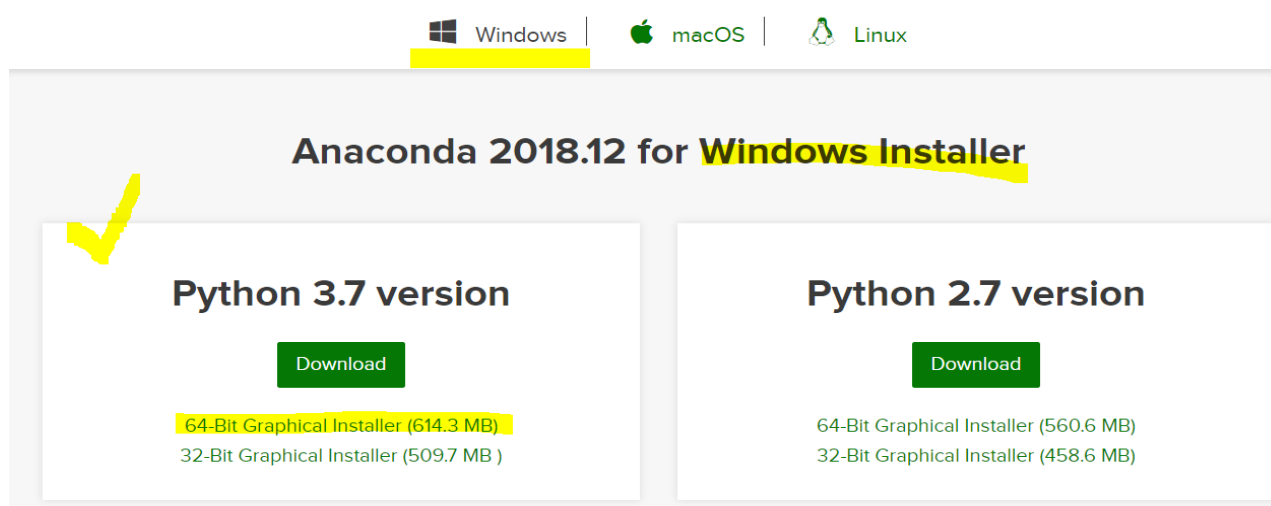


AI DL 讀書會

手把手安裝環境

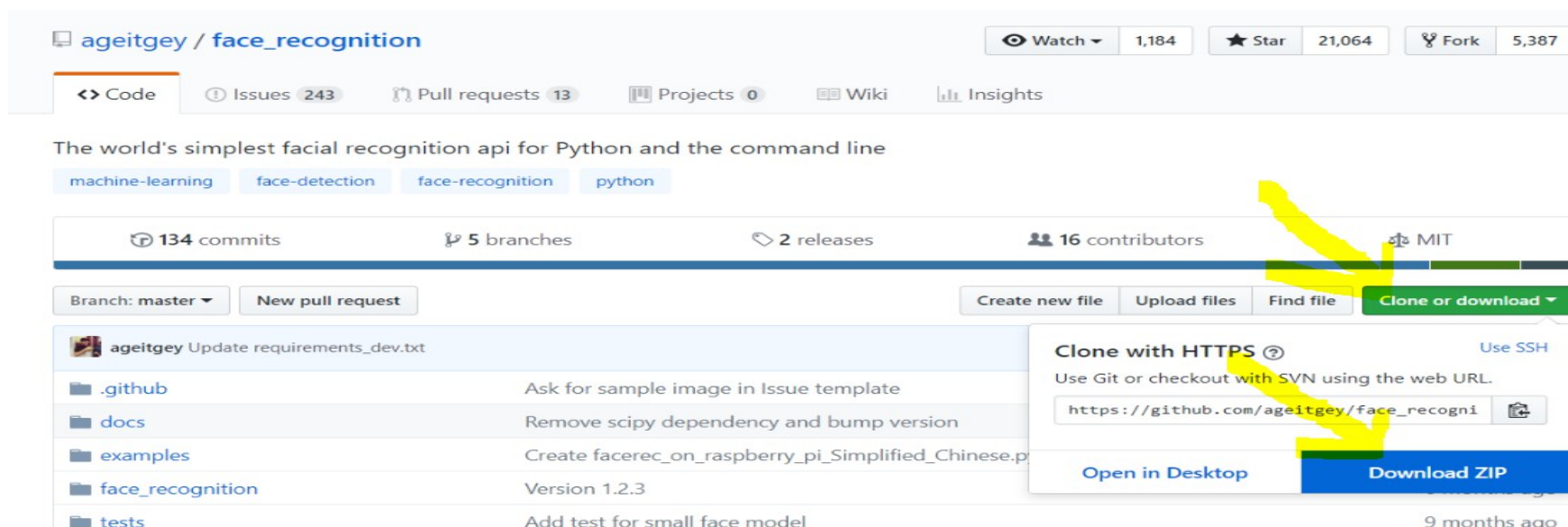
安裝 anaconda

- 請先下載安裝程式
 - <https://www.anaconda.com/distribution/>
 - 請安裝在 C:\anaconda3\ or D:\anaconda3\ (容易找)



