

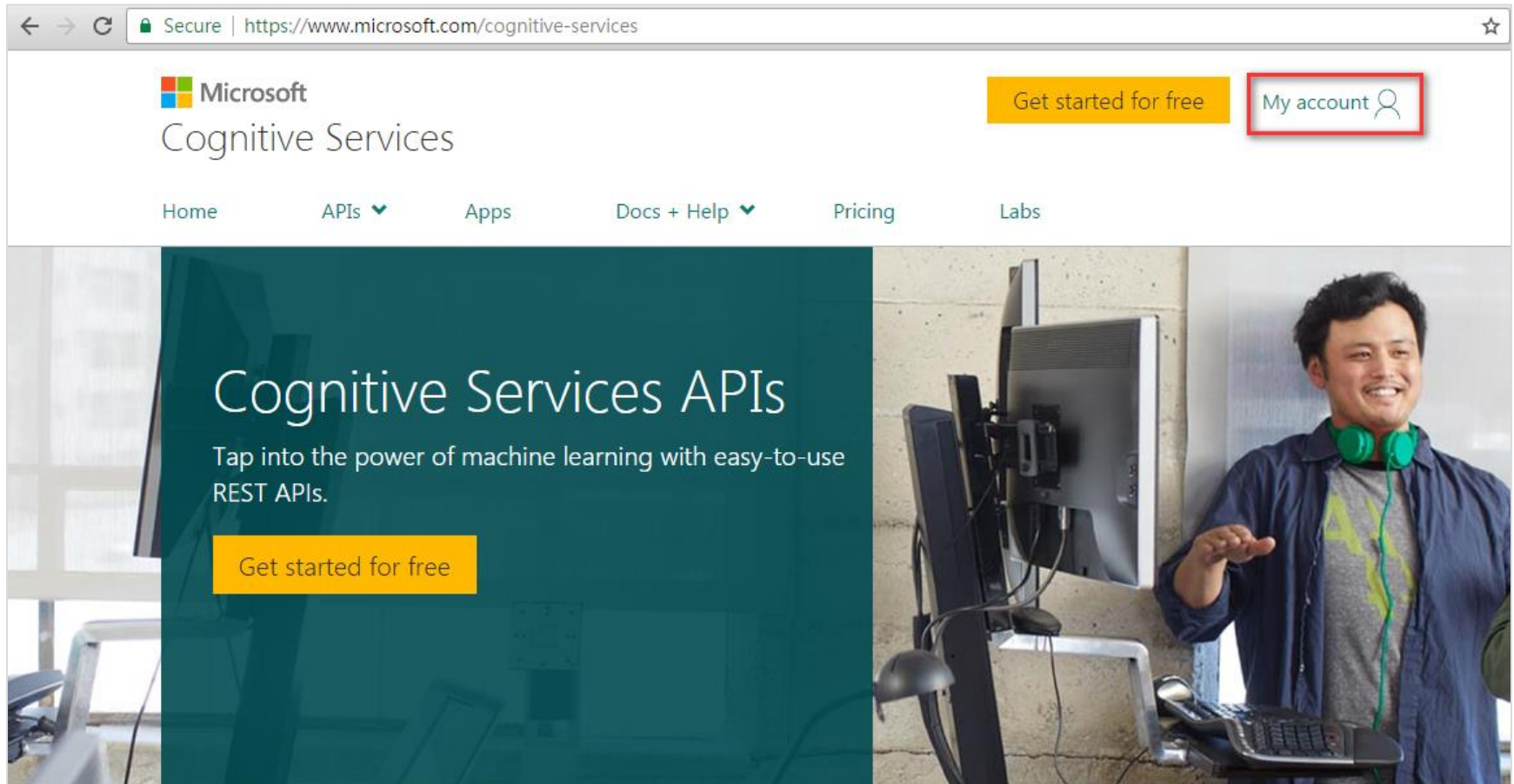


## 2017 校園黑客松 - 微軟認知服務

# Practice 1.


線上申請微軟認知服務帳號


# 1. 申請帳號



## 2. 選擇註冊帳號類型

← → ↻ <https://www.microsoft.com/cognitive-services/en-US/sign-up?ReturnUrl=/cognitive-services/en-us/subscriptions>

