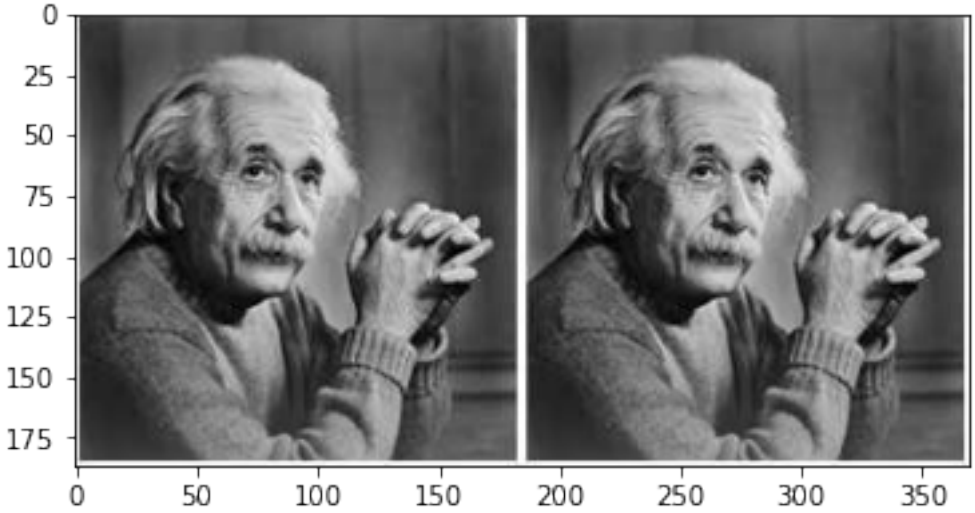

[3]:
```
a1.rgbExclusion()
```

```
Enter Colour to Exclude:r
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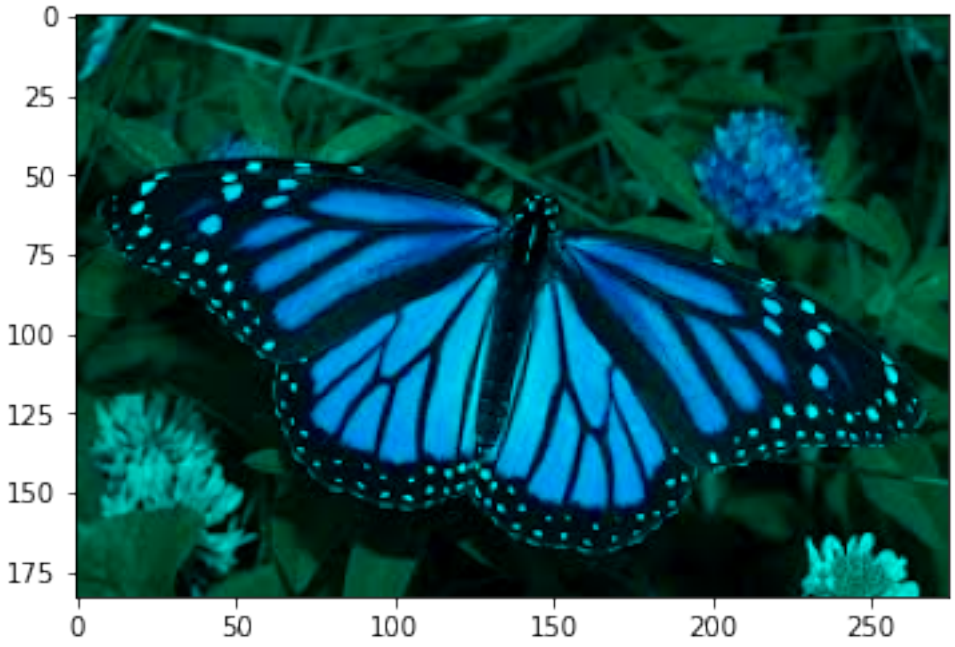
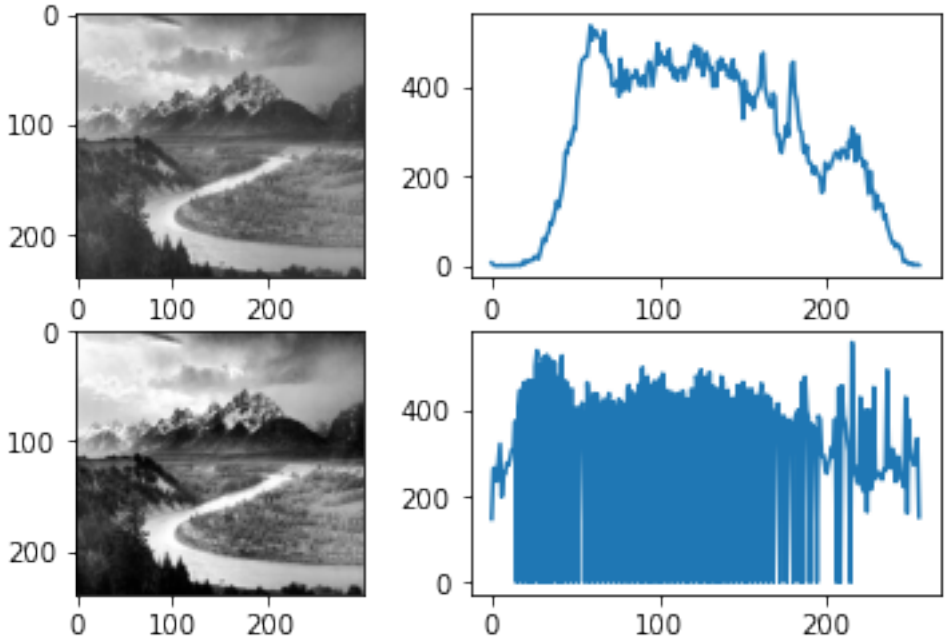
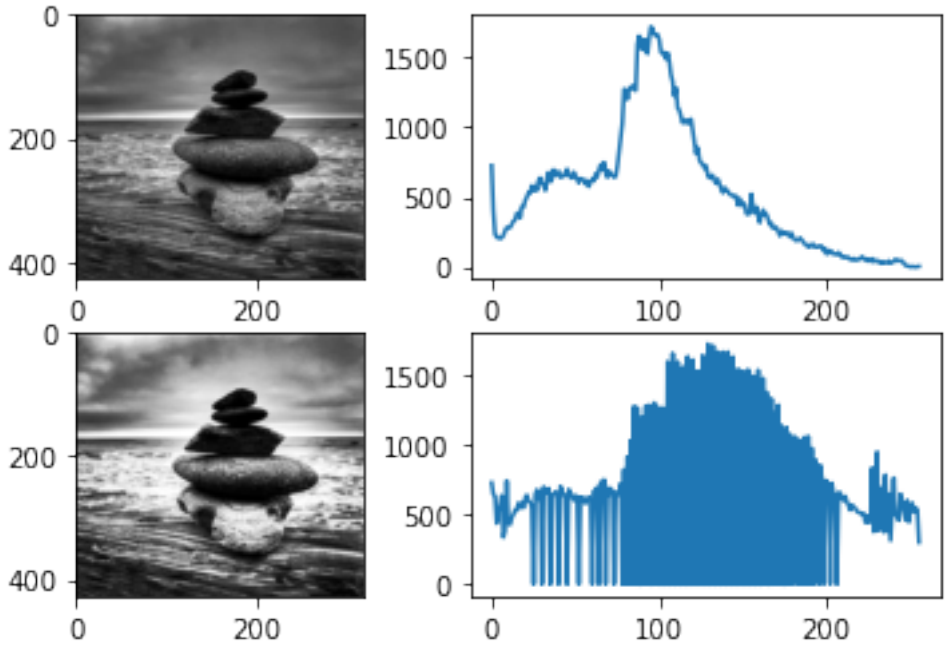


[4]:
```
a1.histogram()
```

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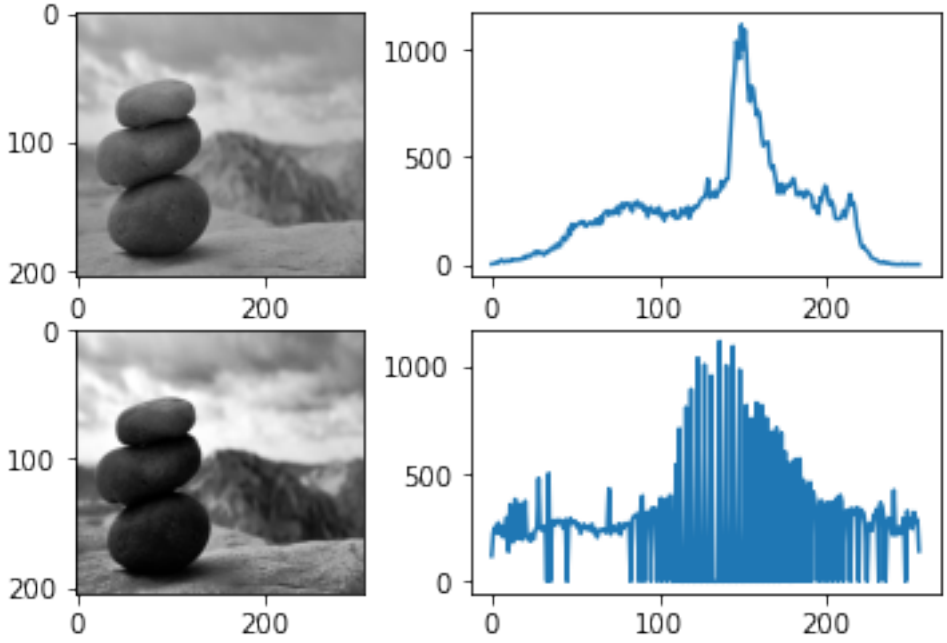
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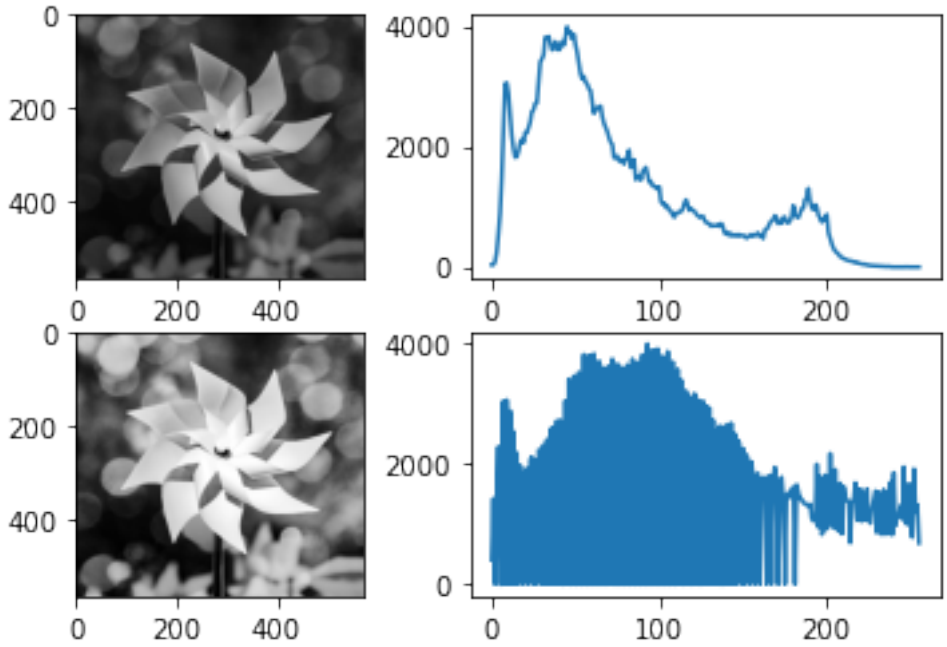
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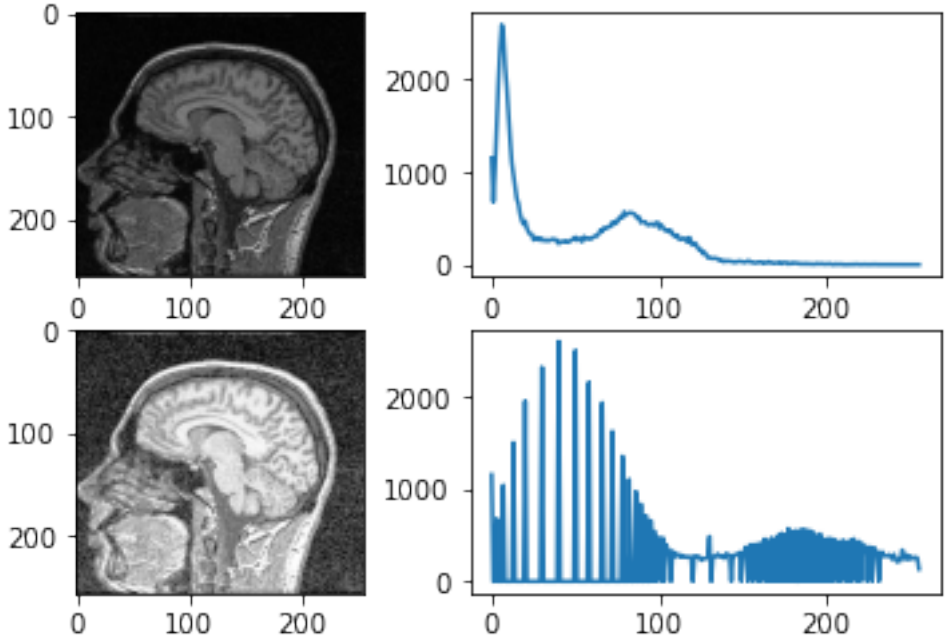
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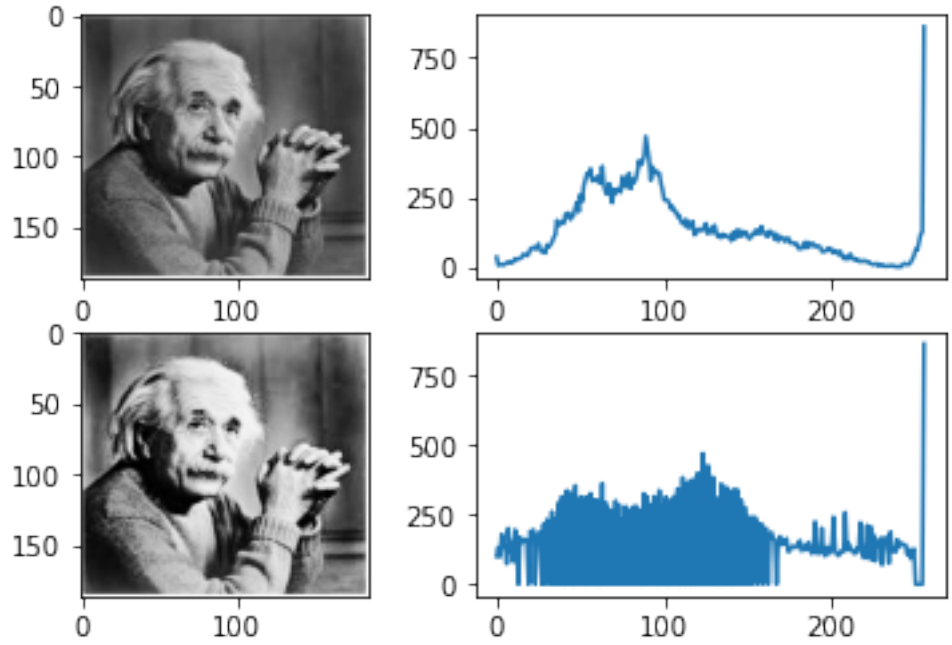
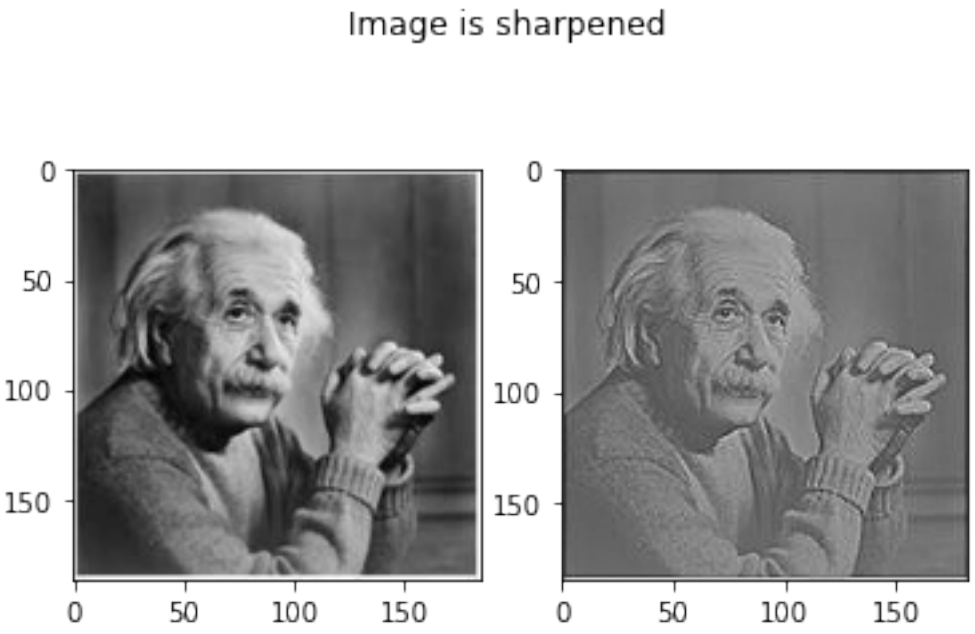
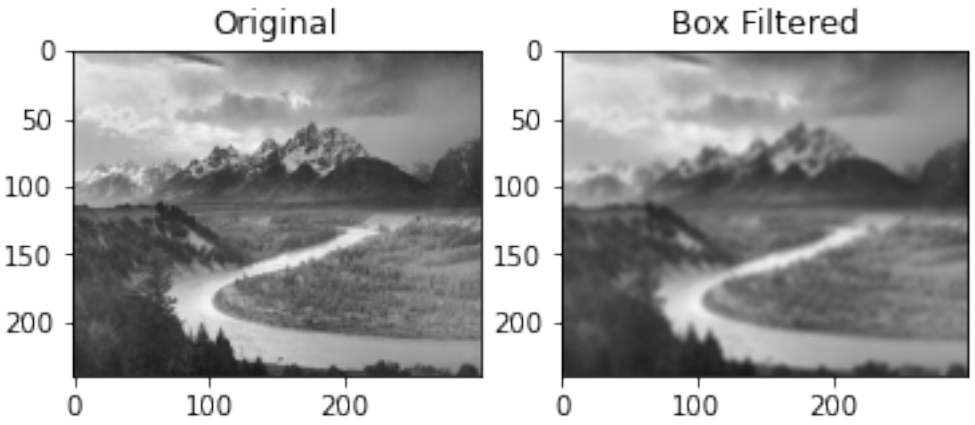


[5]:
```
a1.conv()
```

```
Enter Image Path('def' for default image): def
Enter Type of Convolution('sharpen' or 'smooth'): sharpen
```



[6]:
```
a1.box()
```


Original
Box Filtered
