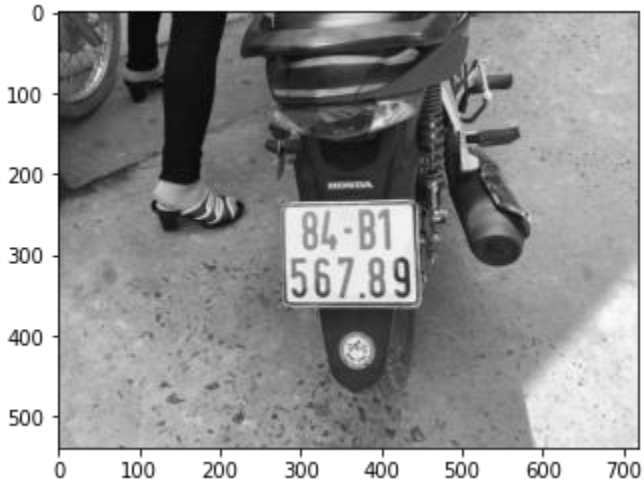
Lab Detect Biển số xe máy

```
import cv2
from matplotlib import pyplot as plt
image = cv2.imread('bienso1.jpg')
image.shape
```

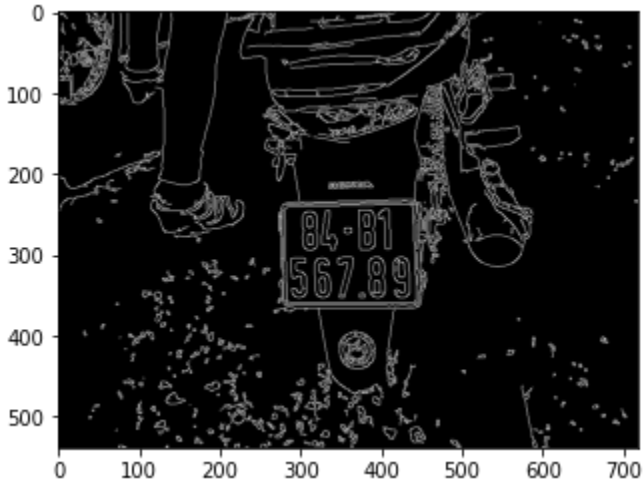
```
import imutils
image1 = imutils.resize(image, width=300 )
img = cv2.cvtColor(image1, cv2.COLOR_BGR2RGB)
plt.imshow(img)
plt.show()
```


```
gray_image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)
plt.imshow(gray_image,cmap="gray")
plt.show()
```



```
gray_image = cv2.bilateralFilter(gray_image, 11, 17, 17)
plt.imshow(gray_image,cmap="gray")
plt.show()
```


```
edged = cv2.Canny(gray_image, 30, 200)
plt.imshow(edged,cmap="gray")
plt.axis("off")
plt.show()
```



```
cnts,new = cv2.findContours(edged.copy(), cv2.RETR_LIST,
cv2.CHAIN_APPROX_SIMPLE)
image3=image.copy()
image3 = cv2.cvtColor(image3, cv2.COLOR_BGR2RGB)
cv2.drawContours(image3,cnts,-1,(0,255,0),1)
plt.imshow(image3)
plt.show()
```


```
cnts = sorted(cnts, key = cv2.contourArea, reverse = True) [:10]
image2 = image.copy()
image2 = cv2.cvtColor(image2, cv2.COLOR_BGR2RGB)
cv2.drawContours(image2,cnts,-1,(0,255,0),1)
plt.imshow(image2)
plt.show()
```

```
screenCnt = None
for c in cnts:
        perimeter = cv2.arcLength(c, True)
        approx = cv2.approxPolyDP(c, 0.018 * perimeter, True)
        if len(approx) == 4:
                screenCnt = approx
        x,y,w,h = cv2.boundingRect(c)
        new_img=image[y:y+h,x:x+w]
        plt.imshow(new_img)
        plt.show()
        break
```


```
cv2.drawContours(image, [screenCnt], -1, (0, 255, 0), 1)
image = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)
plt.imshow(image)
```