 **Microsoft**  
Cognitive Services


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Subscribe in seconds

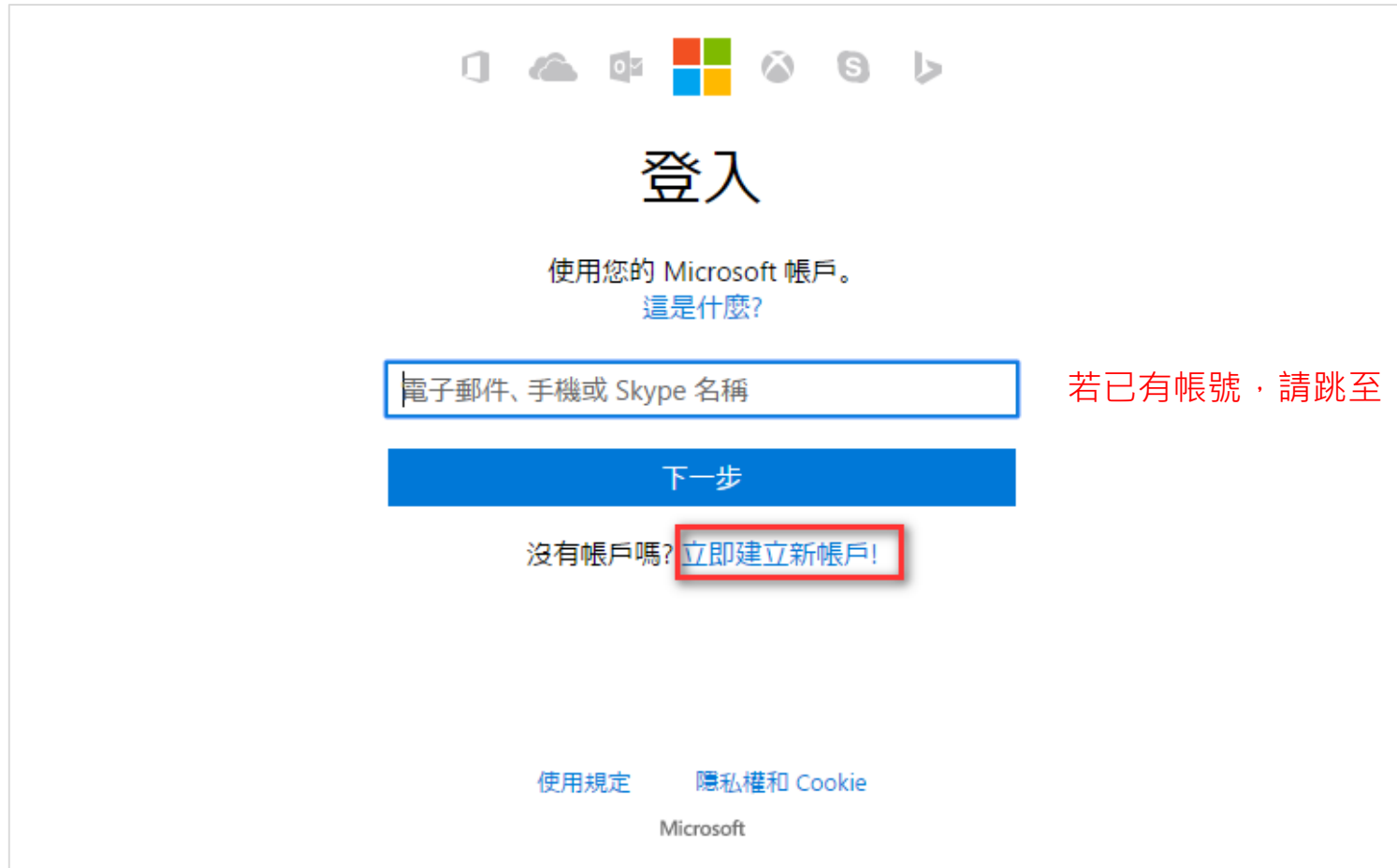
Sign up for free API keys using one of the accounts below