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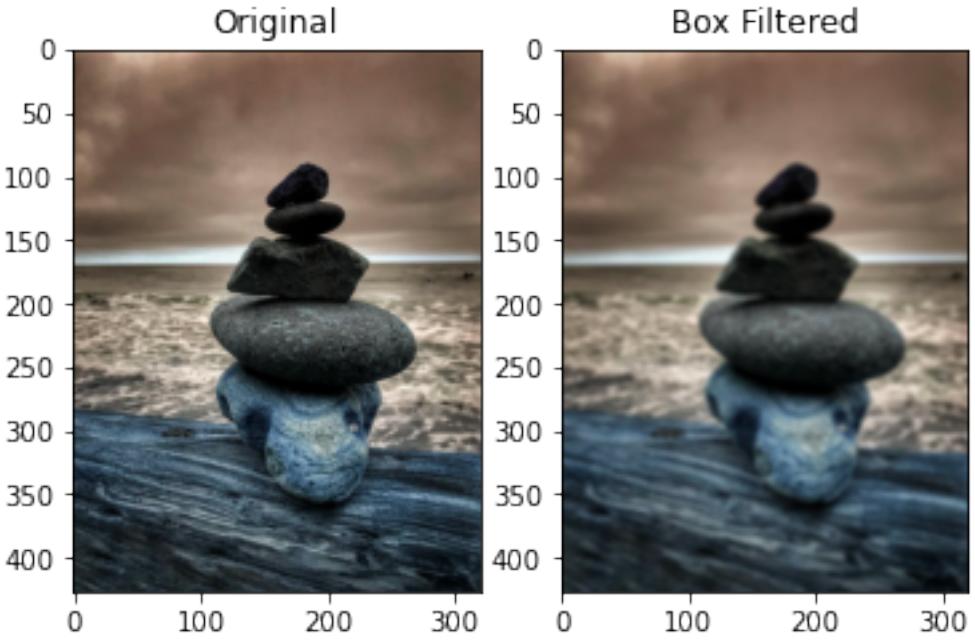
Original
Box Filtered
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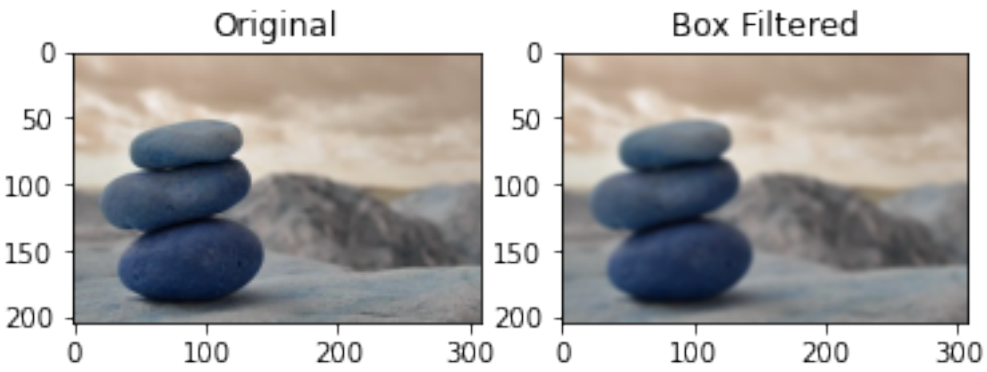
Original
Box Filtered
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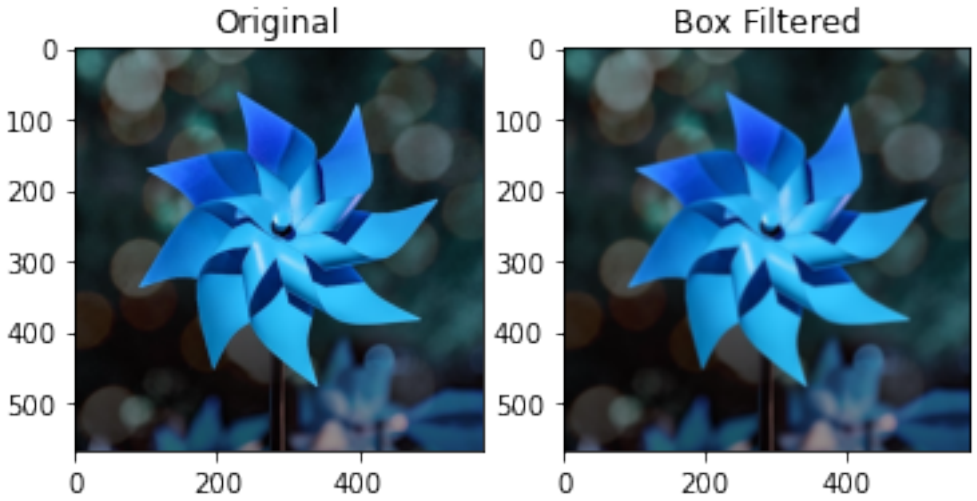
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Box Filtered
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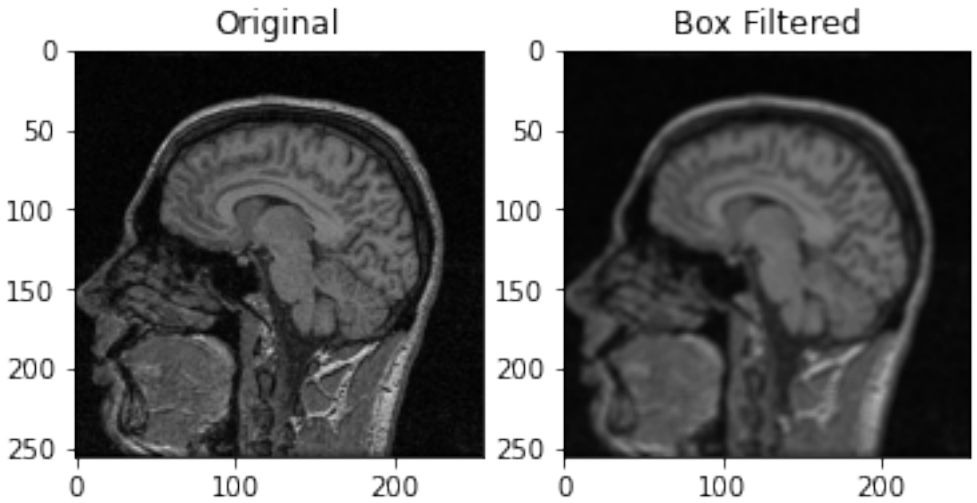
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Box Filtered
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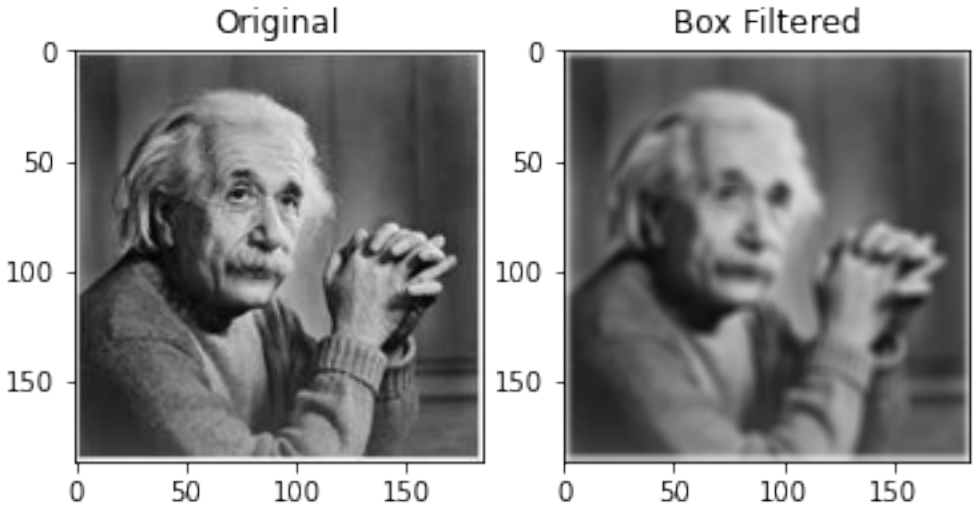
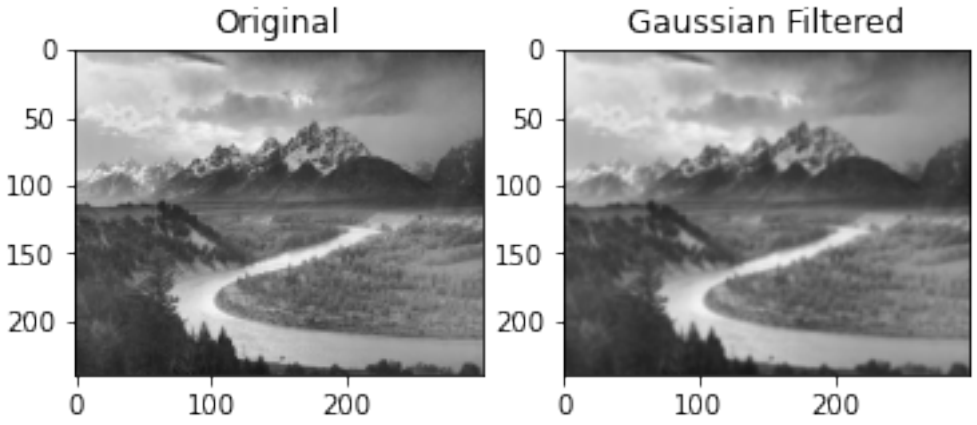
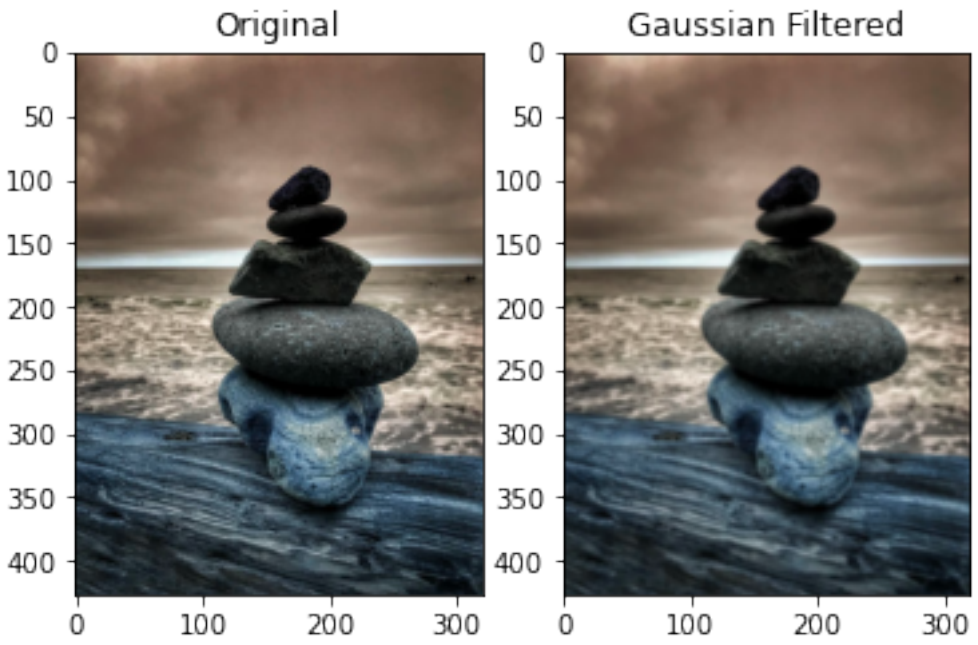


[7]:
```
a1.gaus()
```

```
Enter sigma value for filter= 10
```

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Gaussian Filtered
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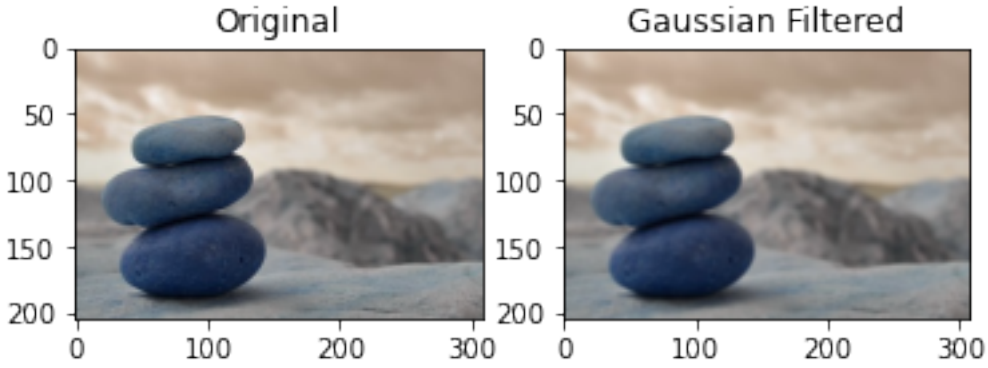
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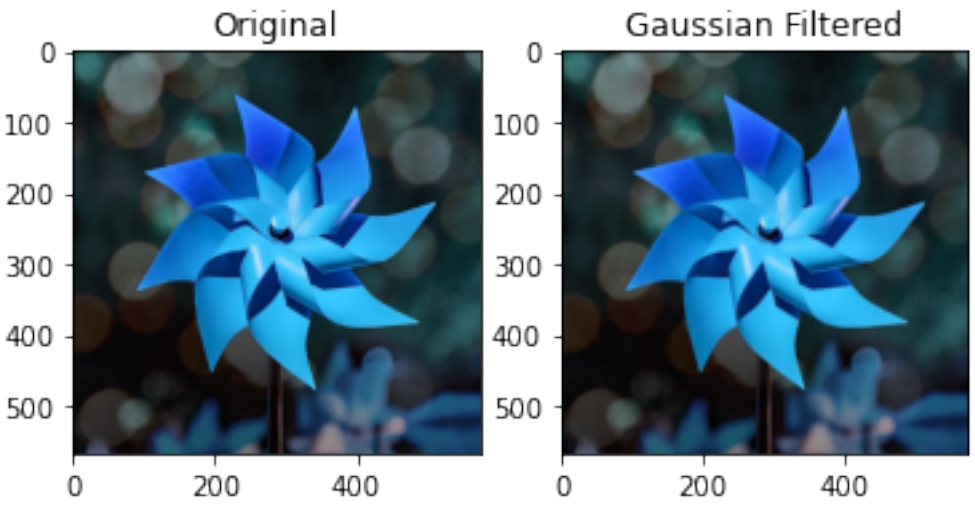