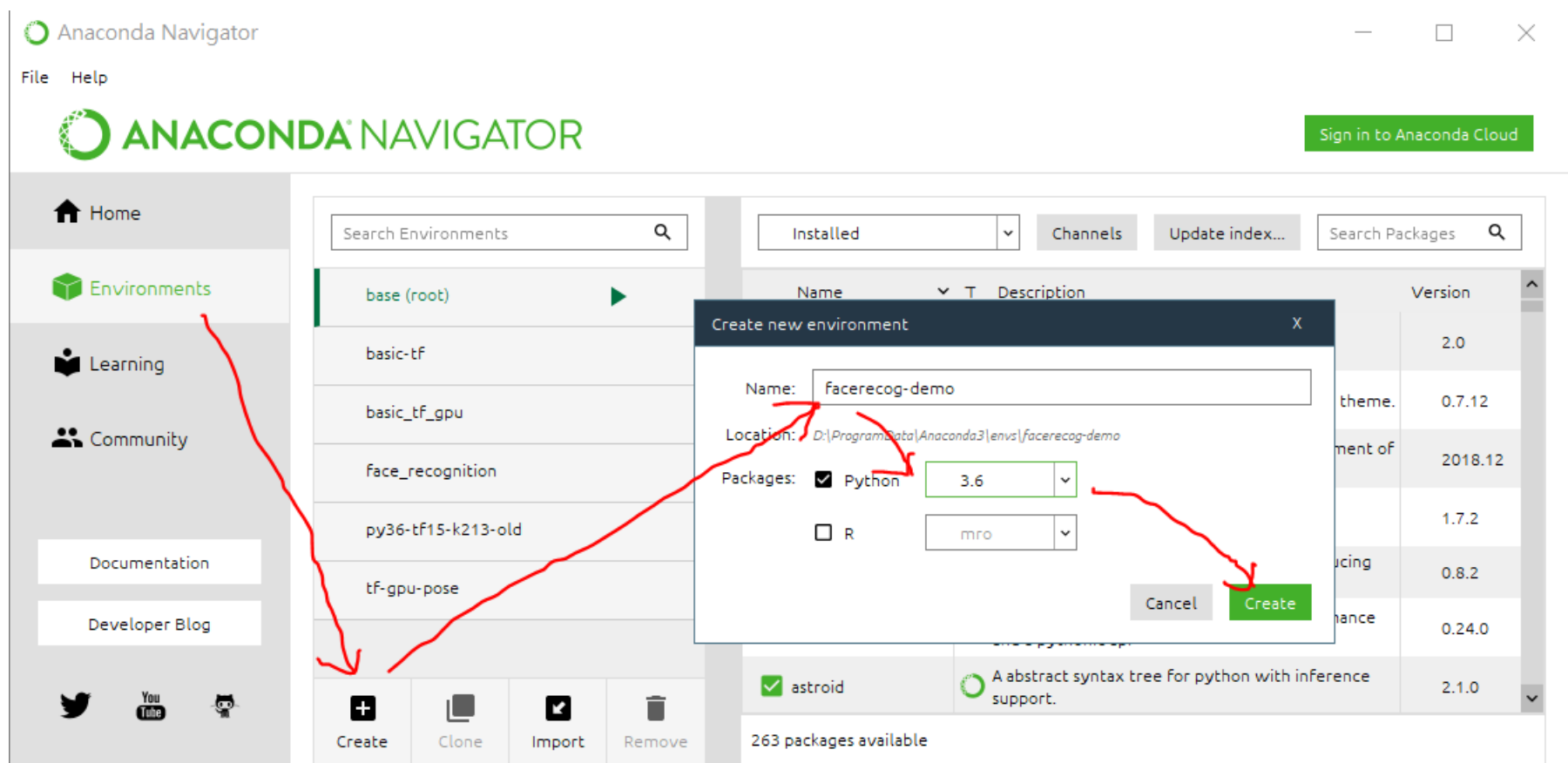
anaconda 建立虛擬環境

- 用conda建立及管理python虛擬環境
 - 照著網頁內容嘗試建立（測試的）虛擬環境
- 建立臉部辨識模組環境（下載先放著）
 - https://github.com/ageitgey/face_recognition



