

```
import cv2
import numpy as np

image = cv2.imread(r"C:\Users\K.B.S PRADEEP\Downloads\image_search_1708233870475.jpg")
gray = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)
sobel_x = cv2.Sobel(gray, cv2.CV_64F, 1, 0, ksize=3)
sobel_y = cv2.Sobel(gray, cv2.CV_64F, 0, 1, ksize=3)
sobel_x = cv2.convertScaleAbs(sobel_x)
sobel_y = cv2.convertScaleAbs(sobel_y)
sobel_combined = cv2.addWeighted(sobel_x, 0.5, sobel_y, 0.5, 0)
cv2.imshow("Original Image", image)
cv2.imshow("Sobel X", sobel_x)
cv2.imshow("Sobel Y", sobel_y)
cv2.imshow("Sobel Combined", sobel_combined)
cv2.imwrite("sobel_x.jpg", sobel_x)
cv2.imwrite("sobel_y.jpg", sobel_y)
cv2.imwrite("sobel_combined.jpg", sobel_combined)
cv2.waitKey(0)
cv2.destroyAllWindows()
```



Original Image



Sobel Y



Sobel X



Sobel Combined

