

▼ 性別、年齡預測

```
1 !pip uninstall -y tensorflow
2 !pip install tensorflow==1.14.0
3 import os
4 os.kill(os.getpid(), 9)
```



Found existing installation: tensorflow 1.14.0

Uninstalling tensorflow-1.14.0:

Successfully uninstalled tensorflow-1.14.0

Looking in indexes: <https://pypi.org/simple>, <https://us-python.pkg.dev/colab-wheels/>

Collecting tensorflow==1.14.0

Using cached tensorflow-1.14.0-cp37-cp37m-manylinux1_x86_64.whl (109.3 MB)

Requirement already satisfied: termcolor>=1.1.0 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: absl-py>=0.7.0 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: protobuf>=3.6.1 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: tensorboard<1.15.0, >=1.14.0 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: numpy<2.0, >=1.14.5 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: keras-applications>=1.0.6 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: keras-preprocessing>=1.0.5 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: grpcio>=1.8.6 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: google-pasta>=0.1.6 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: gast>=0.2.0 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: wheel>=0.26 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: astor>=0.6.0 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: tensorflow-estimator<1.15.0rc0, >=1.14.0rc0 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: six>=1.10.0 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: wrapt>=1.11.1 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: h5py in /usr/local/lib/python3.7/dist-packages (from tensorflow)

Requirement already satisfied: markdown>=2.6.8 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: setuptools>=41.0.0 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: werkzeug>=0.11.15 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: importlib-metadata>=4.4 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: zipp>=0.5 in /usr/local/lib/python3.7/dist-packages (from importlib-metadata)

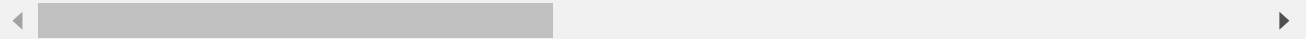
Requirement already satisfied: typing-extensions>=3.6.4 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: cached-property in /usr/local/lib/python3.7/dist-packages

Installing collected packages: tensorflow

ERROR: pip's dependency resolver does not currently take into account all the packages that you specify, in your environment. Some packages may be used, and others may not be. To resolve this, you may consider using the --legacy-resolver flag, which has been deprecated by pip and will be removed in a future version. To discuss this issue, see <https://github.com/pypa/pip/issues/9018>. kapre 0.3.7 requires tensorflow>=2.0.0, but you have tensorflow 1.14.0 which is incompatible.

Successfully installed tensorflow-1.14.0



```
1 !pip uninstall -y keras
2 !pip install keras==2.2.4
```

Found existing installation: Keras 2.2.4

Uninstalling Keras-2.2.4:

Successfully uninstalled Keras-2.2.4

Looking in indexes: <https://pypi.org/simple>, <https://us-python.pkg.dev/colab-wheels/>

Collecting keras==2.2.4

Using cached Keras-2.2.4-py2.py3-none-any.whl (312 kB)

Requirement already satisfied: h5py in /usr/local/lib/python3.7/dist-packages (from keras==2.2.4)

Requirement already satisfied: scipy>=0.14 in /usr/local/lib/python3.7/dist-packages