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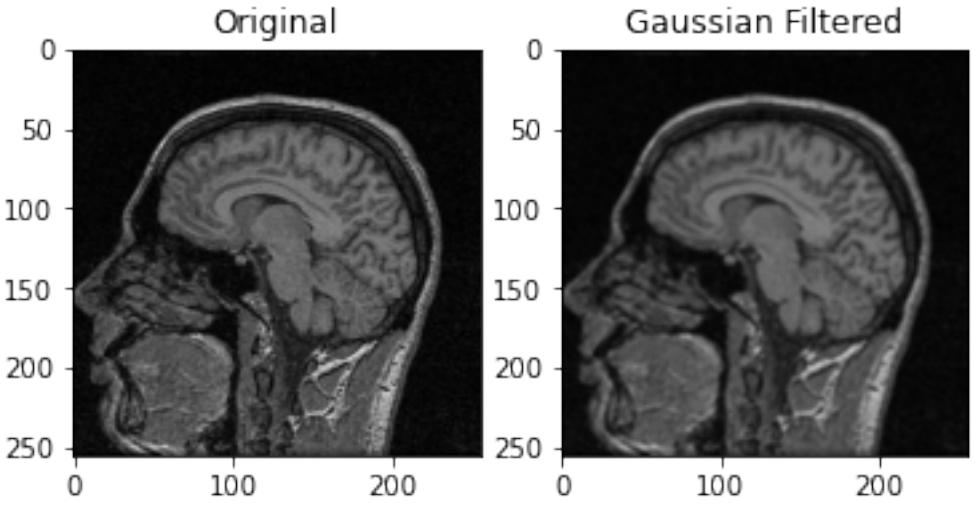
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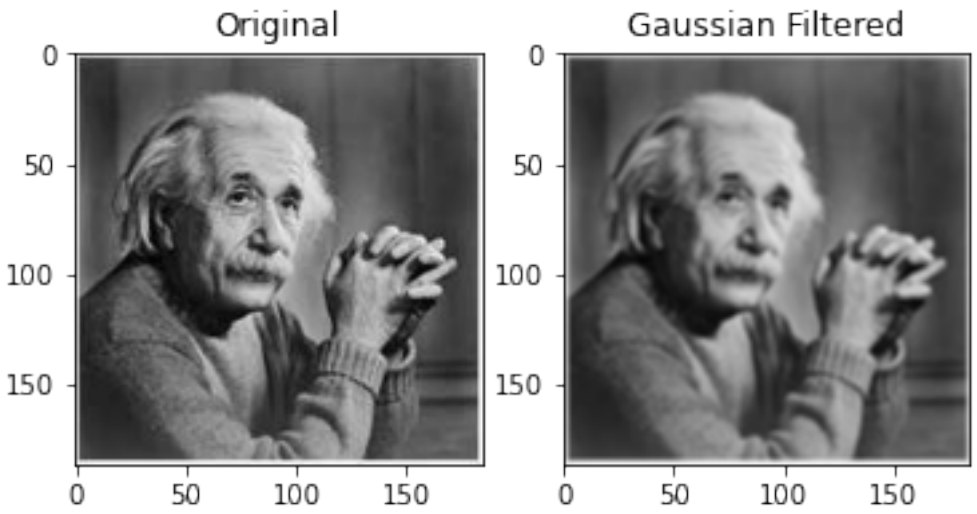
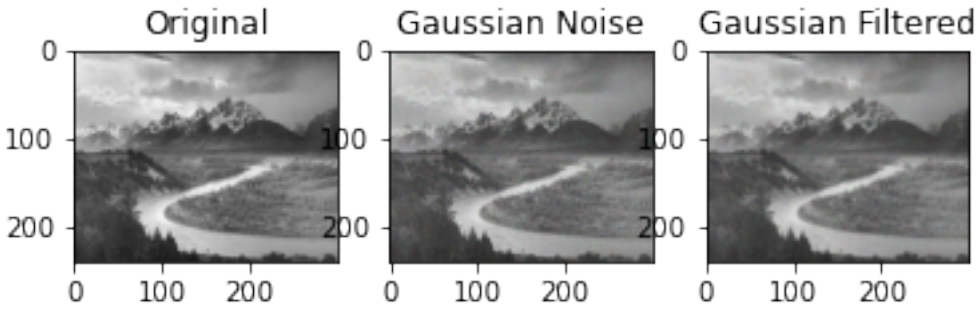
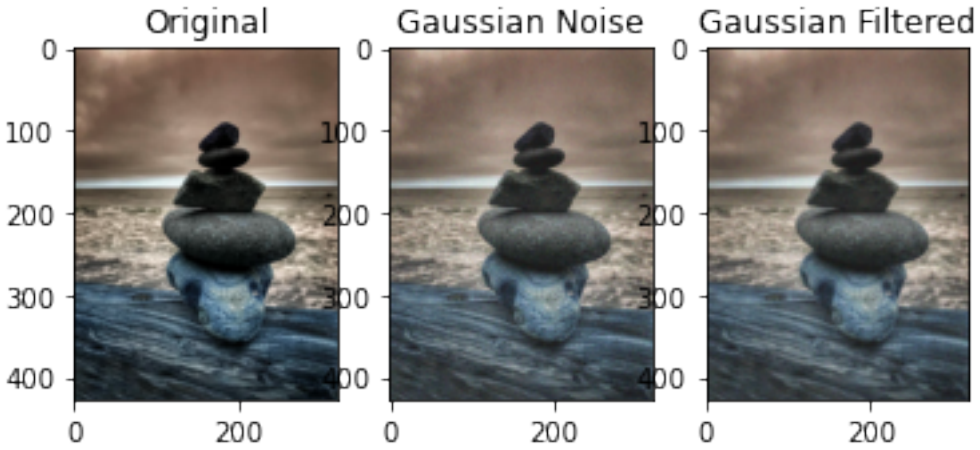
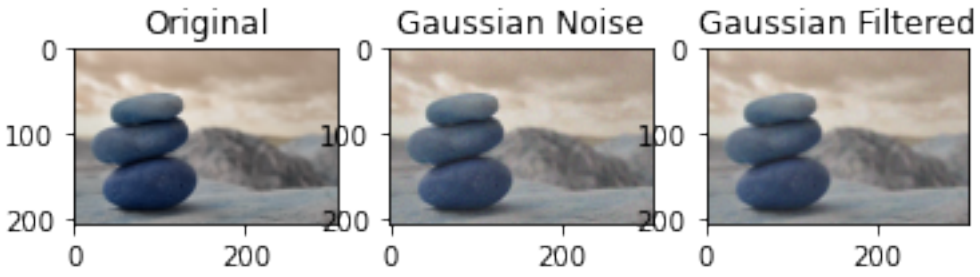


[8]:
```
a1.gausnoise()
```

```
Enter sigma value for noise= 10
```






Original
Gaussian Noise
Gaussian Filtered
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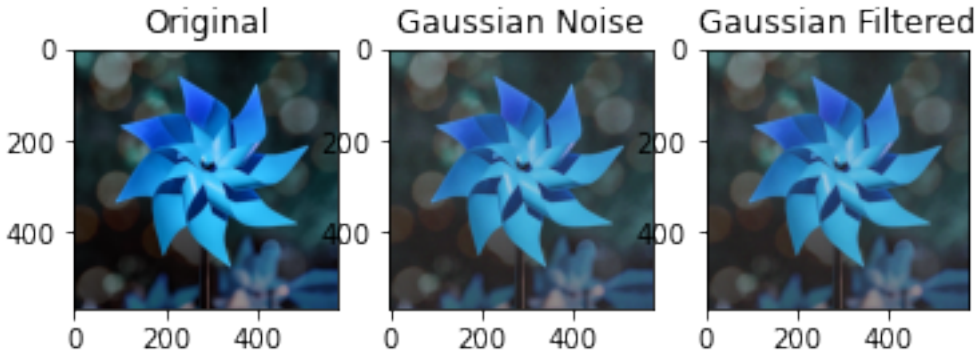
Original
Gaussian Noise
Gaussian Filtered
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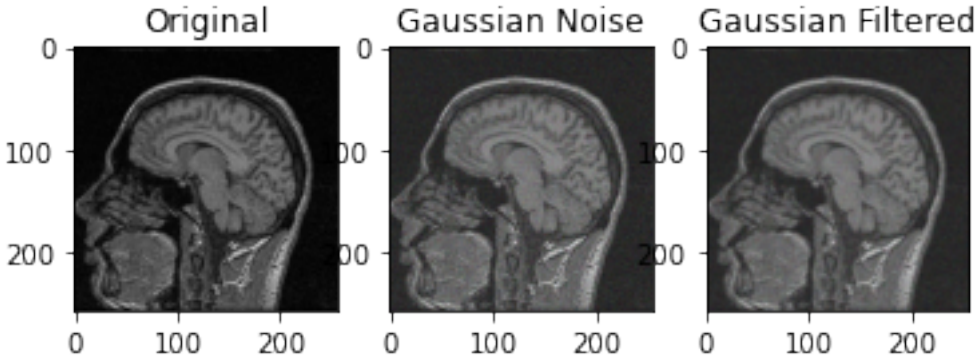
Original
Gaussian Noise
Gaussian Filtered
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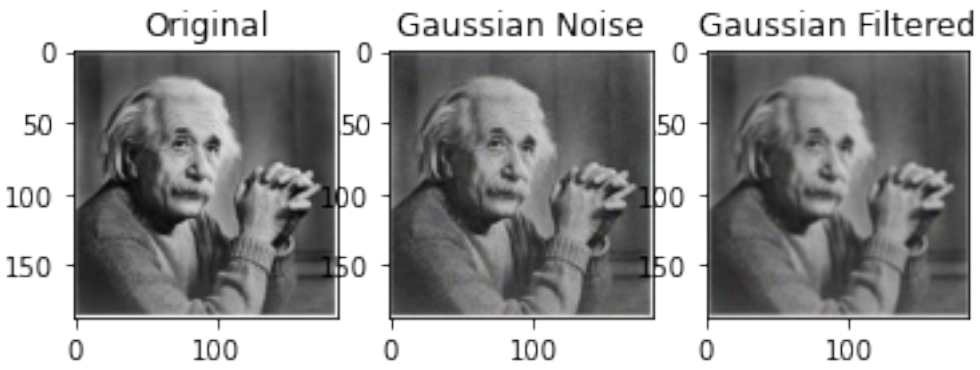
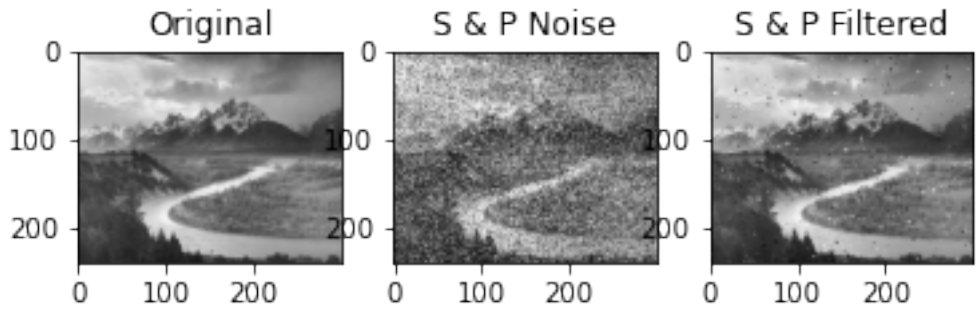
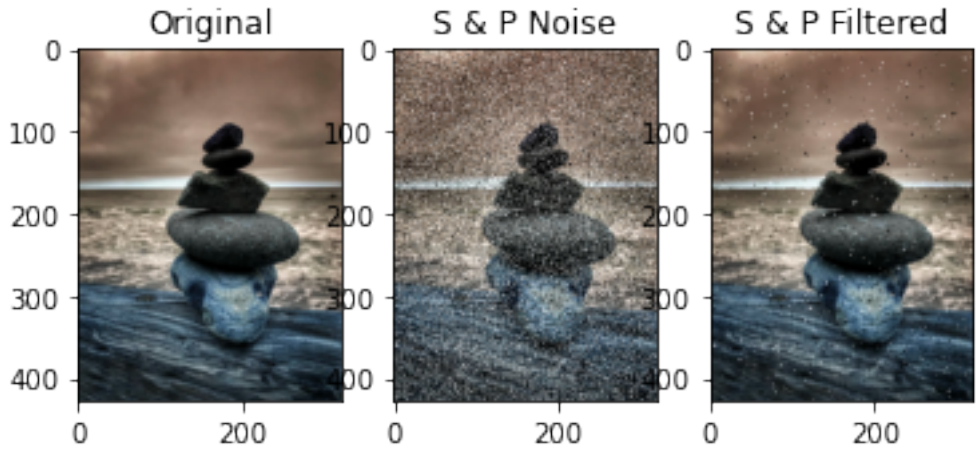
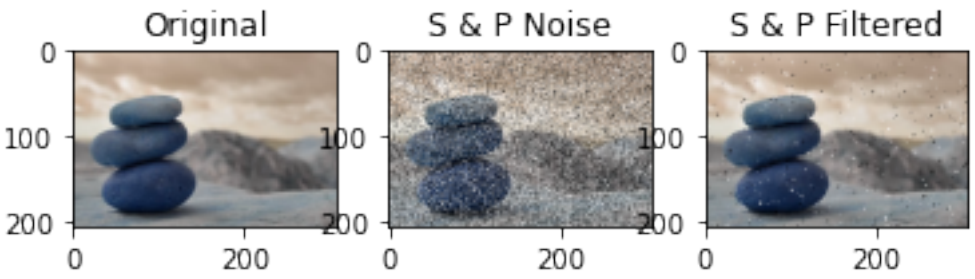


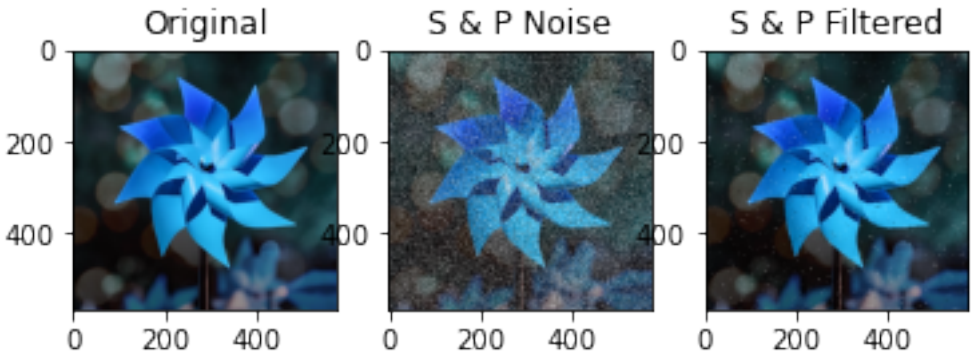
[9]:
```
a1.saltandpepper()