 Microsoft account

 GitHub

 LinkedIn

### 3. 建立新帳戶



The image shows the Microsoft login page. At the top, there is a row of icons for various Microsoft services: OneDrive, Office 365, Outlook, the Microsoft logo, Xbox, Skype, and Edge. Below these icons is the large Chinese character '登入' (Login). Underneath, it says '使用您的 Microsoft 帳戶。' (Use your Microsoft account.) followed by a blue link '這是什麼?' (What is this?). There is a text input field with the placeholder text '電子郵件、手機或 Skype 名稱' (Email, phone, or Skype name). Below the input field is a blue button with the text '下一步' (Next). Under the button, it says '沒有帳戶嗎?' (Don't have an account?) followed by a red-bordered box containing the text '立即建立新帳戶!' (Create a new account now!). At the bottom, there are links for '使用規定' (Terms of use) and '隱私權和 Cookie' (Privacy and cookies), and the Microsoft logo.

登入

使用您的 Microsoft 帳戶。  
[這是什麼?](#)

電子郵件、手機或 Skype 名稱

下一步

沒有帳戶嗎? **立即建立新帳戶!**

[使用規定](#) [隱私權和 Cookie](#)

Microsoft

若已有帳號，請跳至



## 4. 註冊帳號

### 建立帳戶

您可以使用任何電子郵件地址做為您新 Microsoft 帳戶的使用者名稱 (包括來自 Outlook.com、Yahoo! 或 Gmail 的地址)。如果您已登入 Windows 電腦、平板電腦或電話、Xbox Live、Outlook.com 或 OneDrive，請使用該帳戶登入。

姓氏 名字

使用者名稱  
someone@example.com

[取得新的電子郵件地址](#)

密碼

最少 8 個字元：區分大小寫

再次輸入密碼

國家/地區  
台灣

出生日期  
年 月 日

性別  
請選取...

協助我們保護您的資訊

您的電話號碼可協助我們保護您帳戶的安全。

國碼/區碼  
台灣 (+886)

電話號碼

我們必須確定建立帳戶的是真人，才會繼續執行。



輸入您看到的字元

☐ 傳送 Microsoft 促銷活動的電子郵件給我 (您隨時可以取消訂閱)。

按一下 (建立帳戶) 表示您同意 Microsoft 服務合約及隱私權與 Cookie 聲明。

建立帳戶



Microsoft

已準備好開始使用！

感謝您確認 [someone@gmail.com](#)。現在您可以返回原本執行的動作。

確定

中文(台灣)

隱私權與 Cookie 使用規定 與我們連絡 © Microsoft 2017



讓此應用程式存取您的資訊嗎？  
www.microsoft.com

Cognitive Site 需要您授與權限以便：

自動登入  
使用您的 Microsoft 帳戶登入將會讓您自動登入此應用程式。

存取您的電子郵件地址  
Cognitive Site 將能看到您個人檔案中的電子郵件地址。

您隨時可以在帳戶設定中變更這些應用程式權限。

Cognitive Site 隱私權與 Cookie | 條款

是 否

使用規定 隱私權與 Cookie 登出

Microsoft

至信箱收取認證信

授權應用系統使用



## 5.輸入帳號、密碼登入

### 登入

使用您的 Microsoft 帳戶。  
[這是什麼?](#)

下一步

沒有帳戶嗎? [立即建立新帳戶!](#)

[使用規定](#)   [隱私權和 Cookie](#)

Microsoft



### 輸入密碼

輸入 hxx-15285@esunbank.com.tw 的密碼

☐ 讓我保持登入

上一步

登入

[忘記密碼](#)


[使用規定](#)   [隱私權和 Cookie](#)

Microsoft









## 6. 登入成功

 Microsoft  
Cognitive Services


Get started for free

Sign out 

Home APIs Apps Docs + Help Pricing Labs

Hello, ! @gmail.com  **unverified**


Send email verification



It may take up to 10 minutes for the newly (re)generated keys to take effect. Starting on 1/17, our endpoints will be changing. If your API is currently using "api.projectoxford.ai" endpoint, you will need to switch to the new API endpoint starting on 1/17. If you continue to use the legacy endpoint after 1/17, you may experience latency. To know if you are affected, visit your API homepage and click on the "API Reference" button for more information on your API's endpoint change. We thank you for your cooperation as we continue to improve our services. The old API endpoints will be deprecated 90 days following this change (on 4/15).

