Homework7 Segmentation

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Question

自选图像和分割方法，实现图像分割。

Answer

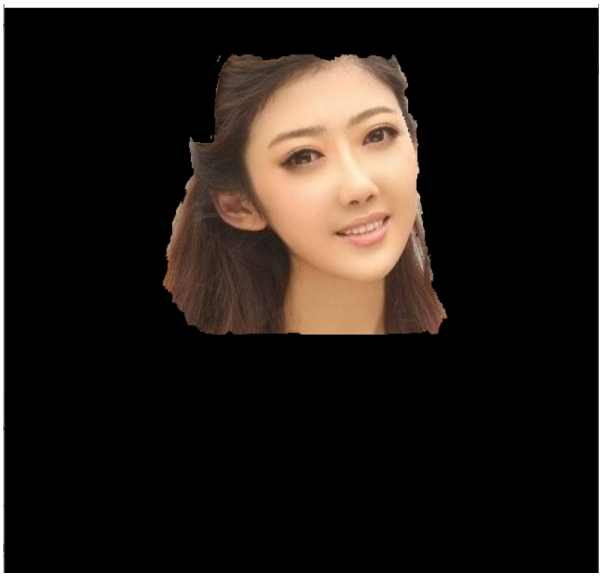
- 本次作业采用grab-cut分割方法，具体代码如下所示；

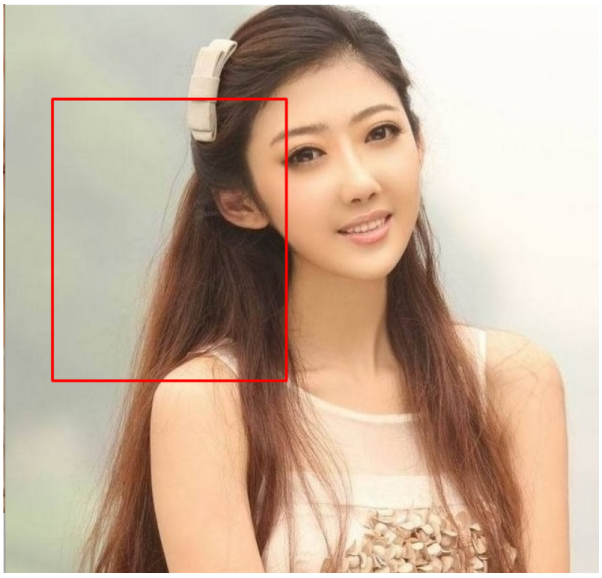
```
import numpy as np
import cv2


def main():
    # img = cv2.imread('plane.jpg')
    img=cv2.imread('./girl.jpg')

    cv2.imshow("plane", img)
    row, col, channel = img.shape
    print("row=", row)
    print("col=", col)
    mask = np.zeros(img.shape[:2], np.uint8)

    bgdModel = np.zeros((1, 65), np.float64)
    fgdModel = np.zeros((1, 65), np.float64)

    # rect = (100, 50, 220, 400)  # the interesting area
    rect = (100, 50, 400, 300)  # the interesting area

    imgrect = img.copy()
    # imgrect = cv2.rectangle(imgrect, (50, 100), (400, 200), (0, 0, 255), 2)
    imgrect = cv2.rectangle(imgrect, (50, 100), (300, 400), (0, 0, 255), 2)

    cv2.imshow("rect", imgrect)

    mask, bgdModel, fgdModel = cv2.grabCut(img, mask, rect, bgdModel, fgdModel, 5, cv2.GC_INIT_WITH_RECT)
    # print(fgdModel)

    mask2 = np.where((mask == 2) | (mask == 0), 0, 1).astype('uint8')
    img = img * mask2[:, :, np.newaxis]
    cv2.imshow('plane', img)

    cv2.waitKey(0)
    cv2.destroyAllWindows()
```

```
if __name__ == "__main__":
    main()
```

- 采用图片：

- 运行结果：





- 总结：grab-cut方法受选用的感兴趣区域的范围影响很大，该参数很大程度上决定了分割质量。