```

```
Enter probability of S&P Noise= 0.3
```






Original
S & P Noise
S & P Filtered
0
100
200
0
200


Original
S & P Noise
S & P Filtered
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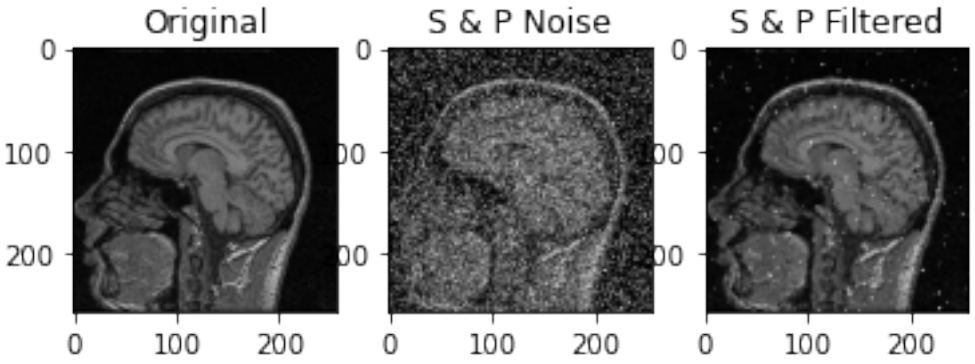
Original
S & P Noise
S & P Filtered
0
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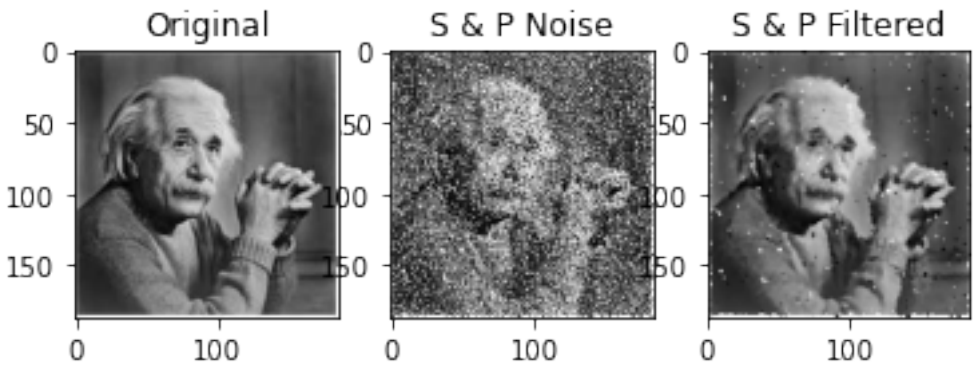
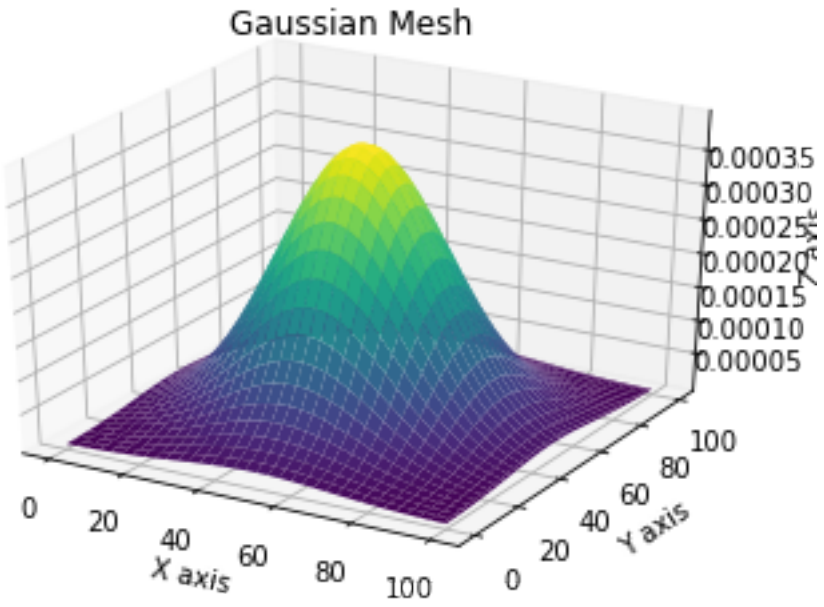
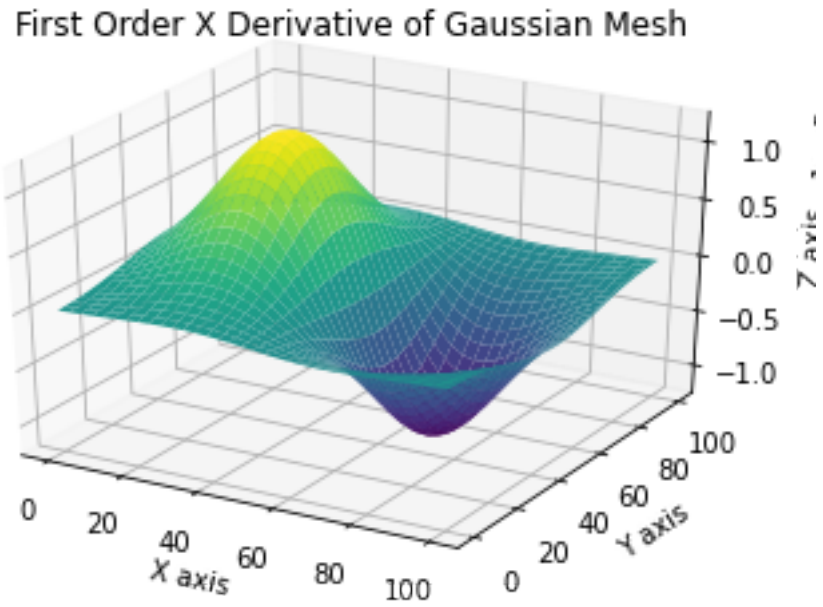
0
100
200

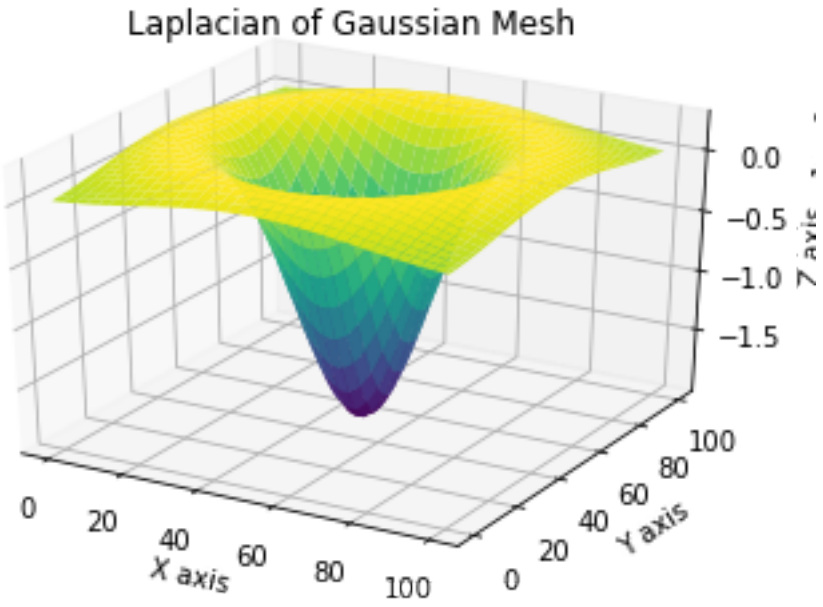


[2]:
```
a1.mesh()
```

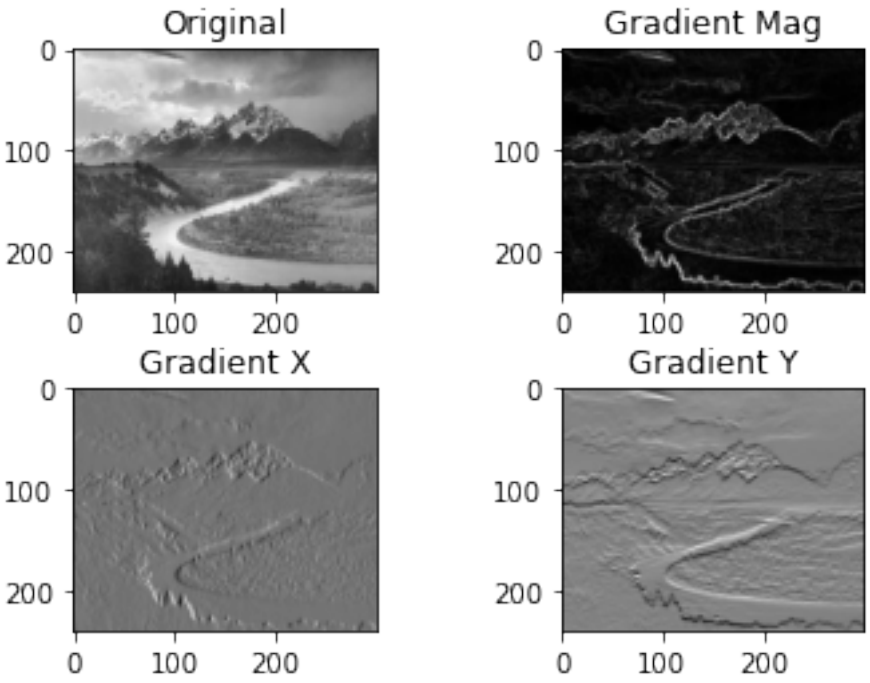
```
Enter sigma value for mesh plots= 20
```




First Order X Derivative of Gaussian Mesh
1.0
0.5
0.0
−0.5
−1.0
0
20
40
60
80
100
X axis
0
20
40
60
80
100
Y axis


Laplacian of Gaussian Mesh
0.0
−0.5
−1.0
−1.5
0
20
40
60
80
100
X axis
0
20
40
60
80
100
Y axis

[11]:
```
a1.sobel()
```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Gradient X
Gradient Y
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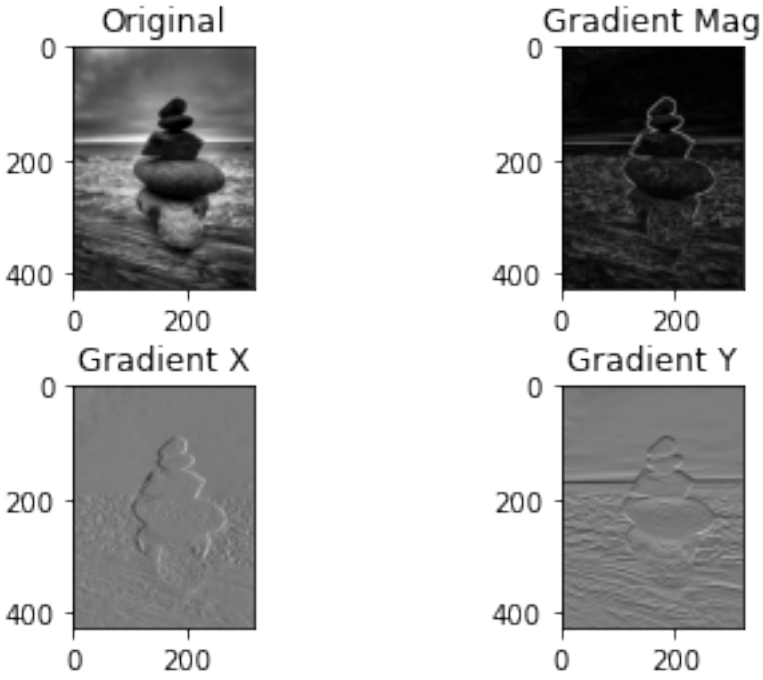