Free trials Labs

We've recently added email verification to the process for getting subscription keys. Please check your email and click the link provided in order to verify your email.



Subscribe to new free trials

Tab into the power of machine learning with easy to use REST APIs

2. 選擇+申請API服務。



## 7. 取得API Key

The image shows two overlapping screenshots of the Microsoft Cognitive Services portal. The background screenshot shows the 'Request new trials' page with a table of services. The foreground screenshot shows the details for the 'Face - Preview' service, where the API key is displayed and highlighted with a red box. A red arrow points to the 'show' link next to the key.

**1. 從顯示的清單中，選擇Face服務**

Product Name	Description
<input type="checkbox"/> Bing Autosuggest - Free	10,000 transactions per month, 10 per second.
<input type="checkbox"/> Bing Search - Free	Across all Bing Search APIs (Web, Image, Video, News, etc.) 90 day period, after which a subscription may be purchased.
<input type="checkbox"/> Bing Speech - Free	5,000 transactions per month, 20 per minute for each language.
<input type="checkbox"/> Bing Spell Check - Free	5,000 transactions per month, 7 per minute.
<input type="checkbox"/> Academic - Preview	10,000 transactions per month, 3 per second for interactive queries.
<input type="checkbox"/> Computer Vision - Preview	5,000 transactions per month, 20 per minute.
<input type="checkbox"/> Emotion - Preview	30,000 transactions per month, 20 per minute.
<input type="checkbox"/> Entity Linking - Preview	1000 transactions per day, 10KB text limit.
<input checked="" type="checkbox"/> Face - Preview	30,000 transactions per month, 20 per minute.

**2. 點選「show」，取得key，作為之後呼叫API時使用**

Face - Preview  
30,000 transactions per month, 20 per minute.  
State: active  
Created on 3/16/2017 9:46:48 AM

Key 1: 89efc29d1e8d4d0f9f151f37a409bfb9  
Key 2: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Regenerate | Hide | Copy  
Regenerate | Show | Copy

Show Quota

Buy On Azure | Cancel

# Practice 2.

## 測試微軟認知服務功能

透過線上認知服務測試工具，協助開發者在申請認知服務前，確認是否符合其使用需求。

( 接下來練習都以臉部辨識功能作為範例說明 )



# 1. 點選APIs→Face

The screenshot shows the Microsoft Cognitive Services website. The header includes the Microsoft logo, the text 'Cognitive Services', a 'Get started for free' button, and a 'My account' link. The navigation bar has links for 'Home', 'APIs' (which is selected and highlighted with a grey background), 'Apps', 'Docs + Help', 'Pricing', and 'Labs'. Below the navigation bar, there are five columns of services: Vision, Speech, Language, Knowledge, and Search. Under the 'Vision' column, the 'Face' service is highlighted with a red rectangular box. Other services listed include Computer Vision, Content Moderator, Emotion, and Video. The 'Speech' column lists Bing Speech, Custom Speech Service, and Speaker Recognition. The 'Language' column lists Bing Spell Check, Language Understanding, Linguistic Analysis, Text Analytics, Translator, and WebLM. The 'Knowledge' column lists Academic, Entity Linking, Knowledge Exploration, QnA Maker, and Recommendations. The 'Search' column lists Bing Autosuggest, Bing Image Search, Bing News Search, Bing Video Search, and Bing Web Search. At the bottom of the main content area, there is a link that says 'Still looking for the right API? See the entire collection >'. The footer contains three buttons: 'Documentation', 'API Reference', and 'SDK'.

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**Vision**  
Computer Vision  
Content Moderator  
Emotion  
**Face**  
Video