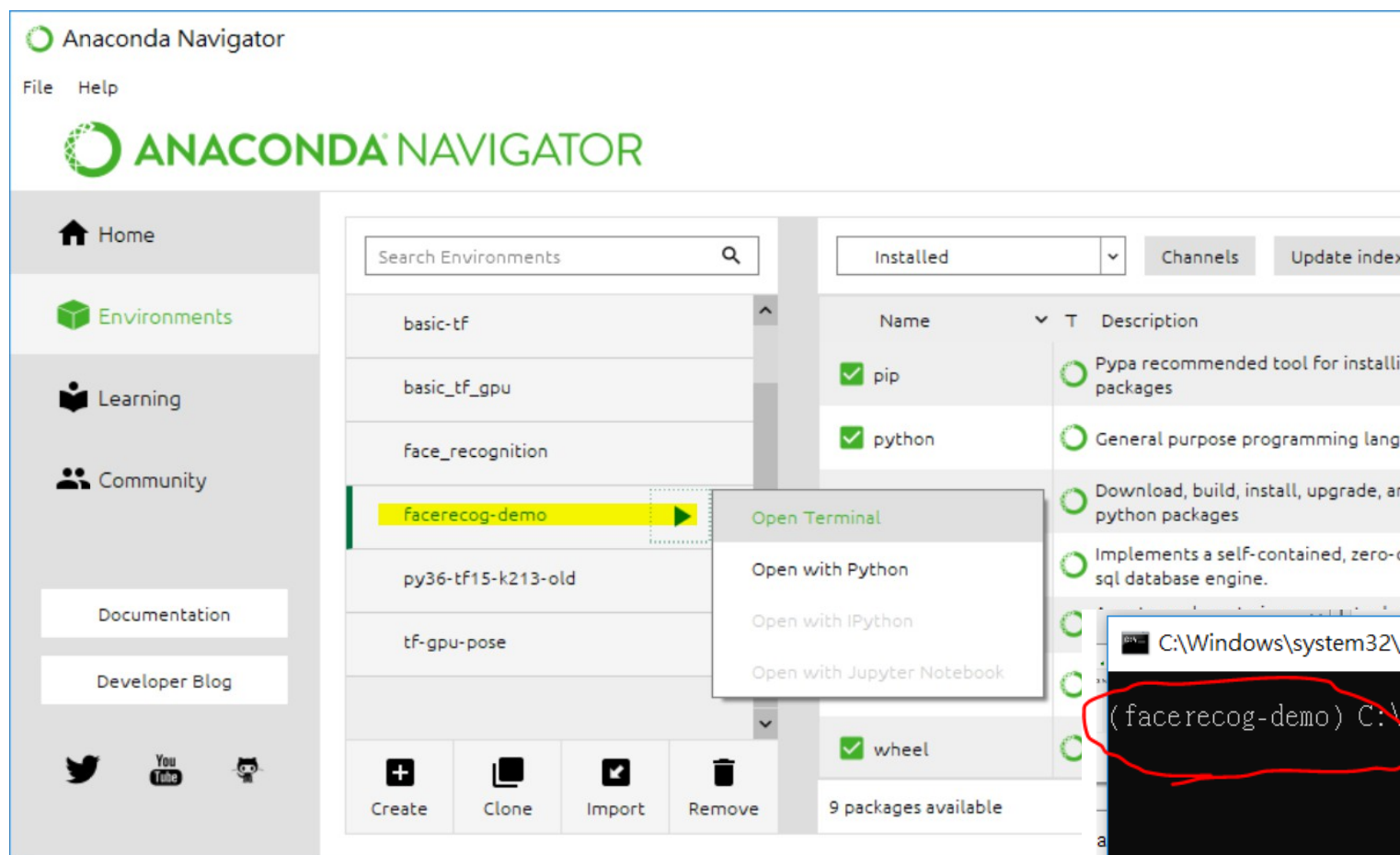
建立臉部辨識模組環境

- Anaconda 建立環境 -name facerecog-demo
- 確定環境已建立 (...\envs\facerecog-demo)
(例如 D:\ProgramData\Anaconda3\envs\facerecog-demo)



