

第14節

Face detection

1

臉部辨識
技術說明

2

認識
Cascade

3

熟悉
Detector

同學，歡迎你參加本課程

- ☑ 請關閉你的FB、Line等溝通工具，以免影響你上課。
- ☑ 考量頻寬，請預設關閉麥克風、攝影機，若有需要再打開。
- ☑ 隨時準備好，老師會呼叫你的名字進行互動。
- ☑ 如果有緊急事情，你必需離開線上教室，請用聊天室私訊給老師，以免老師癡癡呼喚你的名字。
- ☑ 先倒好水、上個洗手間，準備上課囉^^

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程式語言好難學?

那是因為

你還沒學過Python!

(線上老師 **LIVE** 直播教學 · 搶先看)

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ZOOM 學員操作說明

The screenshot shows the Zoom interface with several key areas highlighted for student use:

- 5 查看選項/共同註記/筆 (連連看)**: A dropdown menu is open from the '查看選項' (View Options) button in the top right. The '共同註記' (Annotate) option is highlighted, which leads to the drawing toolbar below.
- 2 共享螢幕 (指導演練; 點評作品)**: The '共享螢幕' (Share Screen) button in the bottom toolbar is highlighted. A note specifies: '老師須先停止共享螢幕 才能請學生共享螢幕' (The teacher must first stop sharing the screen before asking the student to share the screen).
- 1 聊天**: The '聊天' (Chat) button in the bottom toolbar is highlighted.
- 3 與會者/舉手**: The '與會者' (Participants) button in the bottom toolbar is highlighted. An arrow points from this button to a '與會者 (15)' (Participants 15) window. In this window, the '舉手' (Raise Hand) button is highlighted.
- 4 解除靜音**: The '解除靜音' (Unmute) button in the bottom toolbar is highlighted.

Other visible interface elements include the top bar with the URL 'www.pcschool.com.tw', the '您正在觀看蘇世榮的螢幕' (You are watching Su Shihong's screen) notification, and the drawing toolbar with icons for '滑鼠' (Mouse), '文字' (Text), '筆' (Pen), '箭頭' (Arrow), '擦除' (Erase), '格式' (Format), '撤銷' (Undo), '重做' (Redo), and '清除' (Clear).

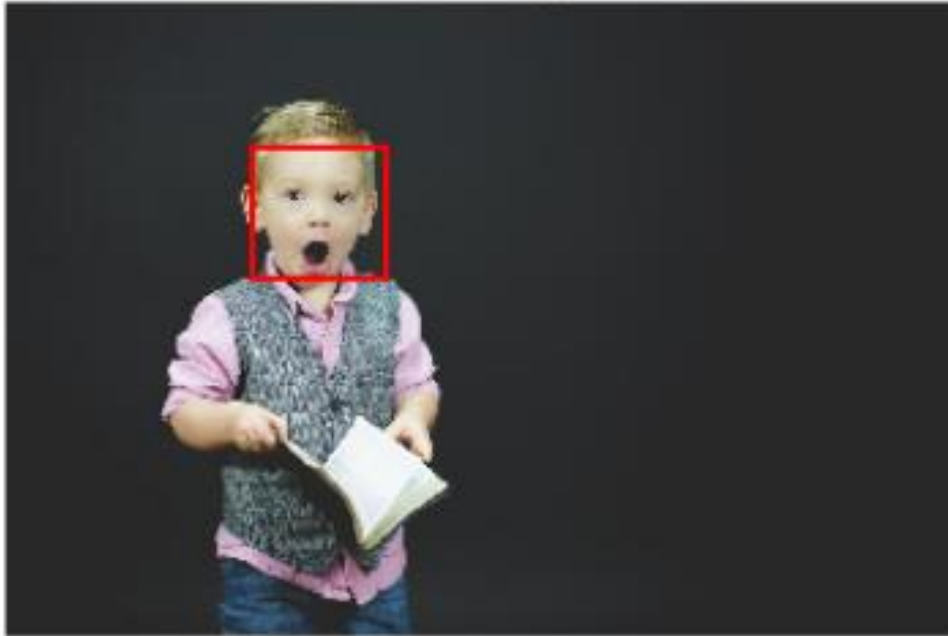
Face detection use cases

- Filters
- Auto focus
- Recommendations
- Blur for privacy protection
- To recognize emotions later on