**Speech**  
Bing Speech  
Custom Speech Service  
Speaker Recognition

**Language**  
Bing Spell Check  
Language Understanding  
Linguistic Analysis  
Text Analytics  
Translator  
WebLM

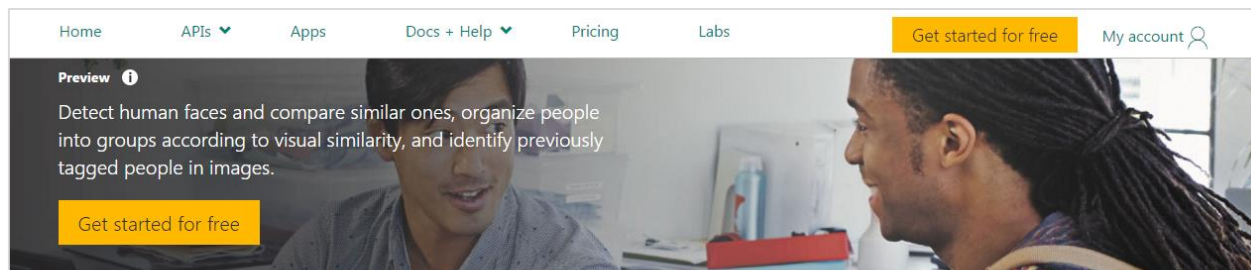
**Knowledge**  
Academic  
Entity Linking  
Knowledge Exploration  
QnA Maker  
Recommendations

**Search**  
Bing Autosuggest  
Bing Image Search  
Bing News Search  
Bing Video Search  
Bing Web Search

Still looking for the right API? [See the entire collection >](#)

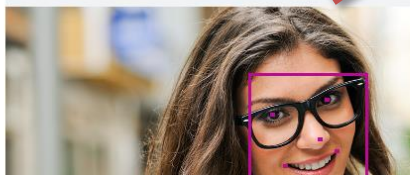
Documentation API Reference SDK

## 2. 測試人臉辨識功能



Detect one or more human faces, along with face attributes, and facial features. After detecting faces, you can perform further processing. The face attributes include face age, gender, and emotion.

Try this now by uploading a local image or providing an image URL.



1. 從local端測試一張照片



2. 觀察臉部辨識結果

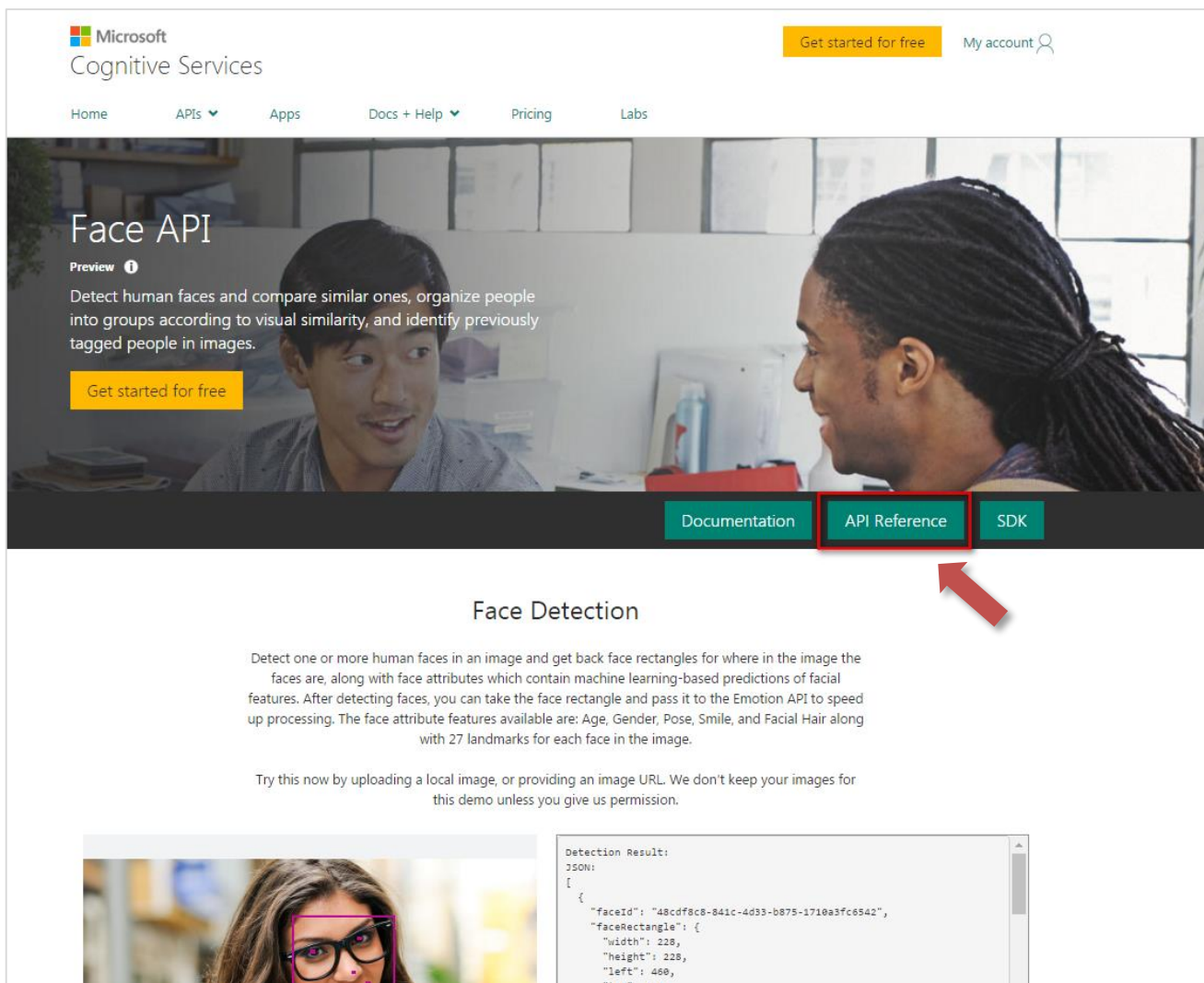
# Practice 3.

