

# 2020 Microsoft Coding Angles

## Custom Vision Hands-on Introduction

### 前言

Custom Vision 是由 Microsoft 所開發的雲端服務，讓使用者可以輕鬆打造影像分類器和物件辨識。在這次的 hands-on 中，將新建一個 Custom Vision 專案，分辨口罩的顏色。

### 準備事項

開始之前，請確保已擁有一個 Azure subscription account。

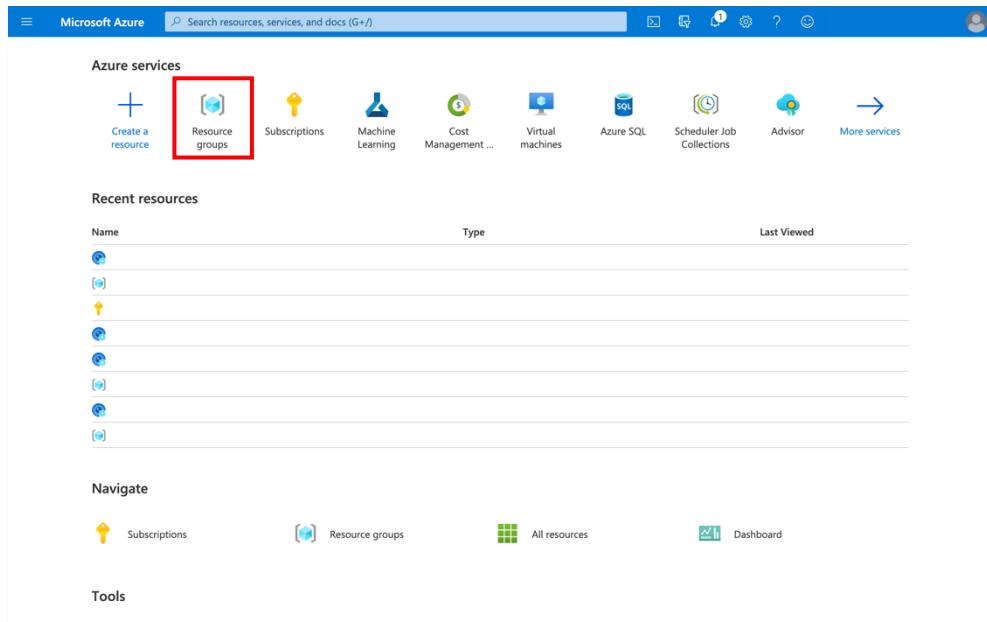
### Overview

1. 建立資源群組
2. 建立 Custom Vision 服務
3. 建立 Custom Vision 專案
4. 上傳圖片並進行標記
5. 訓練模型
6. 測試圖片
7. 開始訓練妳們有興趣的資料集吧！

