

CNN練習

Convolutional neural network

講師:隋建德

HarryPoter Classification

蒐集Dataset

- 下載圖片
 - 使用google 搜尋
 - 人工慢慢下載
 - 有沒有tool?
- **google-images-download**

google-images-download

- <https://github.com/hardikvasa/google-images-download>
- 第三方開發
- Windows linux Mac
- 提供許多參數可設定
- 直接使用chrome下載圖片
- 需先安裝
 - Chrome
 - Chrome driver
 - <https://chromedriver.chromium.org/downloads>
 - 下載與chrome相對應版本的

Chrome driver

ChromeDriver - WebDriver for Chrome

Downloads

Current Releases

- If you are using Chrome version 79, please download [ChromeDriver 79.0.3945.36](#)
- If you are using Chrome version 78, please download [ChromeDriver 78.0.3904.105](#)
- If you are using Chrome version 77, please download [ChromeDriver 77.0.3865.40](#)
- For older version of Chrome, please see below for the version of ChromeDriver that supports it.

If you are using Chrome from Dev or Canary channel, please following instructions on the [ChromeDriver Canary](#) page.

For more information on selecting the right version of ChromeDriver, please see the [Version Selection](#) page.

ChromeDriver 79.0.3945.36

Supports Chrome version 79

Includes the following change over version 79.0.3945.16:

- Fixed incorrect calculation of element coordinates

For more details, please see the [release notes](#).

ChromeDriver 79.0.3945.16

CHROMEDRIVER

CAPABILITIES & CHROME OPTIONS

CHROME EXTENSIONS

CHROMEDRIVER CANARY

CONTRIBUTING

▼ **DOWNLOADS**

VERSION SELECTION

▼ **GETTING STARTED**

ANDROID

CHROME OS

▼ **LOGGING**

PERFORMANCE LOG

MOBILE EMULATION

▼ **NEED HELP?**

CHROME DOESN'T START OR CRASHES IMMEDIATELY

CHROMEDRIVER CRASHES

CLICKING ISSUES

DEVTOOLS WINDOW KEEPS CLOSING

OPERATION NOT SUPPORTED WHEN USING REMOTE DEBUGGING

SECURITY CONSIDERATIONS

下載並且解壓縮

Chrome driver

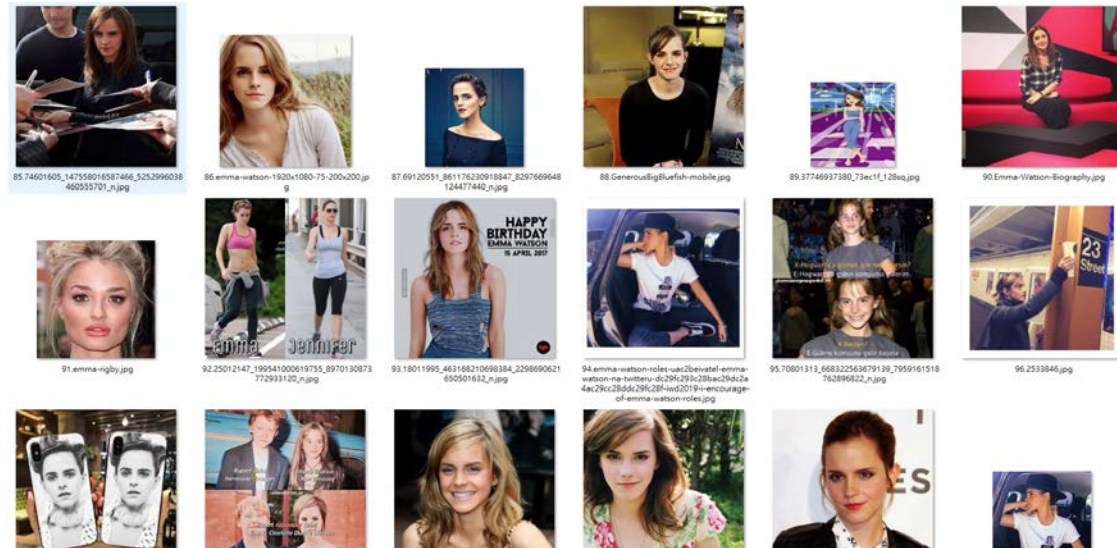
- 在桌面建立一個資料夾 collect_data
- 將 chromedriver.exe 放入該資料夾
- 在collect_data資料夾中開啟 命令提示字元
 - 或開啟命令提示字元後進入該資料夾

google-images-download

- pip install google_images_download
 - 安裝lib
- 參數說明
 - -f : 指定圖片格式 jpg,png....
 - --aspect_ratio : 指定圖片比例 square....
 - -k : 搜尋的關鍵字
 - -l : 下載數
 - --chromedriver : chromedriver位置