## 使用微軟線上 API 測試工具

進一步瞭解，認知服務的規格並測試：

例如：呼叫須帶入那些參數、參數屬性、回傳欄位。

# 1.查詢API規格



Microsoft Cognitive Services

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## Face API

Preview

Detect human faces and compare similar ones, organize people into groups according to visual similarity, and identify previously tagged people in images.

Get started for free

Documentation **API Reference** SDK

### Face Detection

Detect one or more human faces in an image and get back face rectangles for where in the image the faces are, along with face attributes which contain machine learning-based predictions of facial features. After detecting faces, you can take the face rectangle and pass it to the Emotion API to speed up processing. The face attribute features available are: Age, Gender, Pose, Smile, and Facial Hair along with 27 landmarks for each face in the image.

Try this now by uploading a local image, or providing an image URL. We don't keep your images for this demo unless you give us permission.

Detection Result:

```
JSON:
[
  {
    "faceId": "48cdf8c8-841c-4d33-b875-1710a3fc6542",
    "faceRectangle": {
      "width": 228,
      "height": 228,
      "left": 460,
      "top": 170
```



## 2. 瀏覽API 規格



Cognitive Services

APIs Documentation > API  
Reference

### ▼ Face 1. API 種類

POST Detect

POST Find Similar

POST Group

POST Identify

POST Verify

► Face List

► Person

► Person Group

### Face API - V1.0

↓ API definition

#### Face - Detect

Detect human faces in an image and returns face locations, and optionally with facelds, landmarks, and attributes.

- Optional parameters for returning faceld, landmarks, and attributes. Attributes include age, gender, smile intensity, facial hair, head pose and glasses. faceld is for other APIs use including Face - Identify, Face - Verify, and Face - Find Similar. The faceld will expire in 24 hours after detection call.
  - JPEG, PNG, GIF(the first frame), and BMP are supported. The image file size should be larger than or equal to 1KB but no larger than 4MB.
  - The detectable face size is between 36x36 to 4096x4096 pixels. The faces out of this range will not be detected.
  - A maximum of 64 faces could be returned for an image. The returned faces are ranked by face rectangle size in descending order.
  - Some faces may not be detected for technical challenges, e.g. very large face angles (head-pose) or large occlusion. Frontal and near-frontal faces have the best results.
  - Attributes (age, gender, headPose, smile, facialHair, and glasses) are still experimental and may not be very accurate. HeadPose's pitch value is a reserved field and will always return 0.

Http Method

POST

### 2. 開啟 API測試工具

Open API Testing Console

Request URL

[https://westus.api.cognitive.microsoft.com/face/v1.0/detect?returnFaceld\[&returnFaceLandmarks\[&returnFaceAttributes](https://westus.api.cognitive.microsoft.com/face/v1.0/detect?returnFaceld[&returnFaceLandmarks[&returnFaceAttributes)

Request parameters

<u>returnFaceld</u> (optional)	boolean	Return facelds of the detected faces or not. The default value is true.
returnFaceLandmarks (optional)	boolean	Return face landmarks of the detected faces or not. The default value is false.
<u>returnFaceAttributes</u> (optional)	string	Analyze and return the one or more specified face attributes in the comma-separated string like "returnFaceAttributes=age,gender". Supported face attributes include age, gender, headPose, smile, facialHair, and glasses. Note that each face attribute analysis has additional computational and time cost.