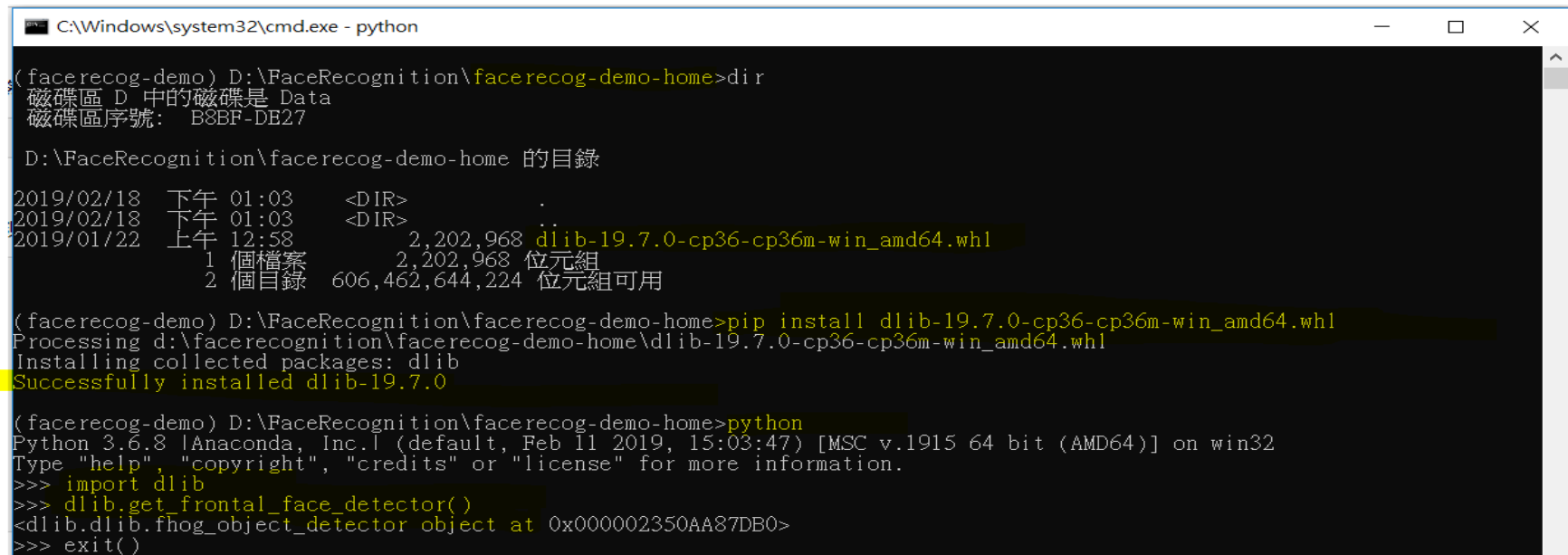
建立臉部辨識模組環境

- Anaconda 切換到 facerecog-demo 環境
- 執行 open Terminal ，確定執行環境正確



建立臉部辨識模組環境

- 找個地方建一個資料夾 facerecog-demo-home (要放開發程式)
- Requirements
 - Python 3.3+ or Python 2.7 (我們已選 python 3.6)
 - Dlib
 - <https://www.cnblogs.com/AdaminXie/p/9032224.html>
 - 直接跳到 2.2 Dlib 的安裝



```
C:\Windows\system32\cmd.exe - python
(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>dir
磁碟區 D 中的磁碟是 Data
磁碟區序號: B8BF-DE27

D:\FaceRecognition\facerecog-demo-home 的目錄
2019/02/18 下午 01:03 <DIR> .
2019/02/18 下午 01:03 <DIR> ..
2019/01/22 上午 12:58 2,202,968 dlib-19.7.0-cp36-cp36m-win_amd64.whl
1 個檔案 2,202,968 位元組
2 個目錄 606,462,644,224 位元組可用

(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>pip install dlib-19.7.0-cp36-cp36m-win_amd64.whl
Processing d:\facerecognition\facerecog-demo-home\dlib-19.7.0-cp36-cp36m-win_amd64.whl
Installing collected packages: dlib
Successfully installed dlib-19.7.0

(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>python
Python 3.6.8 [Anaconda, Inc.] (default, Feb 11 2019, 15:03:47) [MSC v.1915 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import dlib
>>> dlib.get_frontal_face_detector()
<dlib.dlib.fhog_object_detector object at 0x000002350AA87DB0>
>>> exit()
```

建立臉部辨識模組環境

- Pip install face_recognition (注意不是 pip3)

```
C:\Windows\system32\cmd.exe - pip install face_recognition

(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>pip3 install face_recognition
'pip3' 不是内部或外部命令、可執行的程式或批次檔。

(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>pip install face_recognition
Collecting face_recognition
  Using cached https://files.pythonhosted.org/packages/3f/ed/ad9a28042f373d4633fc8b49109b623597d6f193d3bbbef7780a5ee8eef2/face_recognition-1.2.3-py2.py3-none-any.whl
Requirement already satisfied: dlib>=19.7 in d:\programdata\anaconda3\envs\facerecog-demo\lib\site-packages (from face_recognition) (19.7.0)
Collecting Click>=6.0 (from face_recognition)
  Downloading https://files.pythonhosted.org/packages/fa/37/45185cb5abbc30d7257104c434fe0b07e5a195a6847506c074527aa599ec/Click-7.0-py2.py3-none-any.whl (81kB)
    100% |#####| 81kB 528kB/s
Collecting numpy (from face_recognition)
  Using cached https://files.pythonhosted.org/packages/b5/11/82916e23836a37c0d76babf74a7ca6f7b4fedd0814eaa166aacc2318b87c/numpy-1.16.1-cp36-cp36m-win_amd64.whl
Collecting Pillow (from face_recognition)
  Using cached https://files.pythonhosted.org/packages/ec/ca/7af5b6628ecf770645f8cc3c9da3c2bb5c5ffc7384a9ff0666fdb818b4d5/Pillow-5.4.1-cp36-cp36m-win_amd64.whl
Collecting face-recognition-models>=0.3.0 (from face_recognition)
```

裝完測試一下(python → import face_recognition) , 會有問題(接下頁)

```
C:\Windows\system32\cmd.exe - conda install numpy - python

(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>python
Python 3.6.8 |Anaconda, Inc.| (default, Feb 11 2019, 15:03:47) [MSC v.1915 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import face_recognition
>>>
```

Numpy issue (版本問題)

