

# 影像處理與機器視覺 檢測技術

**主要教材：**陳峻庭 著，Towards Tensorflow 2.0 無痛打照AI模型，博碩

**參考資料：**

- 林大貴 著，TensorFlow+Keras 深度學習人工智慧實務應用，博碩
- 皇士嘉 等著，輕鬆學會Google TensorFlow 2.0 人工智慧深度學習實作開發，博碩

## 計分方式

1

平時成績佔：10 %、期中考成績佔：30 %、期末考成績佔：30 %、其他項目佔：30 % (作業，程式，口試報告，筆試)

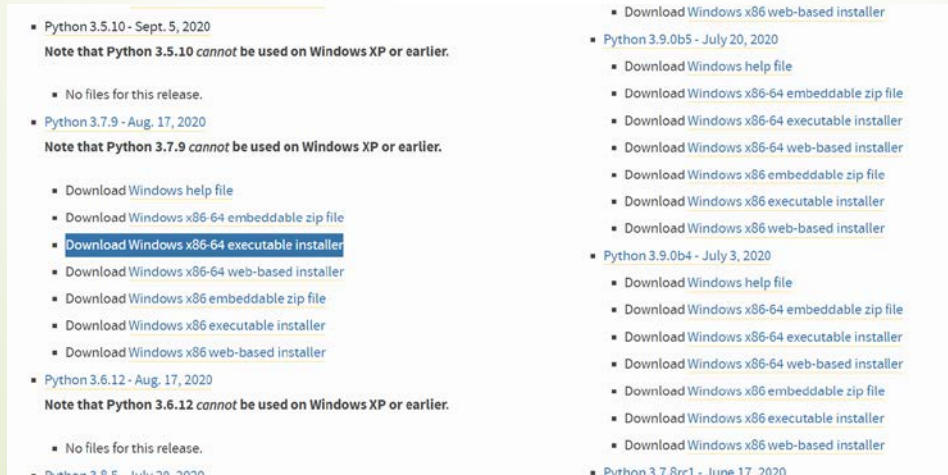
(其他項目含作業、筆記、專題報告。曠課一次扣總成績2分，晚到或早退一次扣總成績1分，曠課6次以上者乘以2倍。)

# 環境安裝

- Python 安裝(版本 3.7 )
- Visual Studio Code安裝
- Python 擴充套件安裝
  - Jupyter Notebook安裝
  - Numpy 安裝
  - Pandas 安裝
  - Matplotlib安裝
  - OpenCv安裝
  - TensorFlow 安裝(2.0 版本)

# Python 安裝(I)

- ➡ 下載3.7.9 安裝檔(不是最新版3.8)  
(<https://www.python.org/downloads/windows/>)  
Download [Windows x86-64 executable installer](#)S