Requirement already satisfied: pyyaml in /usr/local/lib/python3.7/dist-packages (from keras==2.2.4)

```
Requirement already satisfied: keras-applications>=1.0.6 in /usr/local/lib/python3.7/
Requirement already satisfied: six>=1.9.0 in /usr/local/lib/python3.7/dist-packages (
Requirement already satisfied: numpy>=1.9.1 in /usr/local/lib/python3.7/dist-packages
Requirement already satisfied: keras-preprocessing>=1.0.5 in /usr/local/lib/python3.7
Requirement already satisfied: cached-property in /usr/local/lib/python3.7/dist-packa
Installing collected packages: keras
ERROR: pip's dependency resolver does not currently take into account all the package
py-agender 0.0.9 requires numpy<=1.15.9,>=1.13, but you have numpy 1.18.5 which is in
Successfully installed keras-2.2.4
```

```
1 !sed -i "s/].decode('utf8')/]/g" `find /usr -name saving.py|grep -E "n3.*s/k"`
```

```
1 !pip install py-agender[gpu]
2 import os
3 os.kill(os.getpid(), 9)
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheel
Requirement already satisfied: py-agender[gpu] in /usr/local/lib/python3.7/dist-pa
Requirement already satisfied: Keras<2.2.5,>=2.2.4 in /usr/local/lib/python3.7/dis
Requirement already satisfied: twine>=1.10 in /usr/local/lib/python3.7/dist-packag
Requirement already satisfied: opencv-python<3.5,>=3.4.2+contrib in /usr/local/lib
Collecting numpy<=1.15.9,>=1.13
```

```
Using cached numpy-1.15.4-cp37-cp37m-manylinux1_x86_64.whl (13.8 MB)
```

```
Requirement already satisfied: tensorflow-gpu<1.19.0,>=1.10.0 in /usr/local/lib/py
Requirement already satisfied: scipy>=0.14 in /usr/local/lib/python3.7/dist-packag
Requirement already satisfied: pyyaml in /usr/local/lib/python3.7/dist-packages (f
Requirement already satisfied: h5py in /usr/local/lib/python3.7/dist-packages (fro
Requirement already satisfied: keras-applications>=1.0.6 in /usr/local/lib/python3
Requirement already satisfied: six>=1.9.0 in /usr/local/lib/python3.7/dist-package
Requirement already satisfied: keras-preprocessing>=1.0.5 in /usr/local/lib/python
Requirement already satisfied: tensorboard<1.15.0,>=1.14.0 in /usr/local/lib/pytho
Requirement already satisfied: astor>=0.6.0 in /usr/local/lib/python3.7/dist-packa
Requirement already satisfied: tensorflow-estimator<1.15.0rc0,>=1.14.0rc0 in /usr/
Requirement already satisfied: termcolor>=1.1.0 in /usr/local/lib/python3.7/dist-p
Requirement already satisfied: wheel>=0.26 in /usr/local/lib/python3.7/dist-packag
Requirement already satisfied: protobuf>=3.6.1 in /usr/local/lib/python3.7/dist-pa
Requirement already satisfied: grpcio>=1.8.6 in /usr/local/lib/python3.7/dist-pack
Requirement already satisfied: wrapt>=1.11.1 in /usr/local/lib/python3.7/dist-pack
Requirement already satisfied: gast>=0.2.0 in /usr/local/lib/python3.7/dist-packag
Requirement already satisfied: google-pasta>=0.1.6 in /usr/local/lib/python3.7/dis
Requirement already satisfied: absl-py>=0.7.0 in /usr/local/lib/python3.7/dist-pac
Requirement already satisfied: markdown>=2.6.8 in /usr/local/lib/python3.7/dist-pa
Requirement already satisfied: werkzeug>=0.11.15 in /usr/local/lib/python3.7/dist-
Requirement already satisfied: setuptools>=41.0.0 in /usr/local/lib/python3.7/dist
Requirement already satisfied: importlib-metadata>=4.4 in /usr/local/lib/python3.7
Requirement already satisfied: typing-extensions>=3.6.4 in /usr/local/lib/python3.
Requirement already satisfied: zipp>=0.5 in /usr/local/lib/python3.7/dist-packages
Requirement already satisfied: urllib3>=1.26.0 in /usr/local/lib/python3.7/dist-pa
Requirement already satisfied: pkginfo>=1.8.1 in /usr/local/lib/python3.7/dist-pac
Requirement already satisfied: keyring>=15.1 in /usr/local/lib/python3.7/dist-pack
Requirement already satisfied: readme-renderer>=35.0 in /usr/local/lib/python3.7/d
Requirement already satisfied: rfc3986>=1.4.0 in /usr/local/lib/python3.7/dist-pac
Requirement already satisfied: requests-toolbelt!=0.9.0,>=0.8.0 in /usr/local/lib/
Requirement already satisfied: requests>=2.20 in /usr/local/lib/python3.7/dist-pac
Requirement already satisfied: rich>=12.0.0 in /usr/local/lib/python3.7/dist-packa
Requirement already satisfied: jaraco.classes in /usr/local/lib/python3.7/dist-pac
```

```
Requirement already satisfied: SecretStorage>=3.2 in /usr/local/lib/python3.7/dist
Requirement already satisfied: jeepney>=0.4.2 in /usr/local/lib/python3.7/dist-pac
Requirement already satisfied: docutils>=0.13.1 in /usr/local/lib/python3.7/dist-p
Requirement already satisfied: Pygments>=2.5.1 in /usr/local/lib/python3.7/dist-pa
Requirement already satisfied: bleach>=2.1.0 in /usr/local/lib/python3.7/dist-pack