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Gradient X
Gradient Y
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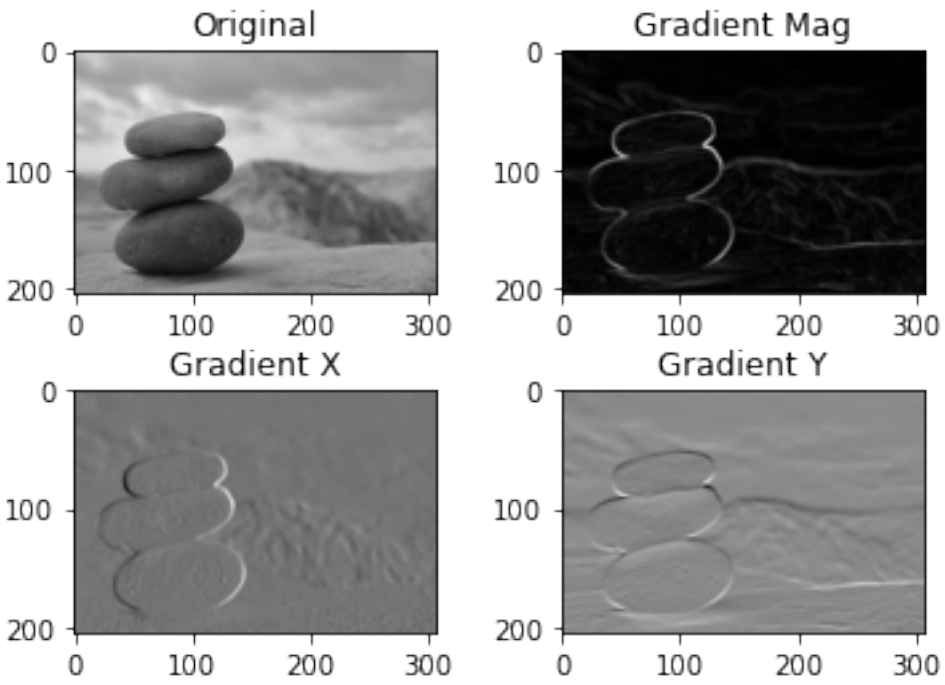
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Gradient Mag
Gradient X
Gradient Y
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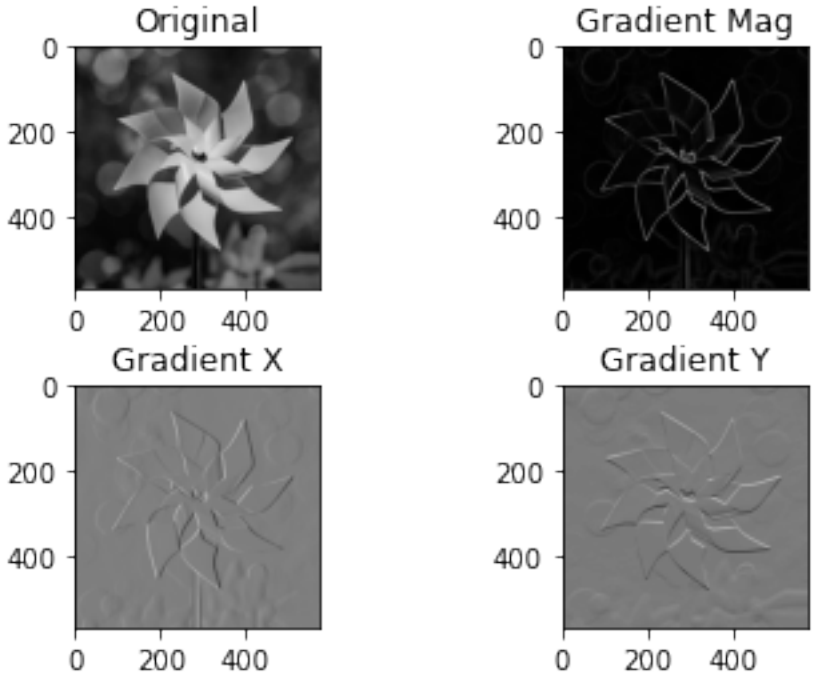
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Gradient X
Gradient Y
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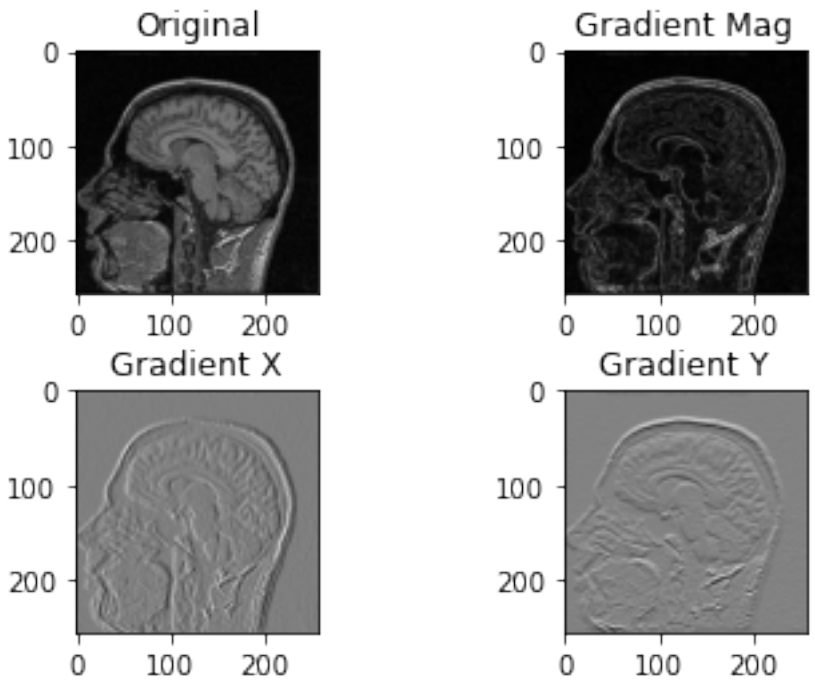
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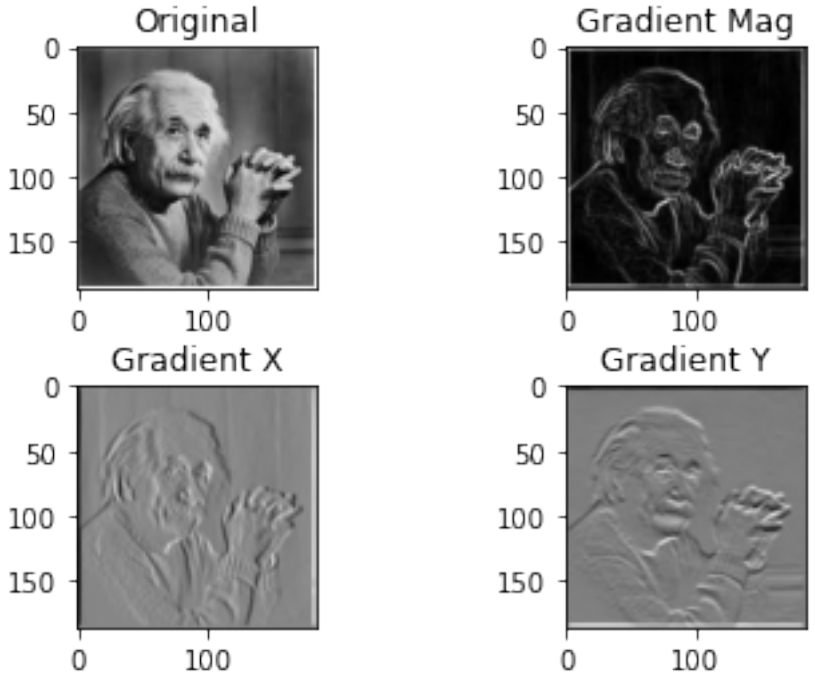
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Gradient X
Gradient Y
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[12]:
```
a1.LoG()
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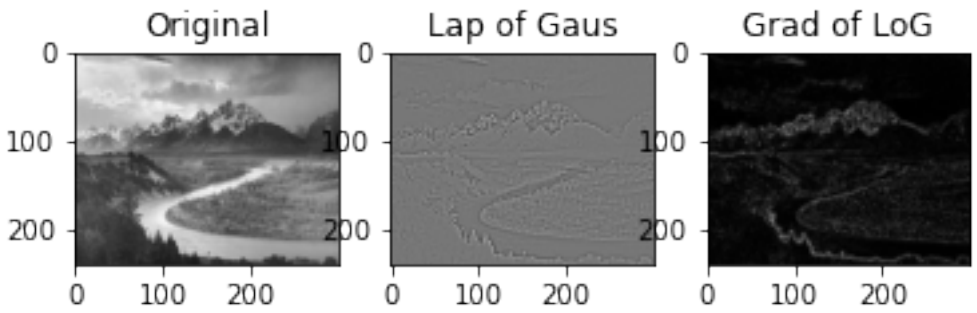
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Lap of Gaus
Grad of LoG
