

如何识别多个人

在前边的章节中，我们学到了如何找到一张照片里多个人中最大的人脸。那么，当我们想识别图像中所有的人脸时，我们要如何处理呢？

任务介绍

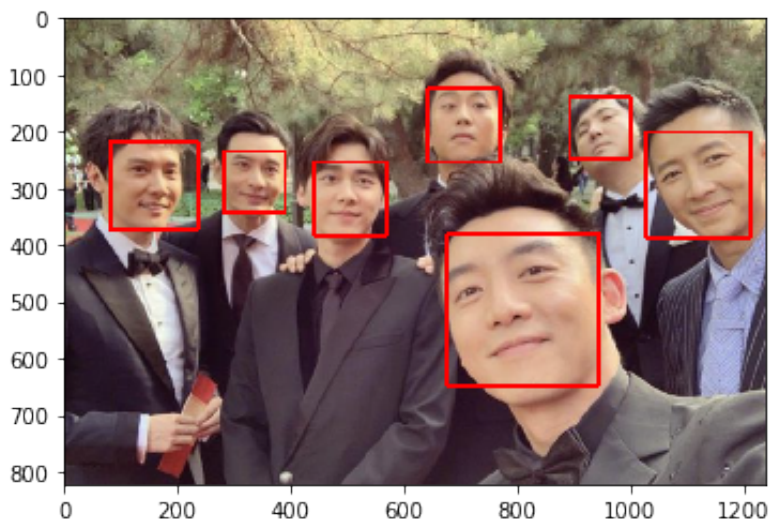
- 假设有一张包含多个人脸的图片，请同学们利用之前章节学到的知识，尝试提取出图片上所有人脸的特征，并打印出来。

知识点

- 循环
- 人脸检测
- 人脸特征提取

首先，我们要利用人脸检测接口检测出图片中的所有人脸

```
In [3]: from API.FaceAPI_dlib import *  
faceAPI = FaceAPI()  
  
img = cv2.imread('data/group.png')  
rects = faceAPI.detect(img)  
showWithRects(img, rects)
```