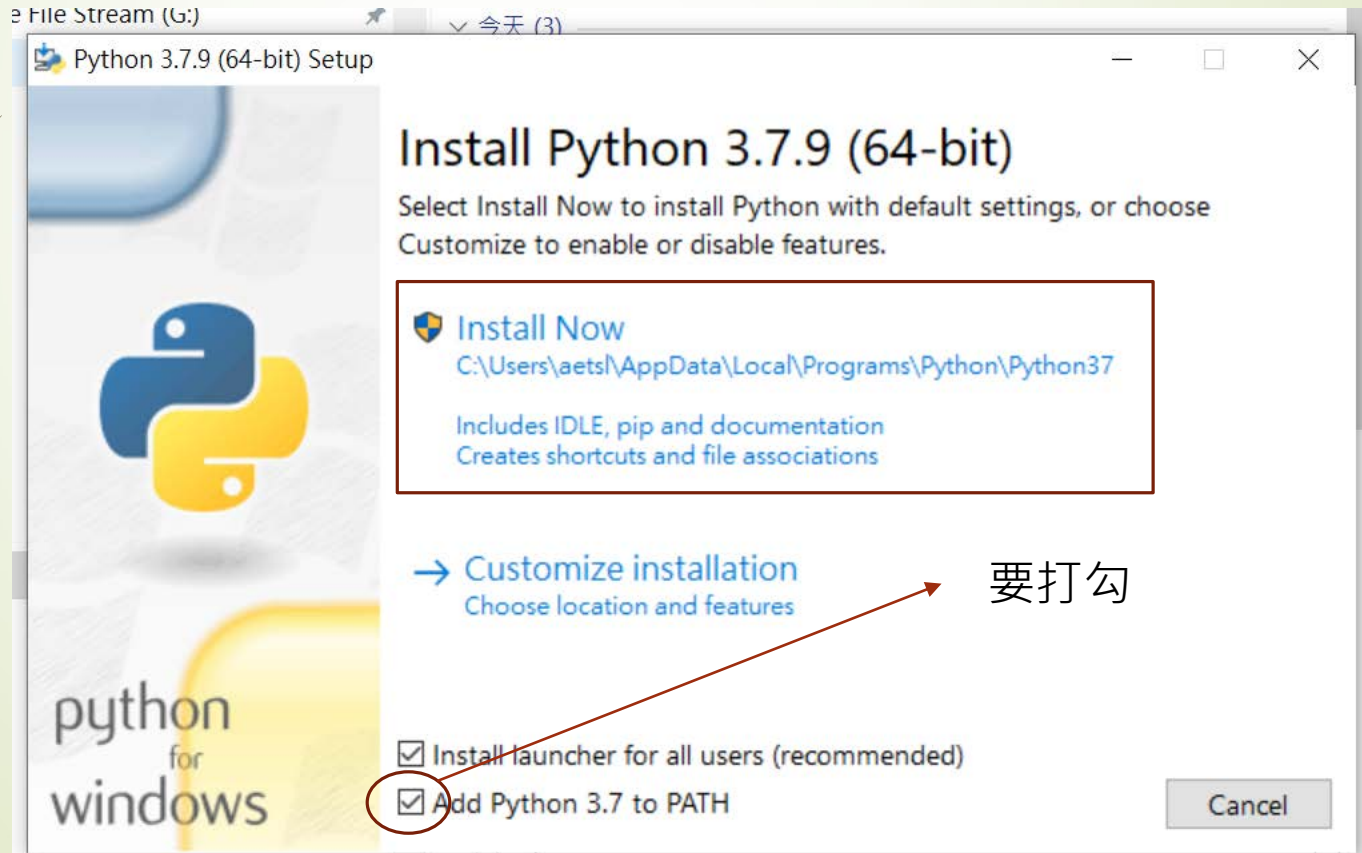


The screenshot displays the 'Downloads' section of the Python.org website, specifically for Windows. It lists several Python versions with their release dates and available download options. The 'Python 3.7.9' section is highlighted, showing options for help files, embeddable zip files, and executable installers. The 'Python 3.6.12' section is also visible, noting that it cannot be used on Windows XP or earlier.

- Python 3.5.10 - Sept. 5, 2020  
Note that Python 3.5.10 cannot be used on Windows XP or earlier.
  - No files for this release.
- Python 3.7.9 - Aug. 17, 2020  
Note that Python 3.7.9 cannot be used on Windows XP or earlier.
  - Download Windows help file
  - Download Windows x86-64 embeddable zip file
  - Download Windows x86-64 executable installer
  - Download Windows x86-64 web-based installer
  - Download Windows x86 embeddable zip file
  - Download Windows x86 executable installer
  - Download Windows x86 web-based installer
- Python 3.6.12 - Aug. 17, 2020  
Note that Python 3.6.12 cannot be used on Windows XP or earlier.
  - No files for this release.
- Python 3.9.0b5 - July 20, 2020
  - Download Windows x86 web-based installer
- Python 3.9.0b5 - July 20, 2020
  - Download Windows help file
  - Download Windows x86-64 embeddable zip file
  - Download Windows x86-64 executable installer
  - Download Windows x86-64 web-based installer
  - Download Windows x86 embeddable zip file
  - Download Windows x86 executable installer
  - Download Windows x86 web-based installer
- Python 3.9.0b4 - July 3, 2020
  - Download Windows help file
  - Download Windows x86-64 embeddable zip file
  - Download Windows x86-64 executable installer
  - Download Windows x86-64 web-based installer
  - Download Windows x86 embeddable zip file
  - Download Windows x86 executable installer
  - Download Windows x86 web-based installer
- Python 3.7.8rc1 - June 17, 2020