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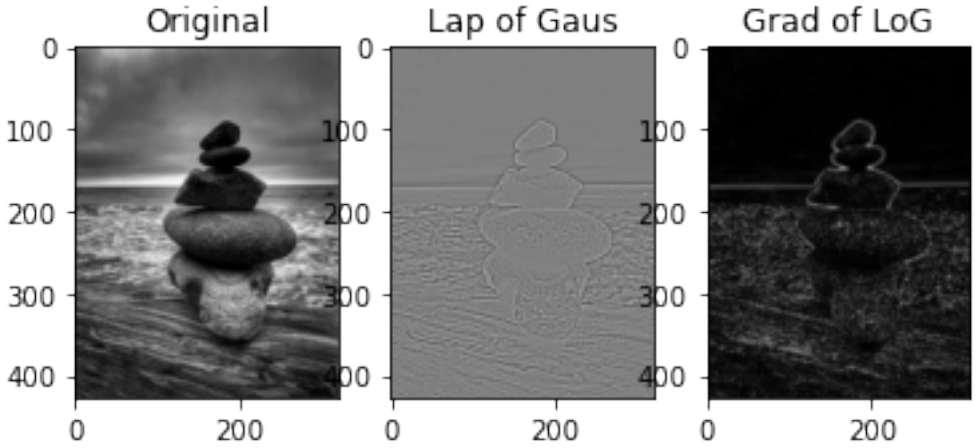
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Lap of Gaus
Grad of LoG
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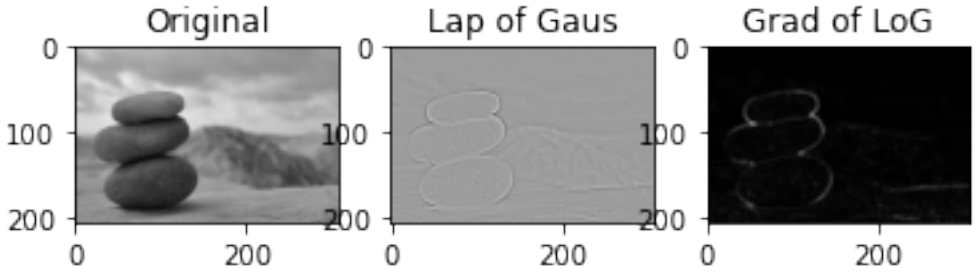
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Lap of Gaus
Grad of LoG
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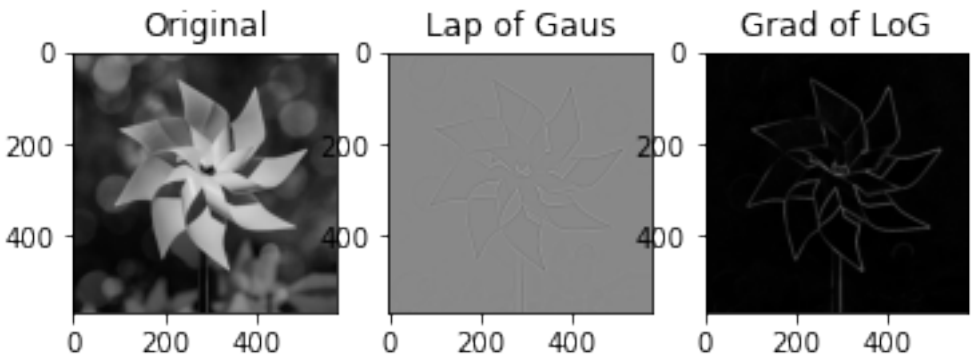
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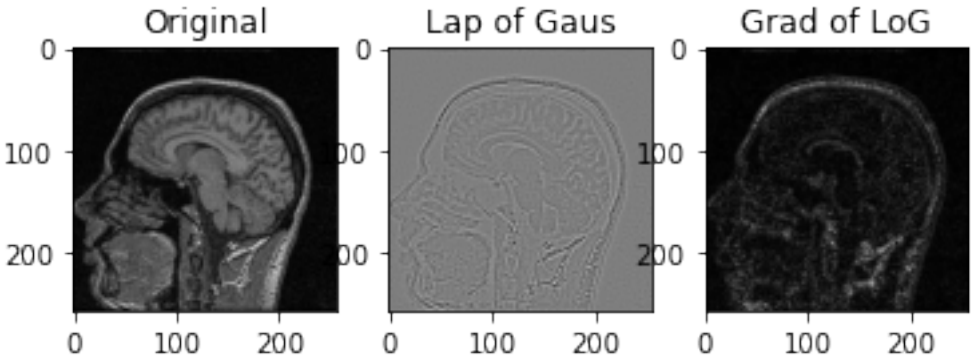
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Grad of LoG
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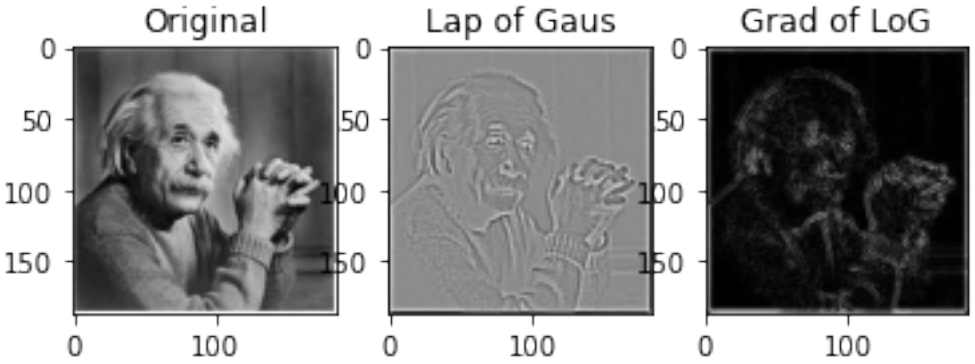
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Lap of Gaus
Grad of LoG
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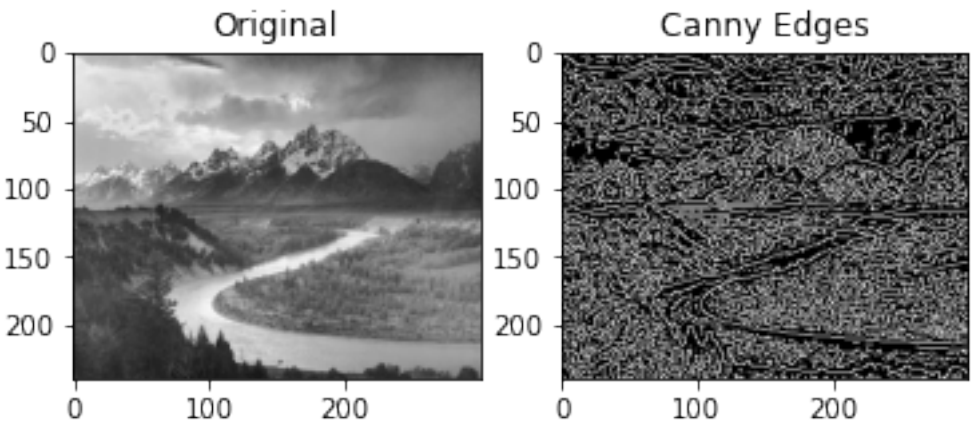
[2]:
```
a1.canny()
```


Original
Canny Edges
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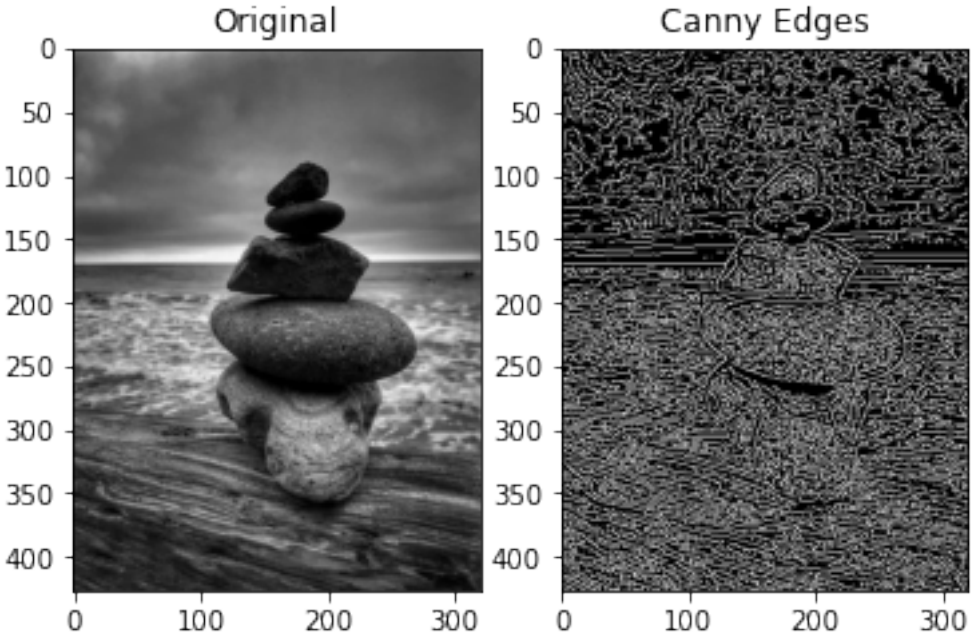