然后，利用人脸特征提取接口按顺序提取每张人脸的特征

```
In [2]: features = []
        for i,rect in enumerate(rects):
            feature = faceAPI.extractFeature(img,rect)
            features.append(feature)
            print('第%d个人'%(i),feature)
```

```
第0个人 Feature(-0.08,0.11,0.03,-0.01,-0.07,-0.04,-0.06,-0.15,0.17,
-0.12,0.21,-0.08,-0.20,-0.14,-0.01,0.16,-0.20,-0.13,-0.05,-0.07,0.
10,0.02,0.04,0.01,-0.13,-0.32,-0.09,-0.04,0.06,-0.06,-0.10,0.01,-0
.23,-0.12,0.04,0.12,-0.04,-0.04,0.18,-0.07,-0.20,0.01,0.03,0.18,0.
23,0.04,-0.01,-0.18,0.15,-0.12,0.10,0.15,0.07,0.09,-0.00,-0.12,-0.
02,0.18,-0.09,-0.03,0.11,-0.11,-0.01,-0.06,0.10,0.04,-0.02,-0.29,0
.14,-0.19,-0.10,0.10,-0.09,-0.15,-0.37,-0.03,0.37,0.12,-0.20,0.01,
-0.02,-0.03,0.18,0.09,-0.01,0.03,-0.15,-0.01,0.25,-0.03,-0.09,0.17
,0.03,0.10,0.08,0.02,-0.07,0.06,-0.18,-0.05,0.02,0.00,-0.04,0.13,-
0.11,0.20,-0.00,0.06,-0.05,-0.06,-0.09,-0.02,0.15,-0.20,0.16,0.15,
0.08,0.16,0.11,0.10,-0.03,-0.03,-0.25,-0.04,0.07,0.00,0.15,0.05)
第1个人 Feature(-0.08,0.04,0.09,-0.08,-0.14,-0.04,-0.03,-0.11,0.10,
-0.11,0.21,-0.06,-0.21,-0.06,-0.07,0.22,-0.21,-0.14,-0.02,0.02,0.1
1,-0.02,0.03,-0.01,-0.07,-0.37,-0.12,-0.08,0.01,-0.05,0.00,0.04,-0
.22,-0.05,-0.01,0.04,0.02,-0.09,0.16,-0.02,-0.27,0.09,0.03,0.24,0.
20,0.03,0.05,-0.11,0.09,-0.15,0.07,0.09,0.07,0.03,-0.03,-0.10,0.08
,0.16,-0.18,0.04,0.14,-0.06,0.01,-0.06,0.23,0.05,-0.12,-0.18,0.14,
-0.11,-0.08,0.01,-0.22,-0.14,-0.33,0.01,0.39,0.06,-0.20,0.03,-0.05
,0.06,0.15,0.16,0.03,-0.01,-0.09,-0.01,0.23,-0.06,-0.09,0.22,-0.02
,-0.00,0.02,0.04,-0.02,0.04,-0.11,0.00,0.03,-0.07,-0.07,0.15,-0.19
,0.13,-0.05,0.08,0.00,-0.03,-0.09,-0.01,0.13,-0.21,0.26,0.25,0.05,
0.07,0.10,0.05,-0.01,-0.01,-0.27,-0.03,0.12,-0.04,0.12,0.05)
第2个人 Feature(-0.04,0.12,-0.07,-0.04,-0.06,0.02,-0.05,-0.14,0.18,
-0.11,0.19,-0.03,-0.20,-0.12,-0.03,0.16,-0.21,-0.19,0.01,0.03,0.15
,0.04,0.01,0.06,-0.09,-0.27,-0.13,-0.05,0.03,-0.06,-0.08,0.03,-0.2
1,-0.08,0.08,0.09,-0.00,-0.06,0.16,0.01,-0.20,0.07,0.07,0.22,0.16,
0.04,-0.04,-0.21,0.10,-0.16,0.09,0.18,0.13,0.08,-0.01,-0.13,0.04,0
.11,-0.10,0.01,0.08,-0.05,-0.00,-0.07,0.14,0.06,-0.07,-0.24,0.10,-
0.15,-0.18,0.08,-0.12,-0.18,-0.32,-0.03,0.36,0.13,-0.24,0.08,-0.01
,0.03,0.16,0.16,-0.02,0.00,-0.12,-0.01,0.26,-0.05,-0.09,0.20,0.02,
0.13,0.08,0.05,0.02,0.03,-0.17,-0.03,0.01,-0.00,-0.08,0.18,-0.14,0
.12,0.02,0.01,0.00,0.00,-0.09,-0.04,0.10,-0.24,0.21,0.16,0.03,0.10
,0.10,0.13,-0.01,-0.07,-0.25,-0.06,0.11,0.00,0.06,-0.01)
第3个人 Feature(-0.05,0.18,0.06,-0.04,-0.13,-0.04,-0.10,-0.14,0.08,
-0.07,0.21,-0.04,-0.16,-0.09,0.01,0.13,-0.22,-0.21,0.01,0.01,0.13,
0.02,0.00,0.04,-0.07,-0.31,-0.14,-0.11,0.05,-0.04,-0.02,-0.05,-0.1
9,-0.10,0.07,0.02,-0.04,-0.11,0.18,-0.04,-0.25,0.08,0.08,0.22,0.18