# 3. 使用API Testing Console

Microsoft Cognitive Services

APIs Documentation > API Reference

Face API - V1.0

Face - Detect

Detect human faces in an image and returns face locations, and optionally with faceids, landmarks, and attributes.

- Optional parameters for returning faceid, landmarks, and attributes. Attributes include age, gender, smile intensity, facial hair, and other APIs use including Face - Identify, Face - Verify, and Face - Find Similar. The facelid will expire in 24 hours after detection.
- The detectable face size is between 36x36 to 4096x4096 pixels. The faces out of this range will not be detected.
- A maximum of 64 faces could be returned for an image. The returned faces are ranked by face rectangle size in descending order.
- Some faces may not be detected for technical challenges, e.g. very large face angles (head-pose) or large occlusion. For the best results.
- Attributes (age, gender, headPose, smile, facialHair, and glasses) are still experimental and may not be very accurate. The field will always return 0.

Http Method: POST

Query parameters

Parameter	Value	Action
returnFaceId	true	Remove parameter
returnFaceLandmarks	false	Remove parameter
returnFaceAttributes	age,gender	Remove parameter

Headers

Header	Value	Action
Content-Type	application/json	Remove header
Ocp-Apim-Subscription-Key	.....	

Request body

To detect in a URL (or binary data) specified image.

JSON fields in the request body:

Fields	Type	Description
url	String	URL of input image.

```

1 {
2   "url": "http://example.com/1.jpg"
3 }
  
```

Request URL

https://westus.api.cognitive.microsoft.com/Face/V1.0/detect?returnFaceId=true&returnFaceLandmarks=false&returnFaceAttributes=age,gender

HTTP request

```

POST https://westus.api.cognitive.microsoft.com/Face/V1.0/detect?returnFaceId=true&returnFaceLandmarks=false&returnFaceAttributes=age,gender HTTP/1.1
Host: westus.api.cognitive.microsoft.com
Content-Type: application/json
Ocp-Apim-Subscription-Key: .....

{
  "url": "http://example.com/1.jpg"
}
  
```

Send

Query parameters

returnFaceId: true [Remove parameter]

returnFaceLandmarks: false [Remove parameter]

returnFaceAttributes: age,gender [Remove parameter]

+ Add parameter

Headers

Content-Type: application/json [Remove header]

Ocp-Apim-Subscription-Key: ..... [Add header]

+ Add header

1. 參考前一頁投影片的規格，此欄位可限制回傳那些欄位，例如：age, gender

2. 使用Practice 1申請Face服務所取得的key

Request body

To detect in a URL (or binary data) specified image.

JSON fields in the request body:

Fields	Type	Description
url	String	URL of input image.

```

1 {
2   "url": "http://www.mydoublebeauty.com/archive/image/edcontent2/editor/1393383576387.jpg"
3 }
  
```

3. 更換URL圖片連結

4. 點選「Send」

## 4. 取得測試結果

Response status

200 OK

1. 確認回傳200 OK，表示執行成功

Response latency

2103 ms

Response content

```
Pragma: no-cache
apim-request-id: c69a0338-4a54-4c76-bdf0-59b1c1f12e2c
Strict-Transport-Security: max-age=31536000; includeSubDomains; preload
Cache-Control: no-cache
Date: Thu, 16 Mar 2017 10:02:54 GMT
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Content-Length: 162
Content-Type: application/json; charset=utf-8
Expires: -1
```

```
[
  {
    "faceId": "707e77a7-de6f-41f8-bfdd-4c53d20c7a9c",
    "faceRectangle": {
      "top": 109,
      "left": 163,
      "width": 139,
      "height": 139
    },
    "faceAttributes": {
      "gender": "female",
      "age": 1.3
    }
  }
]
```

2. 確實如設定，僅提供age、gender欄位



# 感謝聆聽 敬請指教

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