## 1. 建立資源群組

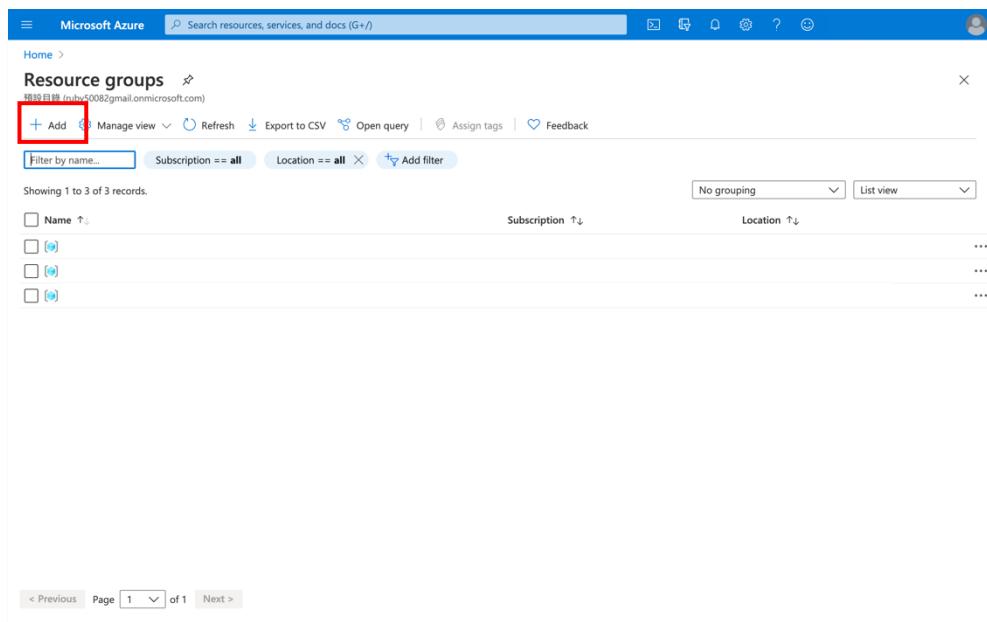
a. 前往 <https://portal.azure.com/>

b. 點選 Resource Group



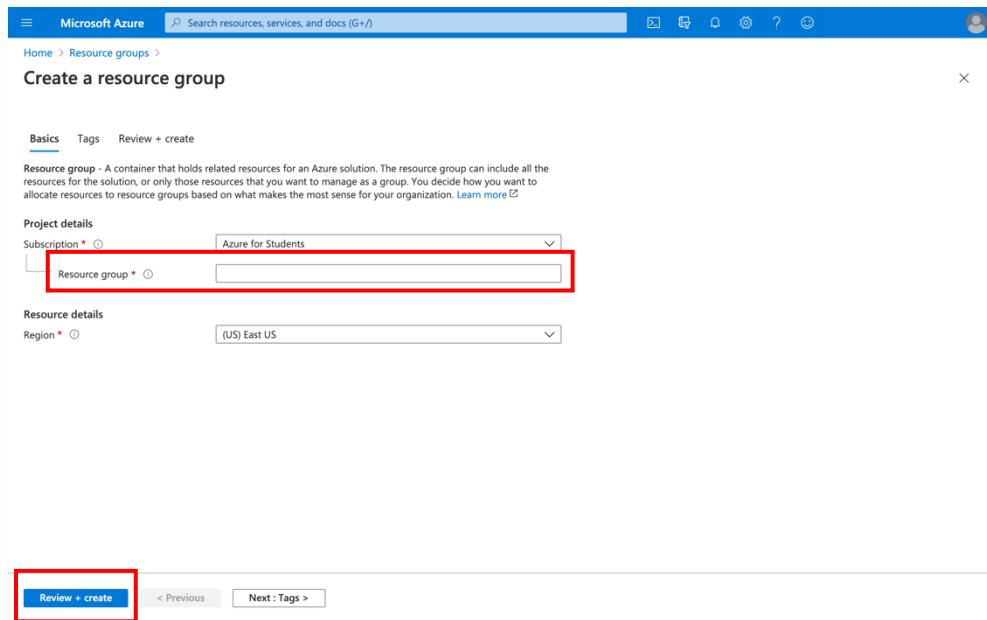
The screenshot shows the Microsoft Azure portal homepage. At the top, there's a search bar and several navigation icons. Below the search bar, there's a section titled "Azure services" with various service icons: "Create a resource" (plus sign), "Resource groups" (highlighted with a red box), "Subscriptions", "Machine Learning", "Cost Management ...", "Virtual machines", "Azure SQL", "Scheduler Job Collections", "Advisor", and "More services". Underneath this, there's a "Recent resources" section listing several items, each with a small icon and a link. Below that is a "Navigate" section with links for "Subscriptions", "Resource groups" (highlighted with a red box), "All resources", and "Dashboard". At the bottom, there's a "Tools" section.

c. 新增資源群組



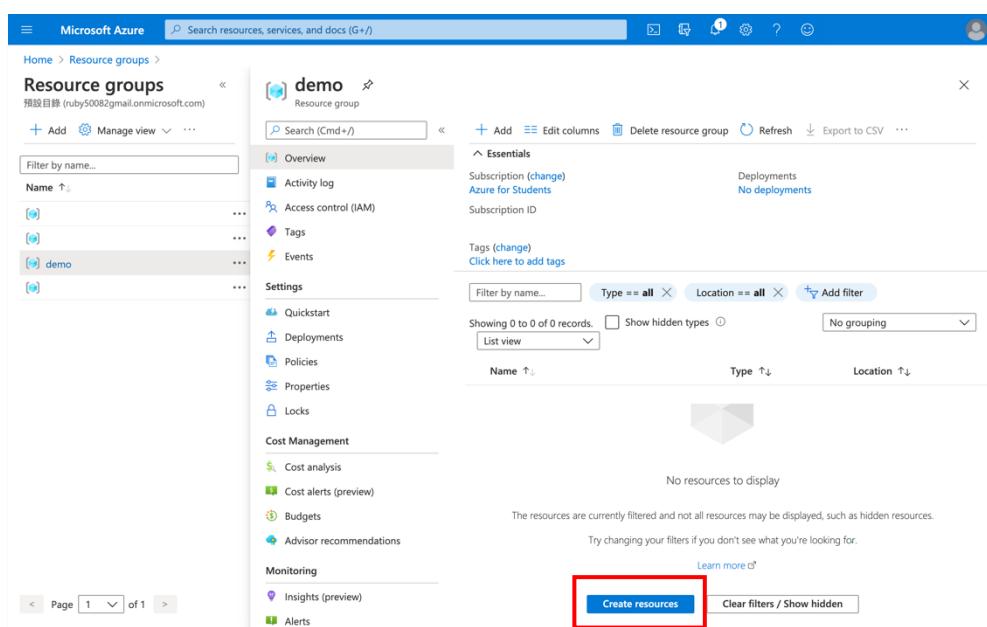
The screenshot shows the "Resource groups" page in the Microsoft Azure portal. At the top, there's a header with the title "Resource groups" and a user profile icon. Below the header, there's a toolbar with buttons for "+ Add" (highlighted with a red box), "Manage view", "Refresh", "Export to CSV", "Open query", "Assign tags", and "Feedback". There are also filters for "Subscription == all" and "Location == all". To the right of the toolbar, there are dropdown menus for "No grouping" and "List view". The main area displays a table with three records, each with a checkbox and a small icon. At the bottom, there are pagination controls: "< Previous", "Page 1 of 1", and "Next >".

