import cv2

import numpy as np

import matplotlib.pyplot as plt

from PIL import Image

image\_path = '/content/pexels-jonaskakaroto-736230.jpg'

image = Image.open(image\_path).convert('L')

image\_np = np.array(image)

sobel\_y = cv2.Sobel(image\_np, cv2.CV\_64F, 0, 1, ksize=3)

sobel\_y = cv2.convertScaleAbs(sobel\_y)

plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)

plt.imshow(image\_np, cmap='gray')

plt.title('Original Image')

plt.axis('off')

plt.subplot(1, 2, 2)

plt.imshow(sobel\_y, cmap='gray')

plt.title('Sobel Edge Detection (Y-axis)')

plt.axis('off')

plt.show()