C:\Windows\system32\cmd.exe - python

```
(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>python
Python 3.6.8 |Anaconda, Inc.| (default, Feb 11 2019, 15:03:47) [MSC v.1915 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
```

```
>>> import face_recognition
```

```
Traceback (most recent call last):
```

```
File "D:\ProgramData\Anaconda3\envs\facerecog-demo\lib\site-packages\face_recognition\__init__.py", line 1, in <module>
```

```
    from . import multiarray
```

```
File "D:\ProgramData\Anaconda3\envs\facerecog-demo\lib\site-packages\face_recognition\__init__.py", line 2, in <module>
```

```
    from . import overrides
```

```
File "D:\ProgramData\Anaconda3\envs\facerecog-demo\lib\site-packages\face_recognition\__init__.py", line 3, in <module>
```

```
    from numpy.core.multiarray_umath import *
```

```
ImportError: DLL load failed: 找不到指定的模組。
```

```
During handling of the above exception, another exception occurred:
```

C:\Windows\system32\cmd.exe - python

```
    raise ImportError(msg)
```

```
ImportError:
```

```
IMPORTANT: PLEASE READ THIS FOR ADVICE ON HOW TO SOLVE THIS ISSUE!
```

```
Importing the multiarray numpy extension module failed. Most
```

```
likely you are trying to import a failed build of numpy.
```

```
Here is how to proceed:
```

- If you're working with a numpy git repository, try `git clean -xdf` (removes all files not under version control) and rebuild numpy.

- If you are simply trying to use the numpy version that you have installed: your installation is broken - please reinstall numpy.

C:\Windows\system32\cmd.exe - conda install numpy

```
(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>conda install numpy
```

```
Collecting package metadata: done
```

```
Solving environment: done
```

```
==> WARNING: A newer version of conda exists. <==
```

```
current version: 4.6.2
```

```
latest version: 4.7.0
```

C:\Windows\system32\cmd.exe - conda install numpy - python

```
(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>python
```

```
Python 3.6.8 |Anaconda, Inc.| (default, Feb 11 2019, 15:03:47) [MSC v.1915 64 bit (AMD64)] on win32
```

```
Type "help", "copyright", "credits" or "license" for more information.
```

```
>>> import face_recognition
```

```
>>>
```


建立臉部辨識模組環境

- 將下載的 github 檔案解壓縮到 facerecog-demo-home 下
- 試一下 face_detection ./examples
- (注意，這些解壓縮檔案其實用不到，剛剛流程中已經安裝了需要的模組了，但就放著吧，之後要研究用的)

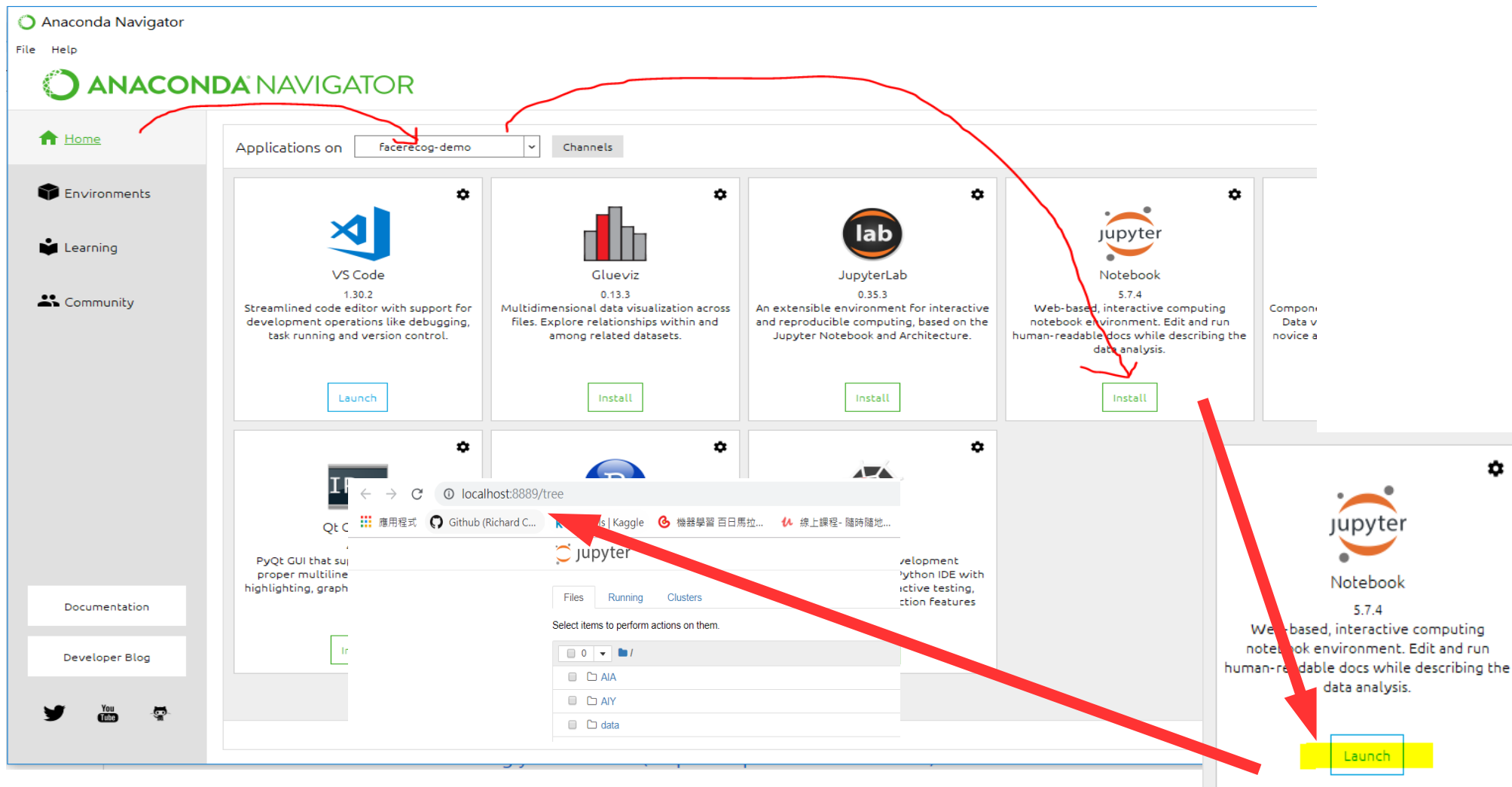
```
C:\Windows\system32\cmd.exe - conda install numpy

(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>face_detection ./examples
./examples\alex-lacamoire.png,134,353,313,174
./examples\bidon.jpg,233,749,542,439
./examples\lin-manuel-miranda.png,164,577,474,267
./examples\obama-1080p.jpg,136,1140,394,882
./examples\obama-240p.jpg,29,261,101,189
./examples\obama-480p.jpg,65,507,189,383
./examples\obama-720p.jpg,94,751,273,572
./examples\obama.jpg,136,624,394,366
./examples\obama2.jpg,302,474,611,164
./examples\obama_small.jpg,65,215,169,112
./examples\two_people.jpg,62,394,211,244
./examples\two_people.jpg,95,941,244,792

(facerecog-demo) D:\FaceRecognition\facerecog-demo-home>
```

