

```
import cv2
import numpy as np
import os

image_path = r"C:\Users\K.B.S PRADEEP\Downloads\image_search_1708233870475.jpg"

if not os.path.exists(image_path):
    print(f"Error: File not found at {image_path}")
else:
    image = cv2.imread(image_path)

    if image is None:
        print("Error: Image could not be loaded.")
    else:
        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