# Python 安裝(II)

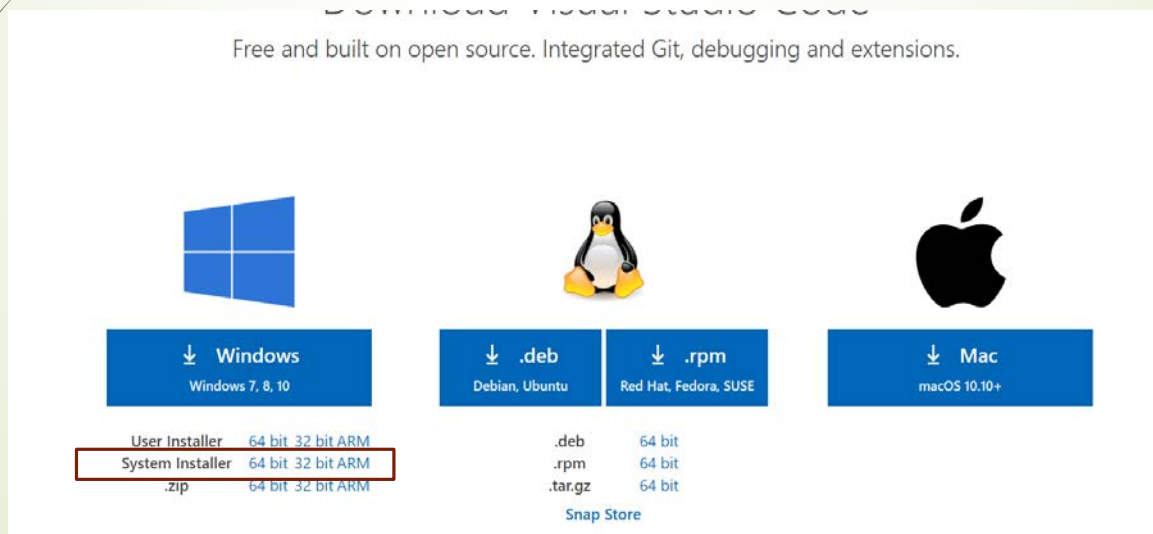
## ➡ 安裝Python



# Visual studio Code 安裝(I)

- 下載Visual Studio Code 安裝檔

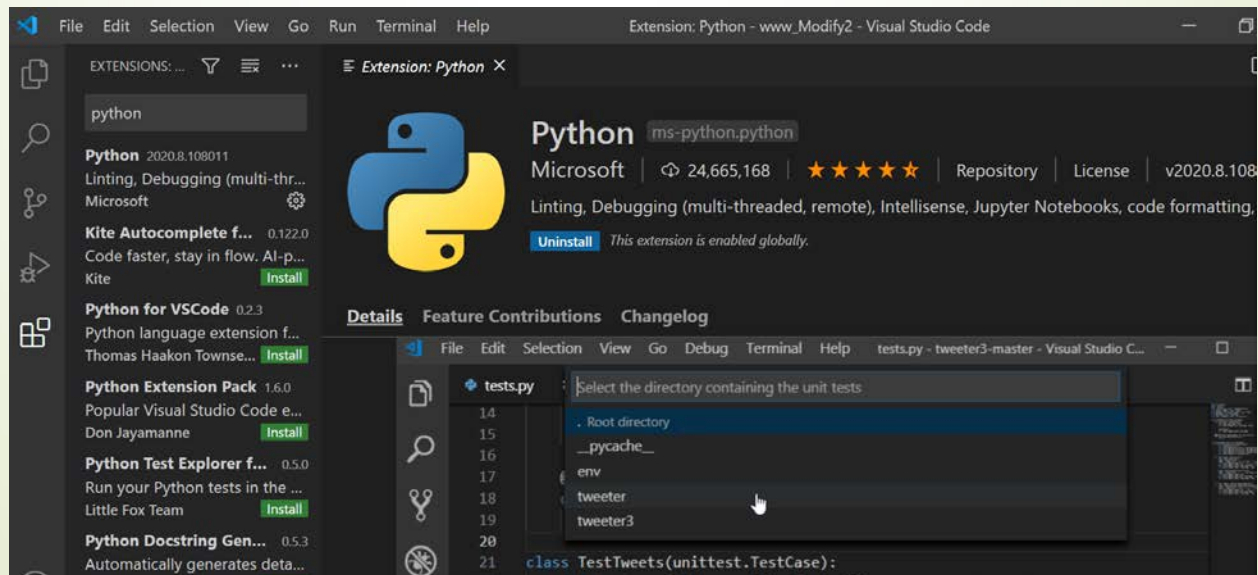
<https://code.visualstudio.com/download>