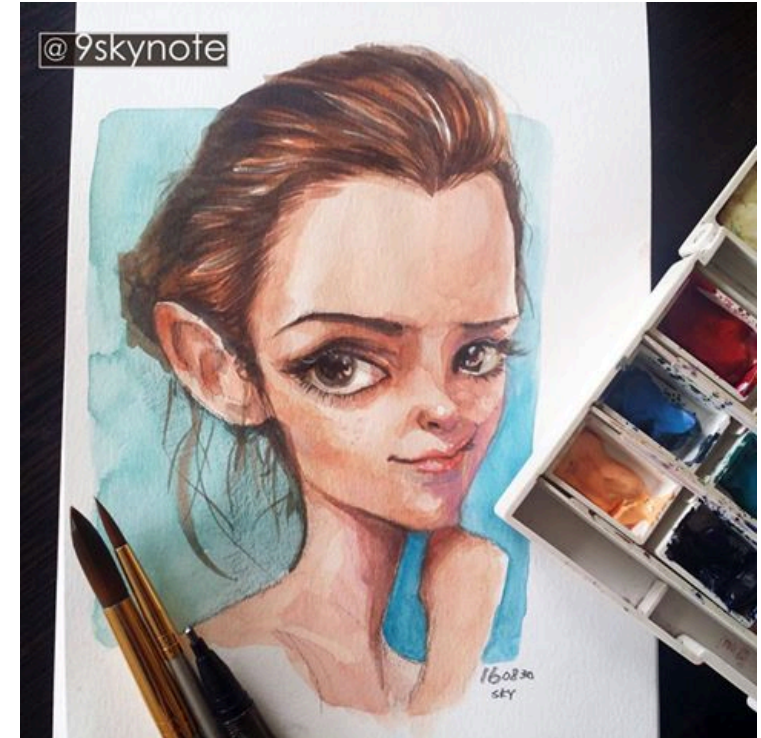
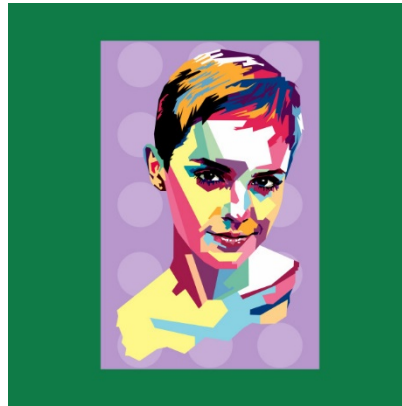
google-images-download 範例

- 下載艾瑪華森照片
 - googleimagesdownload -f "jpg" --aspect_ratio square -k "Emma Charlotte Duerre" -l 300 --chromedriver "./chromedriver.exe"
 - googleimagesdownload -f "jpg" --aspect_ratio square -k "艾瑪華森" -l 300 --chromedriver "./chromedriver.exe"



清理資料

- 將一些非正常照片清除
 - 非該類別
 - 非單獨照
 - 不清晰
 - PS加工過
 - Cosplay
 - 等等



資料量不夠?

- Data Augmentation
- Augmentation.ipynb
 - 裡面內涵keras 的 augmentation tool
 - 將圖片旋轉、位移等等，並存在資料夾內



使用Cv2讀取dataset

- Cv2
 - 其中含有許多對於圖片的操作
- `img_bgr = cv2.imread(image_path) ##讀取圖片`
- `img_rgb = cv2.cvtColor(img_bgr, cv2.COLOR_BGR2RGB) ##轉圖樣`
 - `COLOR_BGR2RGB` : 由於CV2讀出來是BGR，因此轉成常見的RGB
- `res=cv2.resize(img_rgb,(300,300),interpolation=cv2.INTER_CUBIC) ##變換大小`
 - 訓練前先將圖片大小固定成300*300
 - Interpolation: 變換大小的方式

label

- test_people
 - ["Daniel Jacob Radcliffe", "Emma Charlotte Duerre", "Rupert Alexander Lloyd Grint"]
 - 分別對應到0,1,2



目標1

- 使用哈利波特Dataset
 - Test acc >80

目標2

- 蒐集自己的dataset

下載程式碼

- <https://reurl.cc/zy7zgN>