在這個環境下 安裝 jupyter

- 修改起始路徑 <https://www.zhihu.com/question/31600197>
- 完成後執行

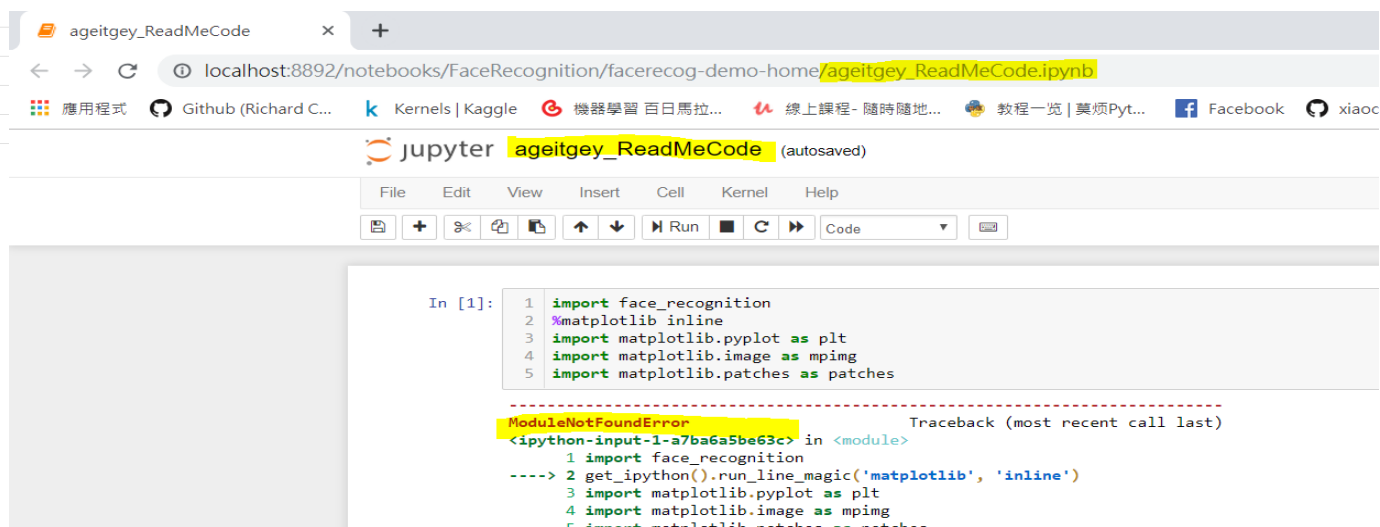
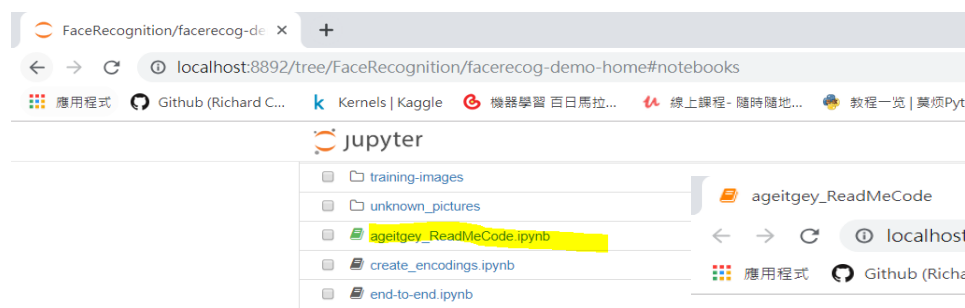