Detecting faces with scikit-image

Face image



Face detected



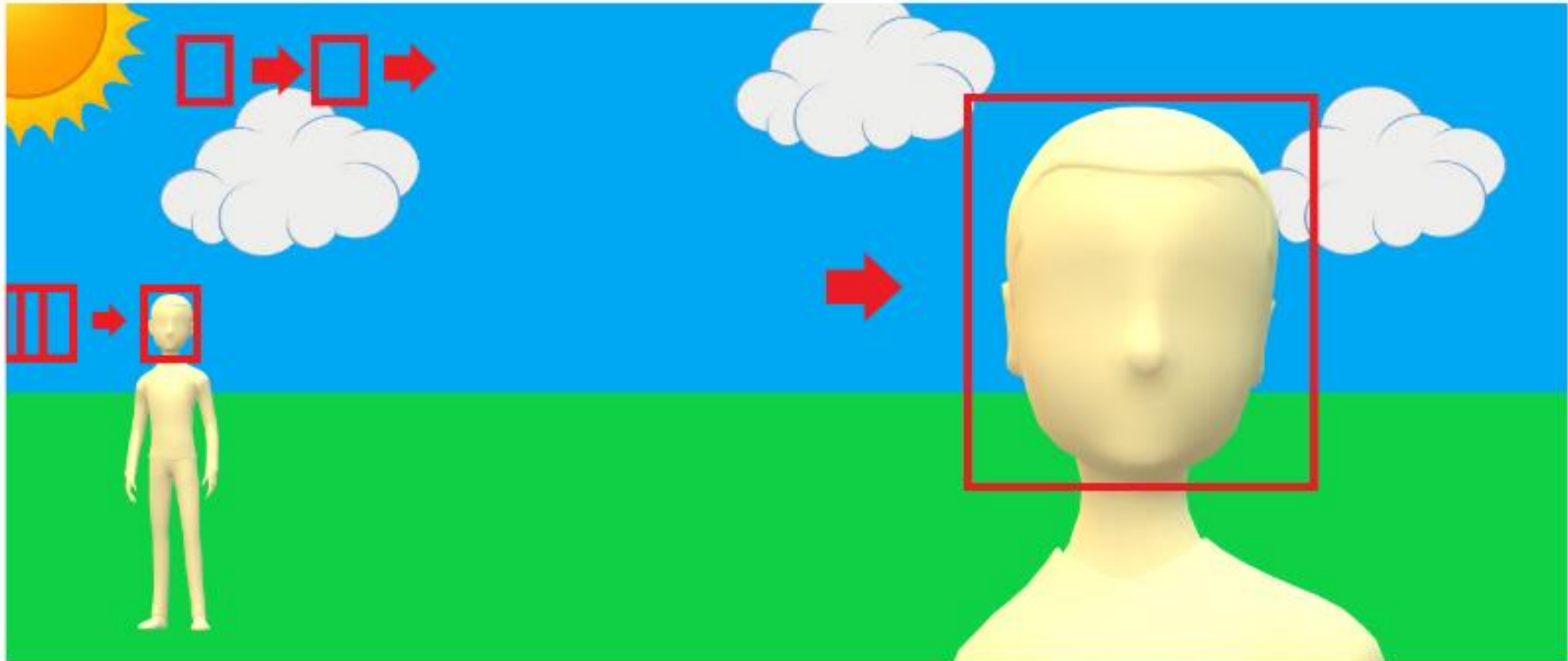
Detecting faces with scikit-image

```
# Import the classifier class
from skimage.feature import Cascade

# Load the trained file from the module root.
trained_file = data.lbp_frontal_face_cascade_filename()

# Initialize the detector cascade.
detector = Cascade(trained_file)
```

Detecting faces

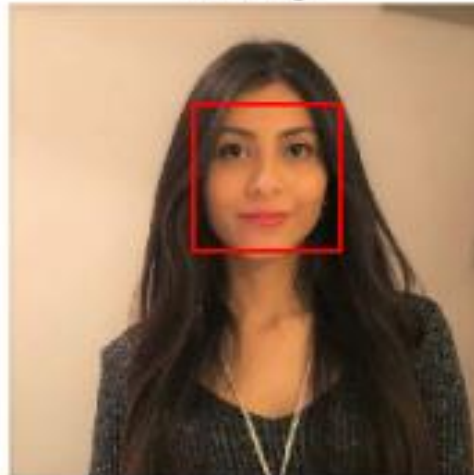


Detected faces

```
print(detected)  
  
# Show image with detected face marked  
show_detected_face(image, detected)
```

```
Detected face: [{ 'r': 115, 'c': 210, 'width': 167, 'height': 167}]
```

Face image



Show detected faces



```
def show_detected_face(result, detected, title="Face image"):
    plt.imshow(result)
    img_desc = plt.gca()
    plt.set_cmap('gray')
    plt.title(title)
    plt.axis('off')

    for patch in detected:
        img_desc.add_patch(
            patches.Rectangle(
                (patch['c'], patch['r']),
                patch['width'],
                patch['height'],
                fill=False, color='r', linewidth=2)
        )
    plt.show()
```













練習時間

14.Face detection.ipynb



 jupyter 14.Face detection Last Checkpoint: 3 hours ago (autosaved)  Logout

File Edit View Insert Cell Kernel Widgets Help Trusted | Python 3 C


       Run    Markdown 

練習

Is someone there?

In this exercise, you will check whether or not there is a person present in an image taken at night.

Landscape of starry night with a young man in the left bottom corner Image preloaded as `night_image`. The `CascadeOfClassifiers` class from `feature` module has been already imported. The same is true for the `show_detected_face()` function, that is used to display the face marked in the image and crop so it can be shown separately.



練習時間

14.Face detection.ipynb



jupyter 14.Face detection Last Checkpoint: 3 hours ago (autosaved)



Logout

File Edit View Insert Cell Kernel Widgets Help

Trusted

Python 3 C



練習

Multiple faces In this exercise, you will detect multiple faces in an image and show them individually. Think of this as a way to create a dataset of your own friends' faces!

A group of 7 friends Image preloaded as `friends_image`. The `Cascade of classifiers` class from `feature` module has already been imported, as well as the `show_detected_face()` function which is used to display the face marked in the image and crop it so it can be shown separately.



問卷

<http://www.pcschoolonline.com.tw>

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課程檔案下載：

學員的「上課教材」，下載檔案為壓縮檔 ([解壓縮操作步驟](#))。
如無法觀看上課教材，請安裝 [PDF閱讀軟體](#)。

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取消劃位

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課程檔案下載

自107年1月1日起，課程錄影檔由180天改為365天(含)內無限次觀看 (上課隔日18:00起)。

問卷

上課日期	課程名稱	課程節次	教材下載		
2017/12/27 2000 ~ 2200	線上真人-ZBrush 3D動畫造型設計	18	上課教材	錄影	課堂問卷
2017/12/20 2000 ~ 2200	線上真人-ZBrush 3D動畫造型設計	17	上課教材	錄影檔	
2017/12/18 2000 ~ 2200	線上真人-ZBrush 3D動畫造型設計	16	上課教材	錄影檔	



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