Requirement already satisfied: webencodings in /usr/local/lib/python3.7/dist-packa
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.7/dist
Requirement already satisfied: charset-normalizer<3,>=2 in /usr/local/lib/python3.
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.7/dist-packa
Requirement already satisfied: commonmark<0.10.0,>=0.9.0 in /usr/local/lib/python3
Requirement already satisfied: cryptography>=2.0 in /usr/local/lib/python3.7/dist-
Requirement already satisfied: cffi>=1.12 in /usr/local/lib/python3.7/dist-package
Requirement already satisfied: pycparser in /usr/local/lib/python3.7/dist-packages
Requirement already satisfied: cached-property in /usr/local/lib/python3.7/dist-pa
Requirement already satisfied: more-itertools in /usr/local/lib/python3.7/dist-pac
Installing collected packages: numpy
```

```
1 !pip uninstall -y numpy
2 !pip install numpy==1.18.5
3 import os
4 os.kill(os.getpid(), 9)
```

```
Found existing installation: numpy 1.15.4
Uninstalling numpy-1.15.4:
  Successfully uninstalled numpy-1.15.4
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/
Collecting numpy==1.18.5
  Using cached numpy-1.18.5-cp37-cp37m-manylinux1_x86_64.whl (20.1 MB)
Installing collected packages: numpy
ERROR: pip's dependency resolver does not currently take into account all the package
xarray-einstats 0.2.2 requires numpy>=1.21, but you have numpy 1.18.5 which is incompat
tables 3.7.0 requires numpy>=1.19.0, but you have numpy 1.18.5 which is incompatible
py-agender 0.0.9 requires numpy<=1.15.9,>=1.13, but you have numpy 1.18.5 which is ir
plotnine 0.8.0 requires numpy>=1.19.0, but you have numpy 1.18.5 which is incompatibl
kapre 0.3.7 requires tensorflow>=2.0.0, but you have tensorflow 1.14.0 which is incom
jaxlib 0.3.22+cuda11.cudnn805 requires numpy>=1.20, but you have numpy 1.18.5 which i
jax 0.3.23 requires numpy>=1.20, but you have numpy 1.18.5 which is incompatible.
cupy-cuda11x 11.0.0 requires numpy<1.26,>=1.20, but you have numpy 1.18.5 which is ir
cmdstanpy 1.0.8 requires numpy>=1.21, but you have numpy 1.18.5 which is incompatible
Successfully installed numpy-1.18.5
```

```
1 from google.colab import drive
2 drive.mount('/content/drive')
```

```
Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.m
```

```
1 from pyagender import PyAgender
2 import os, warnings
3 import cv2 as cv
4 import matplotlib.pyplot as plt
5 from matplotlib.font_manager import FontProperties
6 from PIL import Image, ImageFilter
7 import numpy as np
```

```

8 warnings.filterwarnings("ignore")
9 BasePath = '/content/drive/MyDrive/Python/'
10 faceDB = BasePath + 'faceBase/'
11 faceUK = BasePath + 'faceUnknown/'
12 imgFile1 = BasePath + 'faceBase/AngieChiu_00.jpg'
13 imgFile2 = BasePath + 'faceBase/Lenna_01.png'
14 imgFile3 = BasePath + 'imagesDB/Audrey_Gregory.jpg'
15 resImage1 = BasePath + 'results/res1.png'
16 font1 = FontProperties(fname = BasePath + 'supData/楷書體.ttf')

Using TensorFlow backend.
/usr/local/lib/python3.7/dist-packages/tensorflow/python/framework/dtypes.py:516: Fut
_np_qint8 = np.dtype [("qint8", np.int8, 1)]
/usr/local/lib/python3.7/dist-packages/tensorflow/python/framework/dtypes.py:517: Fut
_np_quint8 = np.dtype [("quint8", np.uint8, 1)]
/usr/local/lib/python3.7/dist-packages/tensorflow/python/framework/dtypes.py:518: Fut
_np_qint16 = np.dtype [("qint16", np.int16, 1)]
/usr/local/lib/python3.7/dist-packages/tensorflow/python/framework/dtypes.py:519: Fut
_np_quint16 = np.dtype [("quint16", np.uint16, 1)]
/usr/local/lib/python3.7/dist-packages/tensorflow/python/framework/dtypes.py:520: Fut
_np_qint32 = np.dtype [("qint32", np.int32, 1)]
/usr/local/lib/python3.7/dist-packages/tensorflow/python/framework/dtypes.py:525: Fut
np_resource = np.dtype [("resource", np.ubyte, 1)]
/usr/local/lib/python3.7/dist-packages/tensorboard/compat/tensorflow_stub/dtypes.py:5
_np_qint8 = np.dtype [("qint8", np.int8, 1)]
/usr/local/lib/python3.7/dist-packages/tensorboard/compat/tensorflow_stub/dtypes.py:5
_np_quint8 = np.dtype [("quint8", np.uint8, 1)]
/usr/local/lib/python3.7/dist-packages/tensorboard/compat/tensorflow_stub/dtypes.py:5
_np_qint16 = np.dtype [("qint16", np.int16, 1)]
/usr/local/lib/python3.7/dist-packages/tensorboard/compat/tensorflow_stub/dtypes.py:5
_np_quint16 = np.dtype [("quint16", np.uint16, 1)]
/usr/local/lib/python3.7/dist-packages/tensorboard/compat/tensorflow_stub/dtypes.py:5
_np_qint32 = np.dtype [("qint32", np.int32, 1)]
/usr/local/lib/python3.7/dist-packages/tensorboard/compat/tensorflow_stub/dtypes.py:5
np_resource = np.dtype [("resource", np.ubyte, 1)]