# Visual studio Code 安裝(II)

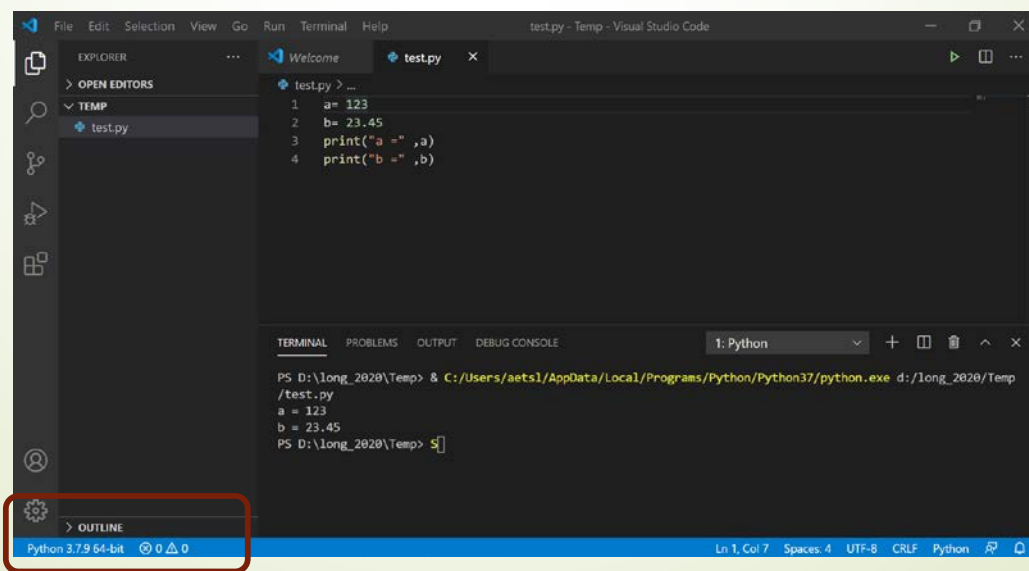
➡ 加入外掛程式Python (Microsoft)

Extensions->Type "Python"



# Visual studio Code 安裝(III)

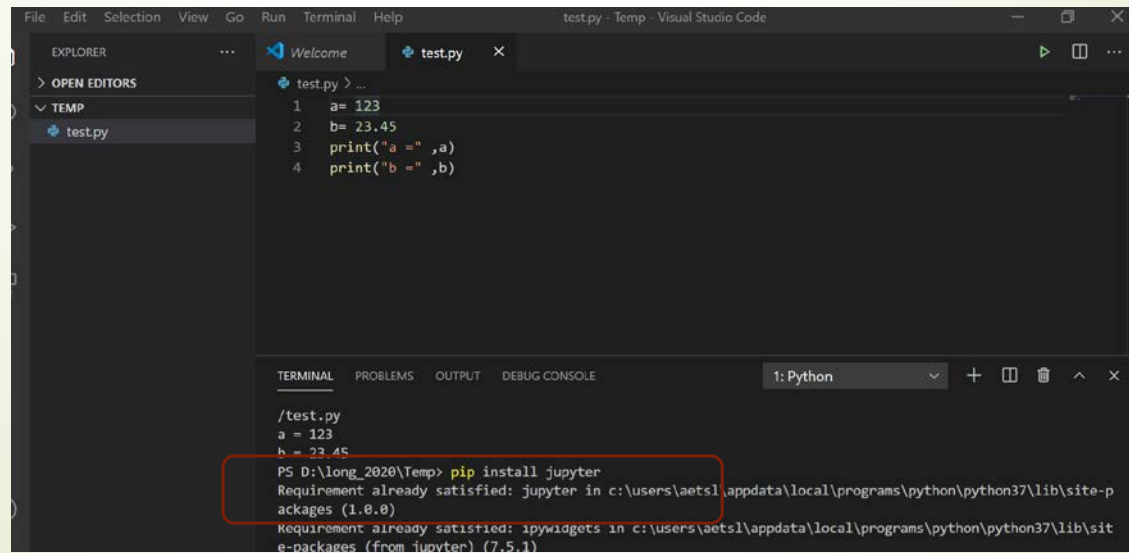
- ➡ 執行簡單範例程式
  - ➡ File->Open folder
  - ➡ File->New File
  - ➡ File->Save as (儲存 \*.py)



# Jupyter Notebook安裝

## ➤ TERMINAL

- pip install jupyter
- pip install --upgrade pip (upgrade pip version)



The screenshot shows the Visual Studio Code interface. The Explorer pane on the left shows a file named 'test.py' in a temporary directory. The Editor pane displays the contents of 'test.py':

```
1 a= 123
2 b= 23.45
3 print("a =" ,a)
4 print("b =" ,b)
```

The Terminal pane at the bottom shows the output of running the script and the command to install Jupyter:

```
/test.py
a = 123
b = 23.45
PS D:\long_2020\Temp> pip install jupyter
Requirement already satisfied: jupyter in c:\users\aelstl\AppData\Local\Programs\Python\Python37\lib\site-packages (1.0.0)
Requirement already satisfied: ipywidgets in c:\users\aelstl\AppData\Local\Programs\Python\Python37\lib\site-packages (from jupyter) (7.5.1)
```

The command 'pip install jupyter' and its output are highlighted with a red box.