新增程式，補齊套件

- 下載 Richard 的 code

<https://github.com/richardchiujang/facerecognition>

- 解壓縮放到 facerecog-demo-home 路徑下
相同檔名跳過、忽略皆可
- 執行 ageitgey_ReadMeCode.ipynb

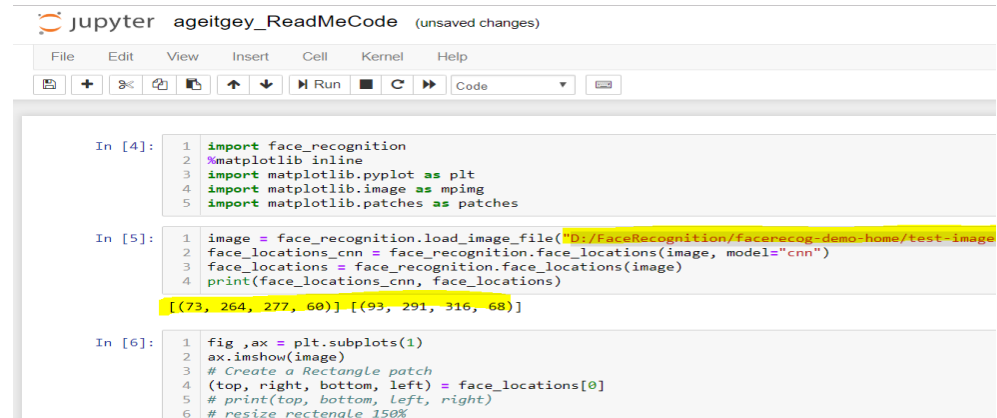


補齊套件

- 執行 ageitgey_ReadMeCode.ipynb

```
D:\ProgramData\Anaconda3\envs\facerecog-demo\lib\site-packages\IPython\core\pylab1
ct)
274     """
275
--> 276     import matplotlib
277
278     if gui and gui != 'auto':
ModuleNotFoundError: No module named 'matplotlib'
```

- 錯誤代表找不到 matplotlib 套件，我們還沒裝。
回終端機繼續安裝
- conda install matplotlib
- 完成後再次執行
- (可能！要改檔案路徑)



The screenshot shows a Jupyter Notebook titled 'ageitgey_ReadMeCode' with unsaved changes. The interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Help) and a toolbar with icons for file operations, running, and saving. The notebook contains three code cells:

```
In [4]: 1 import face_recognition
2 %matplotlib inline
3 import matplotlib.pyplot as plt
4 import matplotlib.image as mpimg
5 import matplotlib.patches as patches

In [5]: 1 image = face_recognition.load_image_file("D:/FaceRecognition/facerecog-demo-home/test-image.jpg")
2 face_locations_cnn = face_recognition.face_locations(image, model="cnn")
3 face_locations = face_recognition.face_locations(image)
4 print(face_locations_cnn, face_locations)

[(73, 264, 277, 60)] [(93, 291, 316, 68)]

In [6]: 1 fig, ax = plt.subplots(1)
2 ax.imshow(image)
3 # Create a Rectangle patch
4 (top, right, bottom, left) = face_locations[0]
5 # print(top, bottom, left, right)
6 # resize rectangle 150%
```

附註

- `conda install xxx(package_name)`
`pip install xxx(package_name)`
- 在 anaconda 環境中，為了減少版本衝突，在 `conda install` 正常運作的狀況下，建議都使用 `conda install`。也就是說某些時候 `conda install` 不管用時，再去試試 `pip install` 比較不會出槌
- 像是 `dlib` 用 `conda install` 就搞不定，為了簡化問題，直接下載 `dlib-xxx.whl` 來安裝（如前所述）

附註 2

- OPENCV 裝法
 - `pip install opencv-python`
- 遇到 `ModuleNotFoundError: No module named 'sklearn'`
 - `conda install -c anaconda scikit-learn`
- 遇到 `ModuleNotFoundError: No module named 'pandas'`
 - `conda install pandas`

作業

- 請執行並研究其他的 richard code
 - 有學習請記下來分享
 - 有問題請記下來提問
- 如果順利，請做到每一隻程式 (ipynb) 都可以執行，
並建立自己的資料與訓練結果
- 請研讀 Face Recognition 人脸识别
- 請研讀 用深度学习识别人脸

附贈

- 機器學習 百日馬拉松
業界專家陪你升級打怪 講義 (更新至 D48 集)