```

▼ 性別與年齡預測

個人照片預測

```

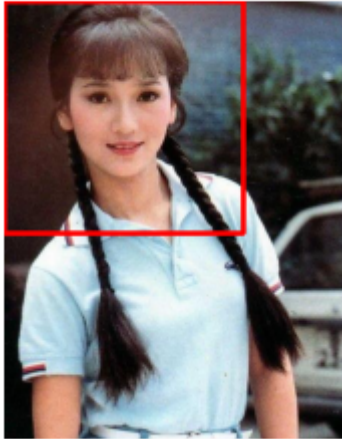
1 im00 = Image.open(imgFile1) # 1. 讀取資料/轉換型別
2 img=np.asarray(im00)
3 agender = PyAgender() # 2. 預測性別/年齡
4 face = agender.detect_genders_ages(img)[0]
5 l, t, r, b=face['left'], face['top'], face['right'], face['bottom']
6 gender = '女性' if face['gender']>0.5 else '男性'
7 age = face['age']
8 cv.rectangle(img, (l, t), (r, b), (255, 0, 0), 5) # 3. 框出人臉
9 plt.title('性別: {} 年齡: {:.1f}'.format(gender, age),
10 fontproperties=font1, color='blue', fontsize = 18)
11 plt.imshow(img)

```

```
12 plt.axis('off')
13 plt.show()
```

```
WARNING:tensorflow:From /usr/local/lib/python3.7/dist-packages/keras/backend/tensorf]
WARNING:tensorflow:From /usr/local/lib/python3.7/dist-packages/keras/backend/tensorf]
WARNING:tensorflow:From /usr/local/lib/python3.7/dist-packages/keras/backend/tensorf]
WARNING:tensorflow:From /usr/local/lib/python3.7/dist-packages/keras/backend/tensorf]
WARNING:tensorflow:From /usr/local/lib/python3.7/dist-packages/keras/backend/tensorf]
WARNING:tensorflow:From /usr/local/lib/python3.7/dist-packages/keras/backend/tensorf]
WARNING:tensorflow:From /usr/local/lib/python3.7/dist-packages/keras/backend/tensorf]
```

性別：女性 年齡：21.1



多人合照處理

```
1 im00 = Image.open(imgFile3)      # 1. 讀取資料/轉換型別
2 img=np.asarray(im00)
3 agender = PyAgender()             # 2. 預測性別/年齡
4 faces = agender.detect_genders_ages(img)
5 for face in faces:                # 3. 剪出人臉框輸出
6     l, t, r, b=face['left'], face['top'], face['right'], face['bottom']
7     gender = '女性' if face['gender']>0.5 else '男性'
8     age = face['age']
9     img = im00.crop([l, t, r, b])
10    plt.title('性別: {} 年齡: {:.4.1f}'.format(gender, age),
11             fontproperties=font1, color='blue', fontsize = 18)
12    plt.imshow(img)
13    plt.axis('off')
14    plt.show()
```

性別：男性 年齡：49.8



性別：女性 年齡：32.8