,0.06,0.03,-0.11,0.10,-0.09,0.13,0.19,0.14,0.03,0.03,-0.16,0.03,0.
15,-0.21,0.04,0.15,-0.05,0.02,-0.07,0.14,0.12,-0.02,-0.28,0.16,-0.
14,-0.15,0.11,-0.18,-0.14,-0.23,-0.03,0.41,0.10,-0.14,0.02,-0.02,-
0.02,0.10,0.09,-0.01,-0.04,-0.11,0.00,0.22,-0.01,-0.09,0.15,-0.01,
0.00,0.07,-0.00,-0.03,0.08,-0.13,-0.03,-0.06,-0.05,-0.06,0.13,-0.1
5,0.08,-0.01,0.03,-0.09,0.00,-0.10,0.01,0.14,-0.21,0.25,0.15,0.06,
0.08,0.08,0.07,0.02,-0.12,-0.28,-0.07,0.07,-0.02,0.13,0.04)
第4个人 Feature(-0.10,0.08,0.02,-0.07,-0.14,-0.08,-0.07,-0.14,0.10,
-0.10,0.17,-0.05,-0.14,-0.03,-0.02,0.18,-0.24,-0.13,-0.03,-0.05,0.
```

```
09,0.02,-0.00,0.00,-0.10,-0.34,-0.07,-0.13,0.02,-0.05,-0.01,0.02,-
0.13,-0.03,0.08,0.07,0.01,-0.06,0.16,-0.03,-0.25,0.09,0.10,0.20,0.
24,0.04,0.00,-0.15,0.19,-0.13,-0.01,0.08,0.10,0.07,0.01,-0.12,0.08
,0.06,-0.24,-0.03,0.13,-0.07,0.00,-0.04,0.23,0.08,-0.09,-0.20,0.13
,-0.18,-0.10,0.05,-0.15,-0.14,-0.25,-0.03,0.39,0.11,-0.17,0.01,-0.
05,-0.01,0.12,0.11,-0.02,-0.04,-0.06,-0.03,0.26,-0.07,-0.03,0.17,0
.02,0.07,0.01,0.01,-0.11,0.05,-0.11,-0.05,-0.03,-0.04,0.02,0.16,-0
.18,0.16,-0.05,0.02,-0.04,0.03,-0.02,-0.04,0.11,-0.19,0.22,0.21,0.
09,0.10,0.03,0.03,-0.04,0.02,-0.23,-0.02,0.06,-0.03,0.08,0.01)
第5个人 Feature(-0.05,0.05,-0.01,-0.04,-0.07,-0.03,-0.03,-0.14,0.16
,-0.11,0.20,-0.03,-0.15,-0.05,-0.00,0.19,-0.22,-0.14,-0.05,-0.03,0
.11,-0.01,-0.02,0.05,-0.16,-0.27,-0.12,-0.08,0.02,-0.02,-0.03,0.02
,-0.20,-0.06,0.08,0.08,0.00,-0.11,0.19,0.02,-0.25,0.08,0.07,0.22,0
.17,0.04,0.01,-0.14,0.17,-0.14,0.05,0.11,0.10,0.05,0.02,-0.12,0.05
,0.15,-0.18,-0.02,0.09,-0.08,0.00,-0.10,0.20,0.12,-0.07,-0.22,0.14
,-0.12,-0.14,0.06,-0.17,-0.15,-0.34,-0.03,0.41,0.10,-0.19,0.05,-0.
02,0.03,0.18,0.16,0.03,0.00,-0.06,-0.02,0.27,-0.04,-0.08,0.16,-0.0
1,0.04,0.01,-0.02,-0.07,0.03,-0.13,-0.06,0.01,0.06,0.00,0.17,-0.18
,0.10,-0.01,0.01,0.00,0.01,-0.07,-0.02,0.09,-0.25,0.20,0.16,0.02,0
.07,0.06,0.05,-0.03,0.01,-0.29,-0.03,0.11,-0.01,0.12,-0.01)
第6个人 Feature(-0.16,0.10,0.01,-0.08,-0.16,-0.05,0.02,-0.13,0.14,-
0.08,0.21,-0.05,-0.25,-0.06,-0.02,0.19,-0.19,-0.09,-0.05,-0.00,0.1
4,0.11,-0.00,0.07,-0.06,-0.41,-0.04,-0.03,0.02,-0.01,-0.01,0.05,-0
.18,-0.06,0.04,0.08,-0.07,-0.08,0.18,0.05,-0.27,0.01,0.09,0.27,0.1
4,0.01,0.05,-0.16,0.13,-0.12,-0.03,0.13,0.10,0.04,-0.00,-0.12,0.06
,0.13,-0.25,-0.00,0.13,-0.14,-0.01,-0.07,0.19,0.03,-0.07,-0.18,0.1
2,-0.17,-0.15,0.02,-0.11,-0.19,-0.30,-0.03,0.32,0.13,-0.18,0.04,-0
.01,-0.01,0.18,0.19,-0.00,0.01,-0.11,0.01,0.20,-0.05,-0.01,0.27,0.
08,0.03,0.04,0.02,-0.14,0.07,-0.12,-0.04,0.03,-0.05,0.07,0.10,-0.2
0,0.20,-0.00,0.04,0.02,-0.06,-0.05,-0.04,0.06,-0.17,0.21,0.17,0.06
,0.17,0.09,0.04,-0.02,-0.02,-0.22,-0.03,0.12,-0.04,0.13,-0.00)
```