import cv2

import numpy as np

image = cv2.imread('coins.jpg', cv2.IMREAD\_GRAYSCALE)

if image is None:

raise ValueError("Image not found. Please check the file path.")

blurred\_image = cv2.GaussianBlur(image, (5, 5), 0)

sobel\_x = cv2.Sobel(blurred\_image, cv2.CV\_64F, 1, 0, ksize=5)

sobel\_y = cv2.Sobel(blurred\_image, cv2.CV\_64F, 0, 1, ksize=5)

gradient\_magnitude = cv2.magnitude(sobel\_x, sobel\_y)

gradient\_magnitude = cv2.normalize(gradient\_magnitude, None, 0, 255, cv2.NORM\_MINMAX).astype(np.uint8)

cv2.imshow('Original Image', image)

cv2.imshow('Blurred Image', blurred\_image)

cv2.imshow('Gradient Magnitude', gradient\_magnitude)

cv2.waitKey(0)

cv2.destroyAllWindows()