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Canny Edges
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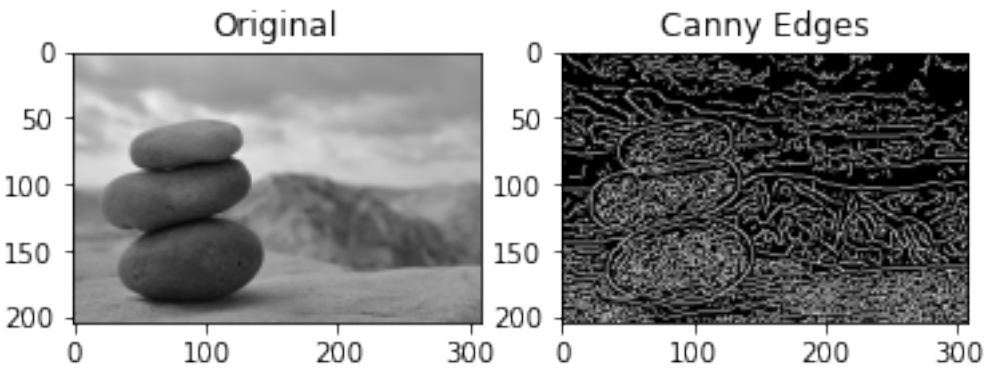
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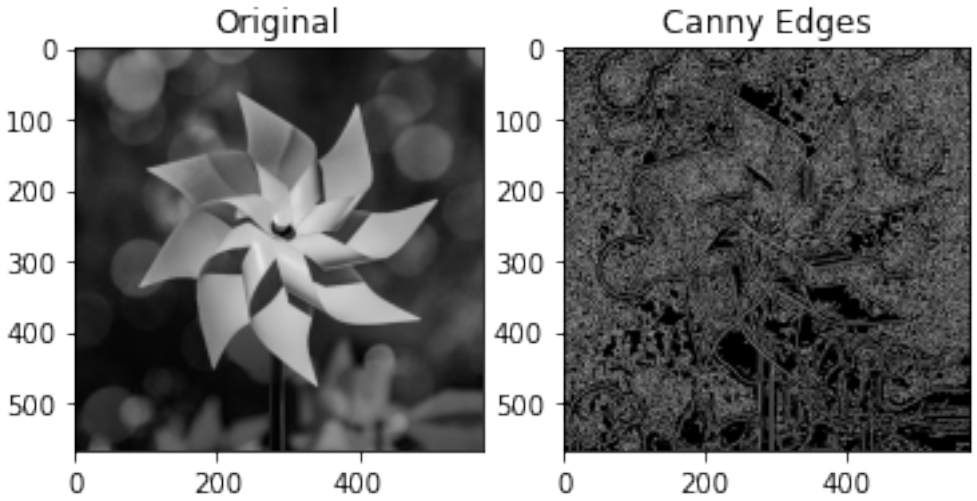
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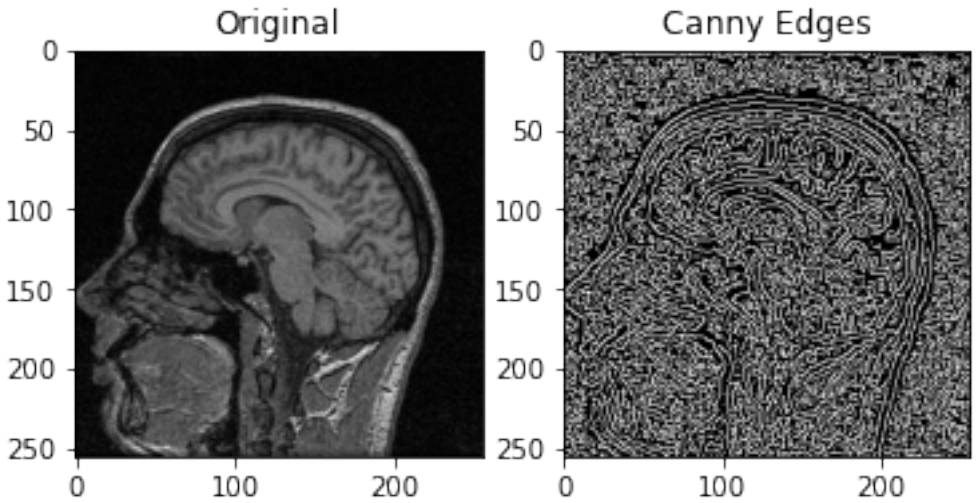
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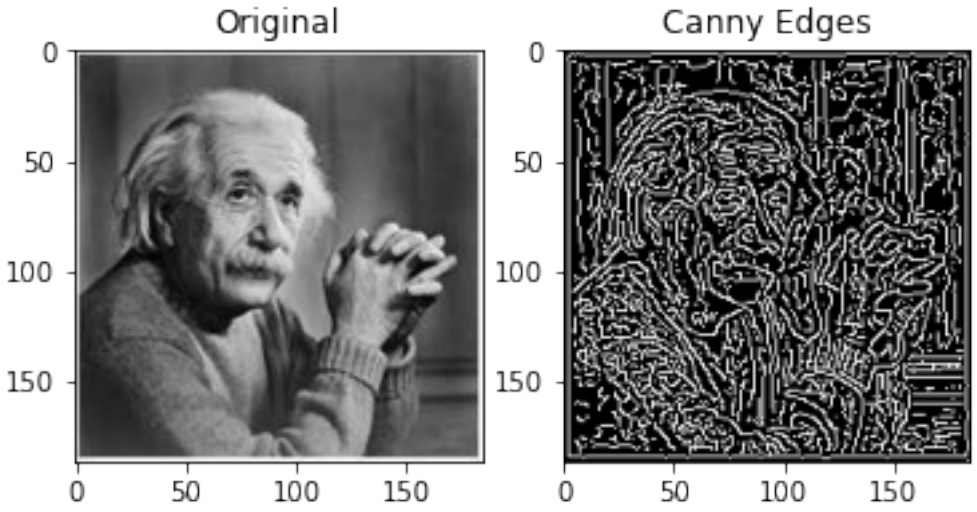

[2]:
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a1.cannyvid()
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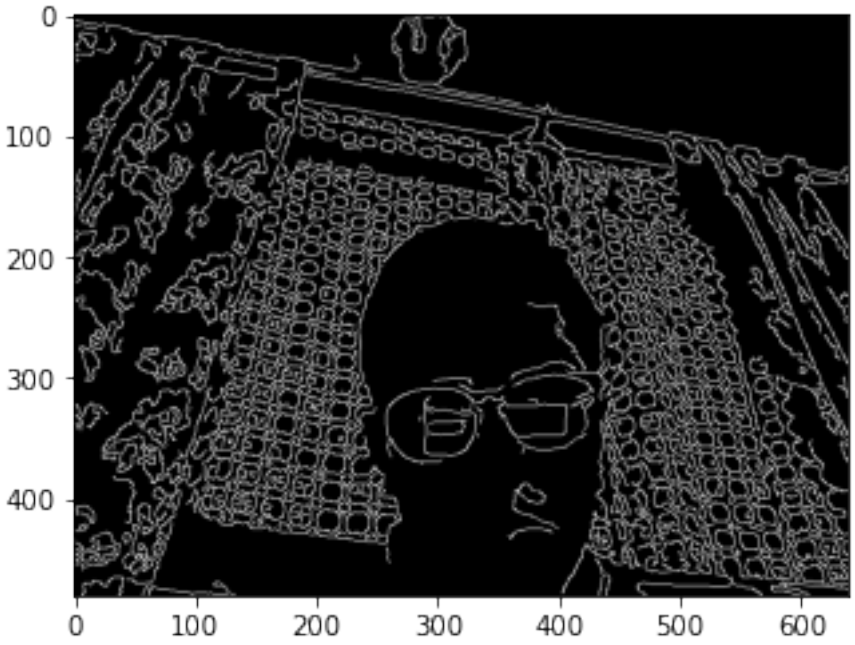

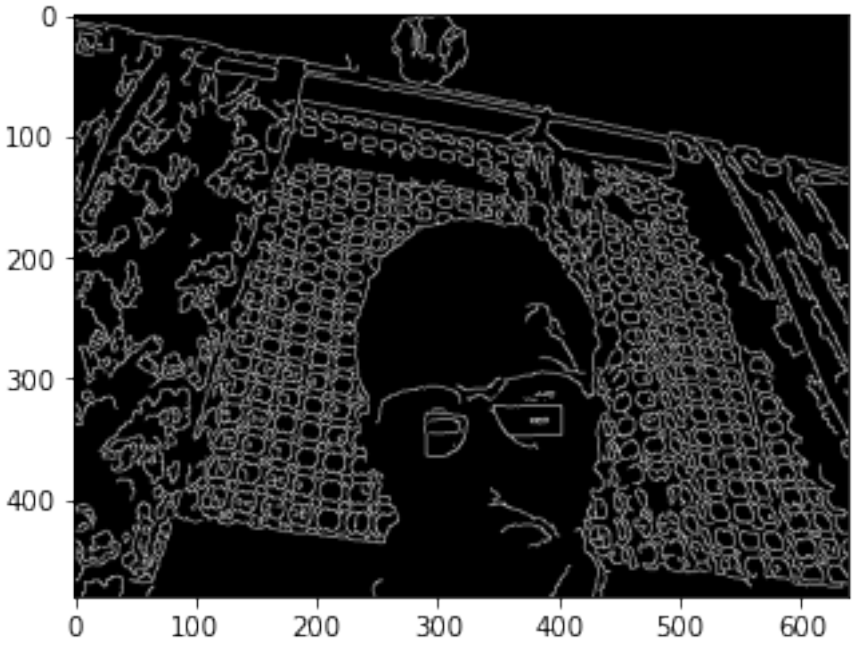
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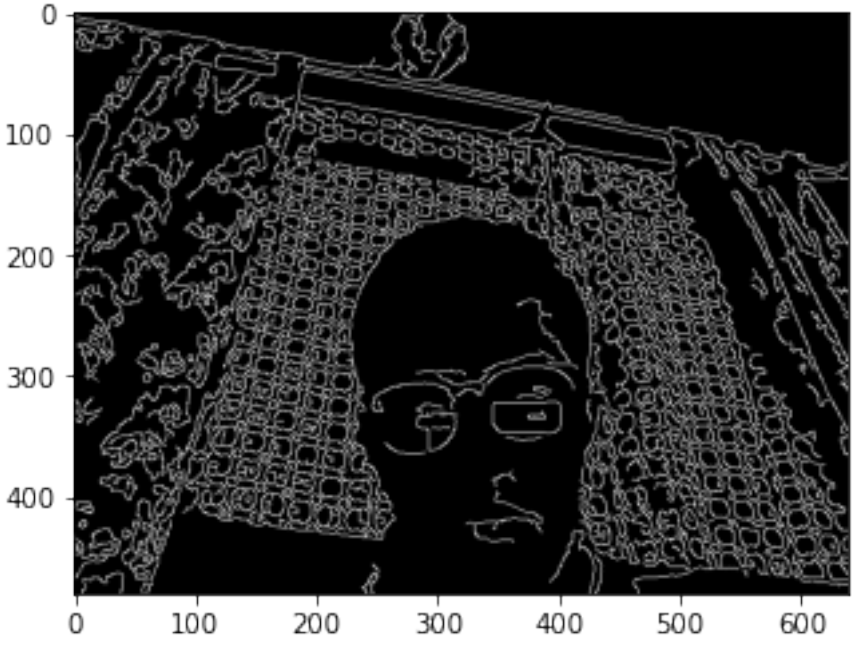
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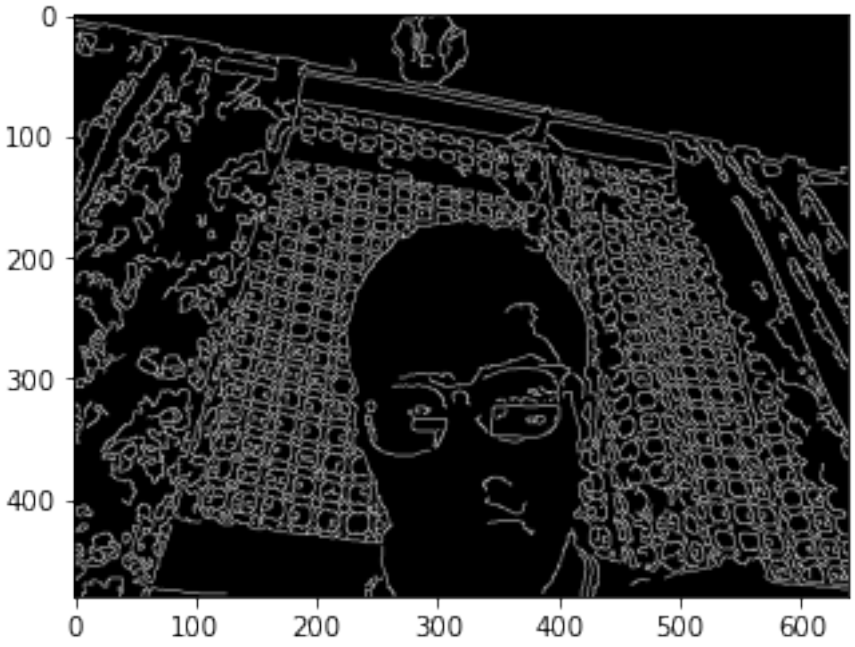
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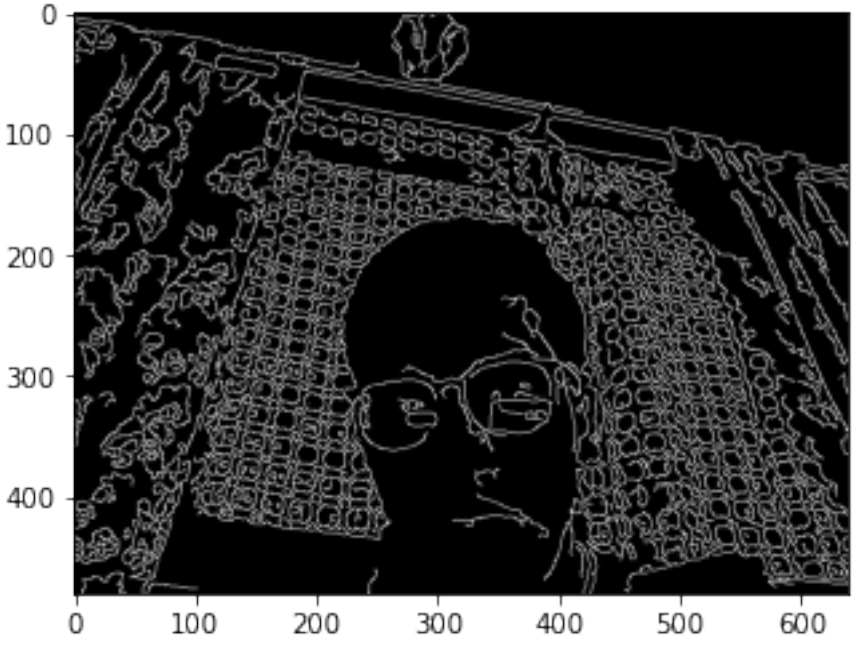
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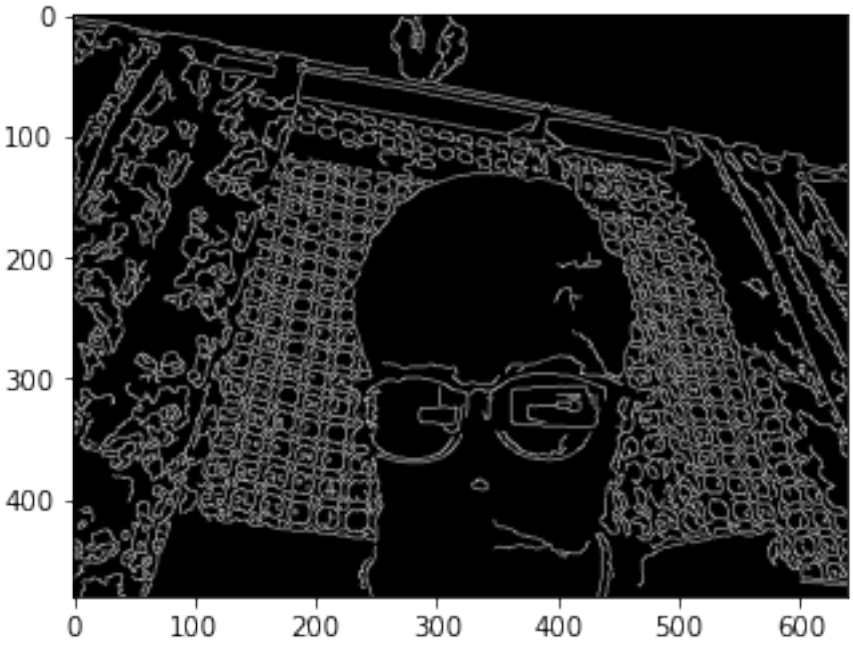
