Faculty:Tilottama Goswami Computer Vision 1602-20-737-047
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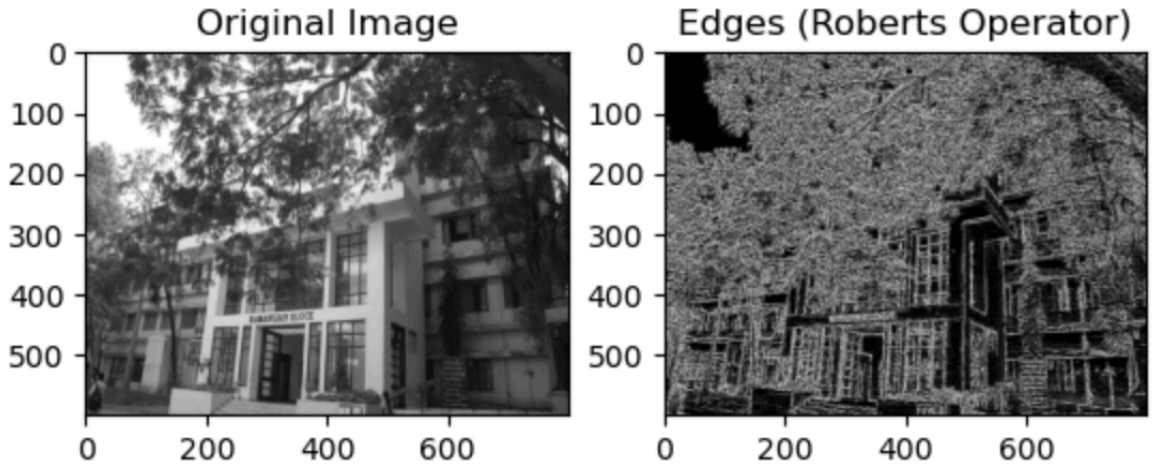
Edge detection-Gradient based operator(Robert)

```
import cv2
import numpy as np
import matplotlib.pyplot as plt
def roberts_operator(image):
    kernel_x = np.array([[1, 0], [0, -1]])
    kernel_y = np.array([[0, 1], [-1, 0]])
    gradient_x = cv2.filter2D(image, -1, kernel_x)
    gradient_y = cv2.filter2D(image, -1, kernel_y)
    gradient_magnitude = np.sqrt(gradient_x**2 + gradient_y**2)
 return gradient_magnitude
image = cv2.imread('Rblock.jpeg', cv2.IMREAD_GRAYSCALE)
edges = roberts_operator(image)
plt.subplot(121), plt.imshow(image, cmap='gray'), plt.title('Original Image')
plt.subplot(122), plt.imshow(edges, cmap='gray'), plt.title('Edges (Roberts Operator)')
plt.show()
```



Gaussian Based Operator(Canny)

```
import cv2
import matplotlib.pyplot as plt
img = cv2.imread('Rblock.jpeg')
edges = cv2.Canny(img, 100, 200, 3, L2gradient=True)
plt.figure()
plt.title('canny')
plt.imsave('canny1.png', edges, cmap='gray', format='png')
plt.imshow(edges, cmap='gray')
plt.show()
```