The screenshot shows the GitHub interface for the repository 'richardchiujang / ML100-Days'. At the top, there are buttons for 'Watch', 'Star', and 'Fork', each with a count of 0. Below this is a navigation bar with links for 'Code', 'Issues', 'Pull requests', 'Projects', 'Wiki', 'Insights', and 'Settings'. The main content area shows the file tree for the 'materials' directory. A commit by 'richardchiujang' is highlighted, showing a list of files added to the 'course materials' directory, all committed 22 days ago.

richardchiujang / ML100-Days

Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

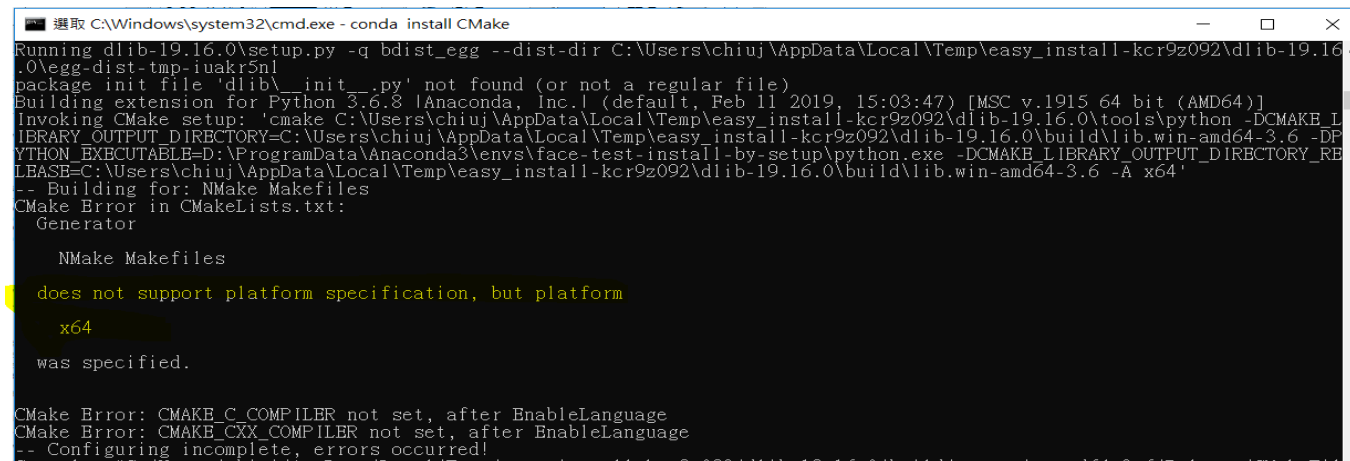
Branch: master ML100-Days / materials / Create new file Upload files Find file History

richardchiujang add materials ... Latest commit 84be250 a day ago

..		
D001-010_attachment.txt	course materials	22 days ago
D001_資料介紹與評估指標.pdf	course materials	22 days ago
D002_EDA-1讀取資料 EDA Data summary.pdf	course materials	22 days ago
D003_3-1如何新建一個 dataframe 3-2 如何讀取其他資料.pdf	course materials	22 days ago
D004_EDA 欄位的資料類型介紹及處理.pdf	course materials	22 days ago

後記

- 為什麼 github 上的安裝程序不能用
 - 原方式為
 - `pip install Cmake`
 - 下載 github 包，執行 `python setup.py install`
 - 程式會自動重新 CMake build 相關 dlib 檔案
 - 但是 C++ 的 dlib 不支援 windows 平台
 - 所以用上述方法安裝



```
選取 C:\Windows\system32\cmd.exe - conda install CMake
Running dlib-19.16.0\setup.py -q bdist_egg --dist-dir C:\Users\chiuj\AppData\Local\Temp\easy_install-kcr9z092\dlib-19.16.0\egg-dist-tmp-iuakr5nl
package init file 'dlib\__init__.py' not found (or not a regular file)
Building extension for Python 3.6.8 |Anaconda, Inc.| (default, Feb 11 2019, 15:03:47) [MSC v.1915 64 bit (AMD64)]
Invoking CMake setup: 'cmake C:\Users\chiuj\AppData\Local\Temp\easy_install-kcr9z092\dlib-19.16.0\tools\python -DCMAKE_LIBRARY_OUTPUT_DIRECTORY=C:\Users\chiuj\AppData\Local\Temp\easy_install-kcr9z092\dlib-19.16.0\build\lib.win-amd64-3.6 -DPYTHON_EXECUTABLE=D:\ProgramData\Anaconda3\envs\face-test-install-by-setup\python.exe -DCMAKE_LIBRARY_OUTPUT_DIRECTORY_RELEASE=C:\Users\chiuj\AppData\Local\Temp\easy_install-kcr9z092\dlib-19.16.0\build\lib.win-amd64-3.6 -A x64'
-- Building for: NMake Makefiles
CMake Error in CMakeLists.txt:
  Generator
    NMake Makefiles
    does not support platform specification, but platform
      x64
    was specified.

CMake Error: CMAKE_C_COMPILER not set, after EnableLanguage
CMake Error: CMAKE_CXX_COMPILER not set, after EnableLanguage
-- Configuring incomplete, errors occurred!
```