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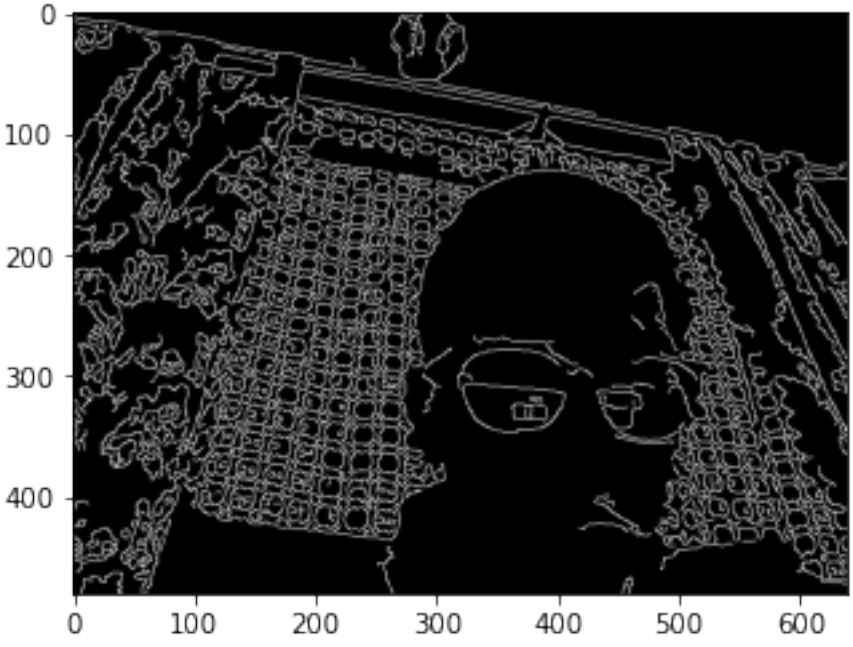
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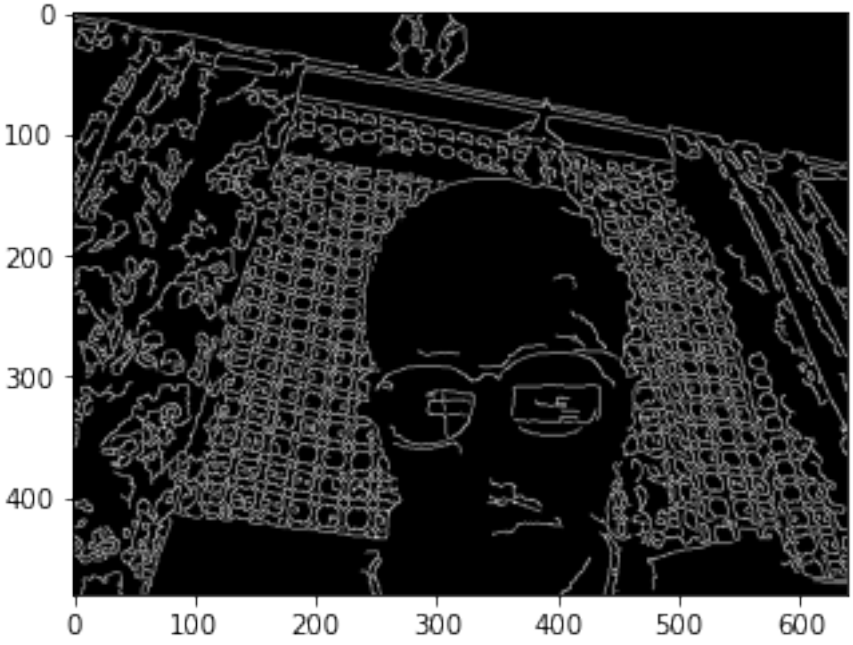
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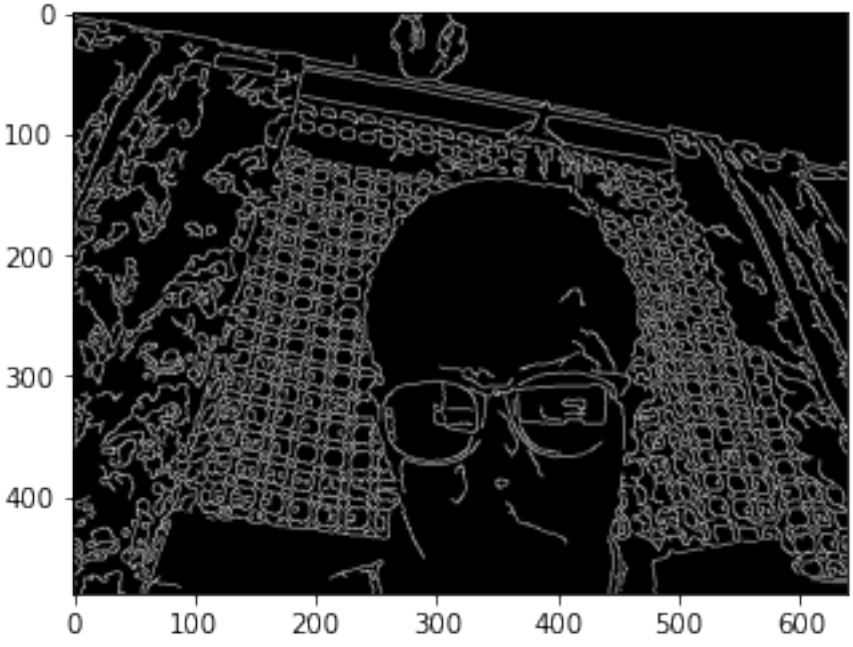
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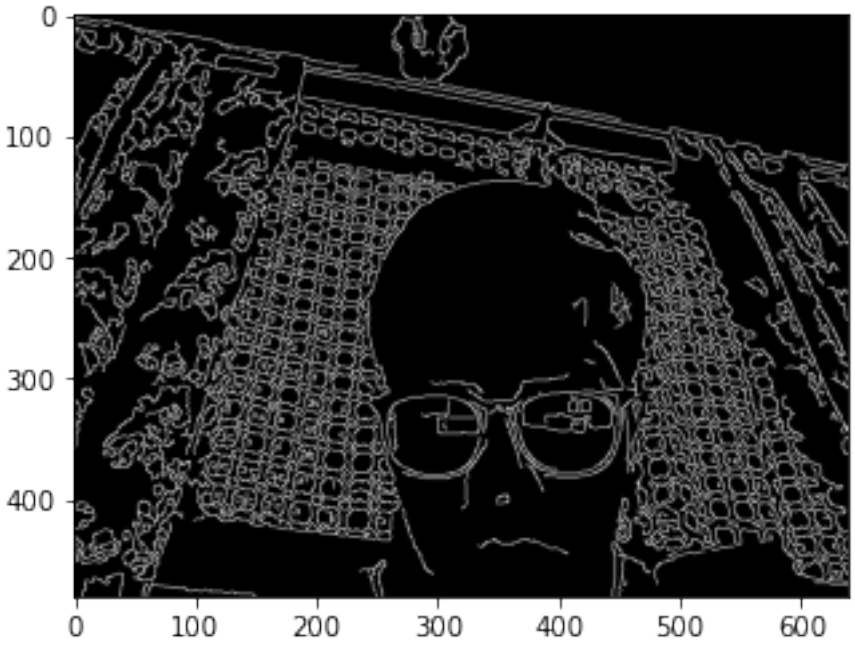
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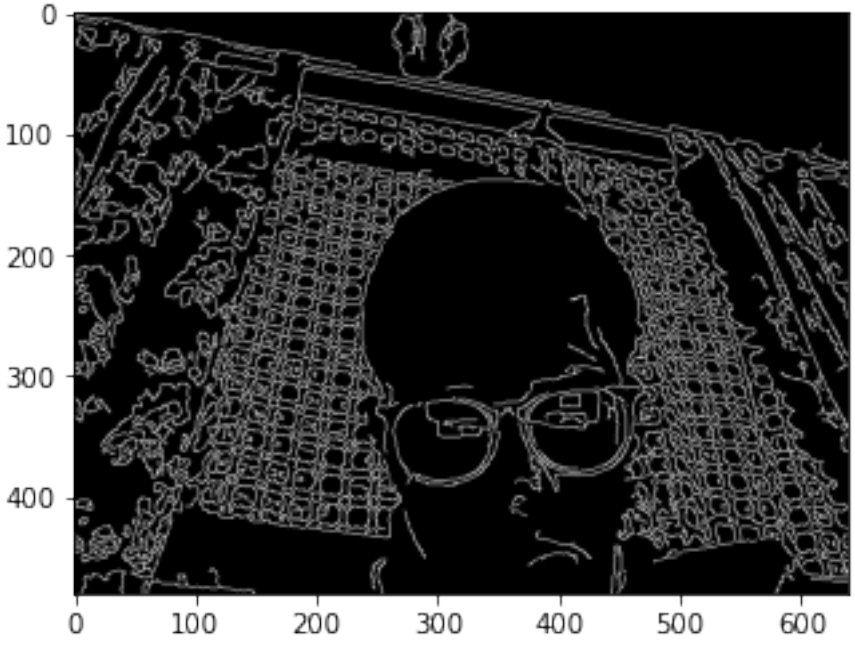
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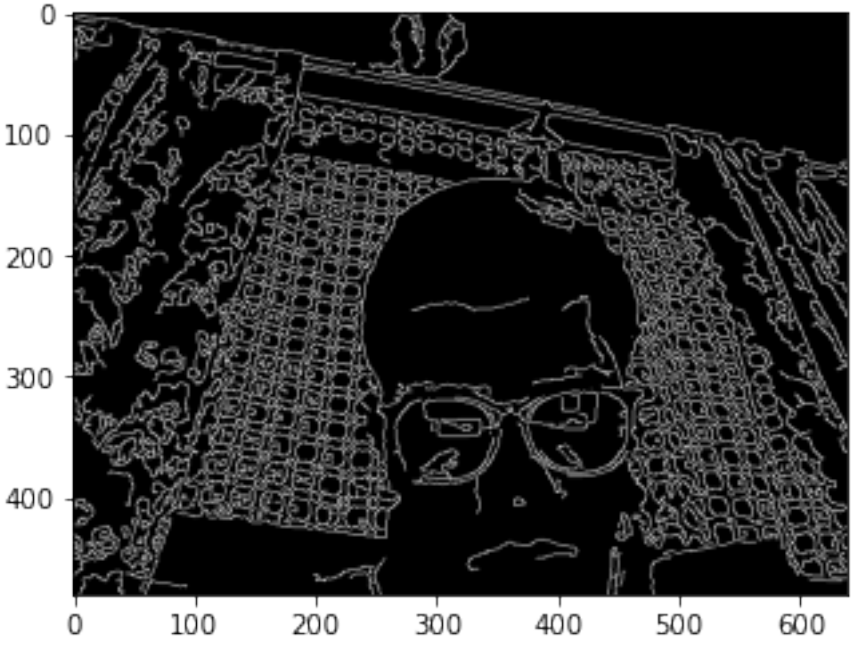
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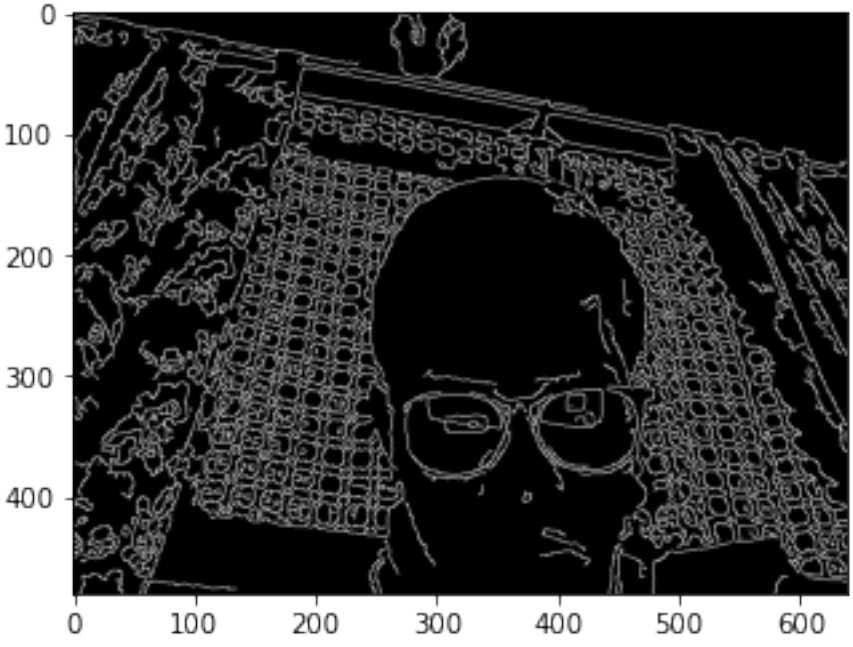
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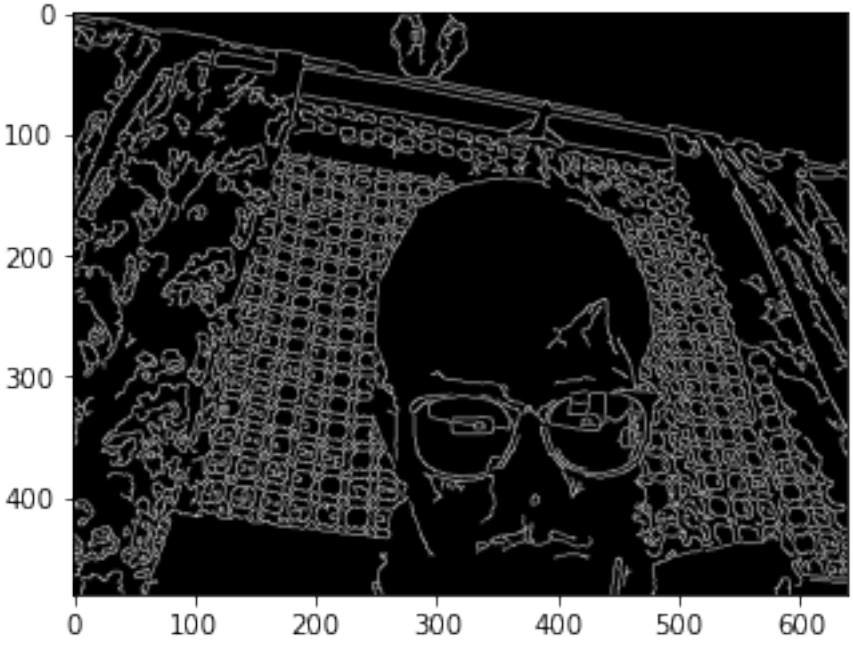
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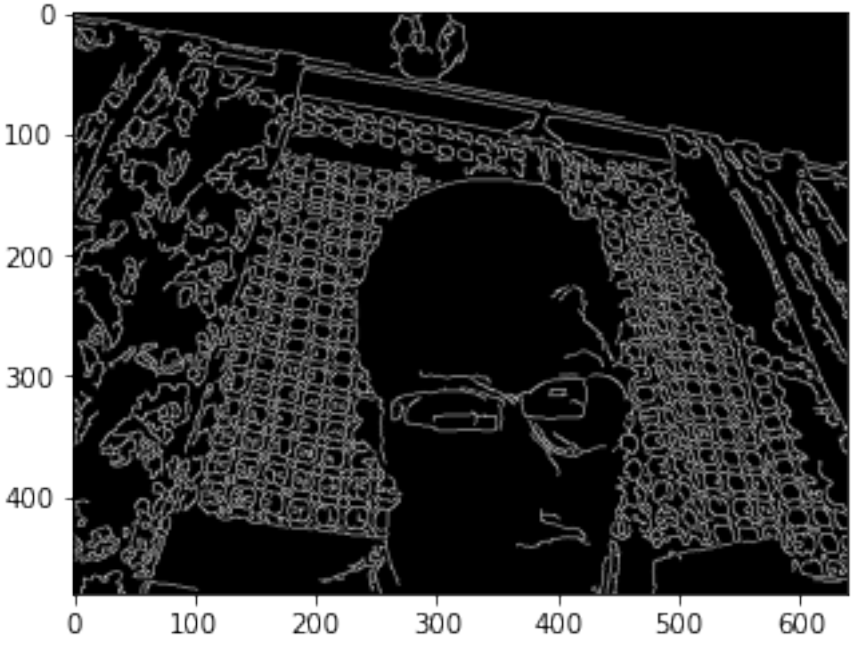
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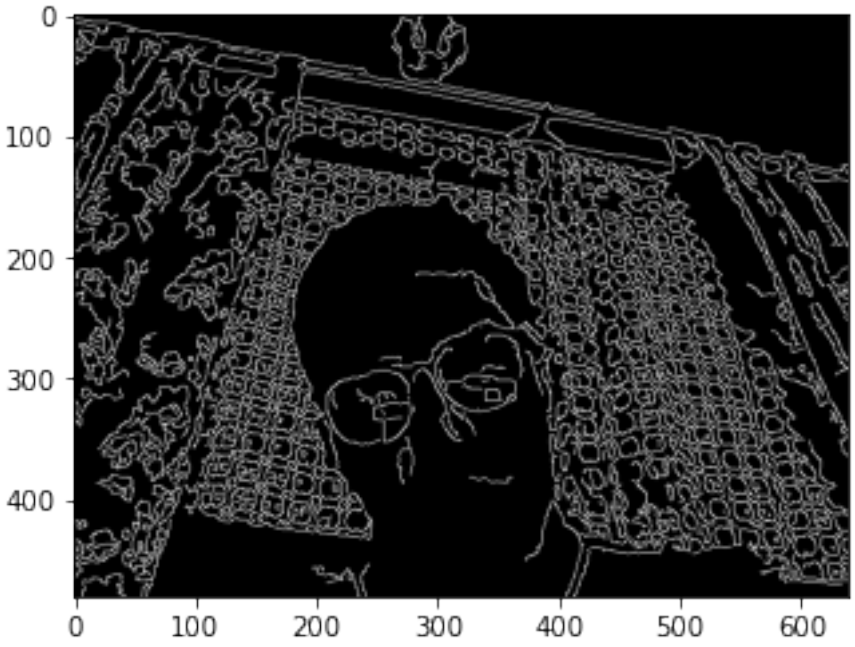
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