#### d. 設定 resource group 名稱

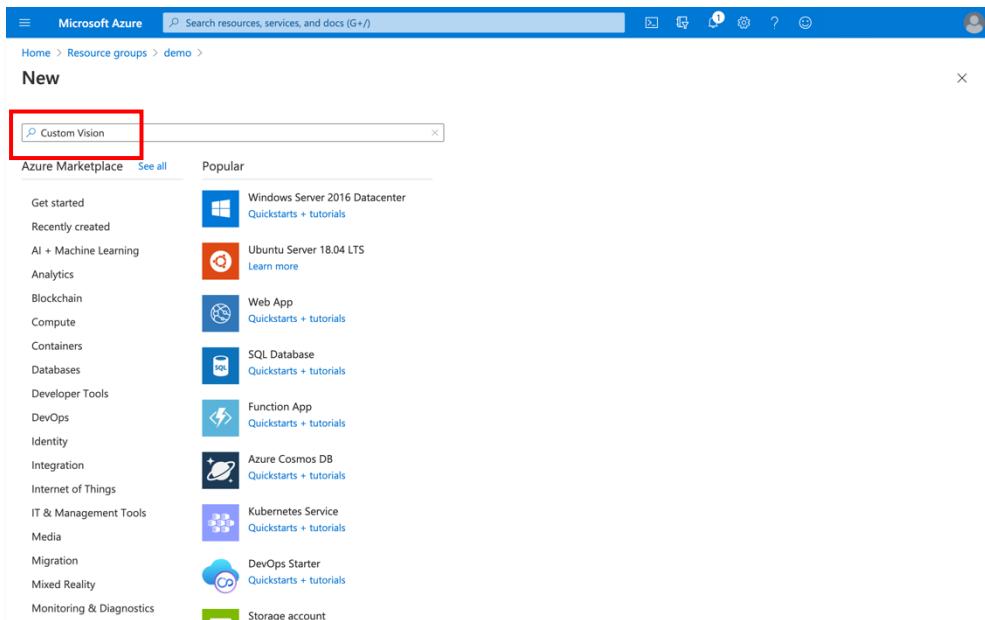


## 2. 建立 Custom Vision 服務

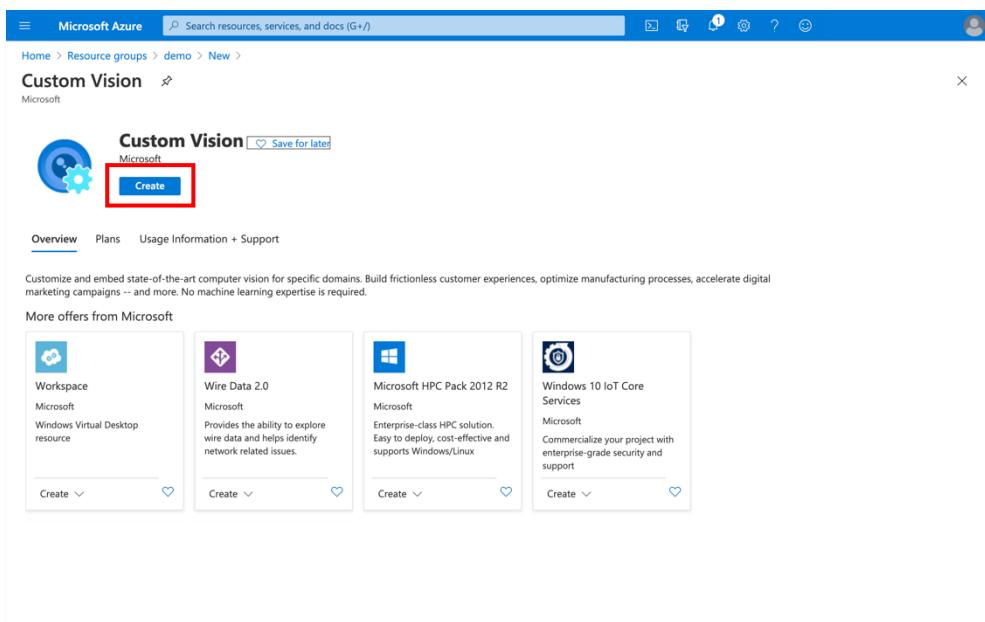
#### a. 從 resource group 中開啟服務



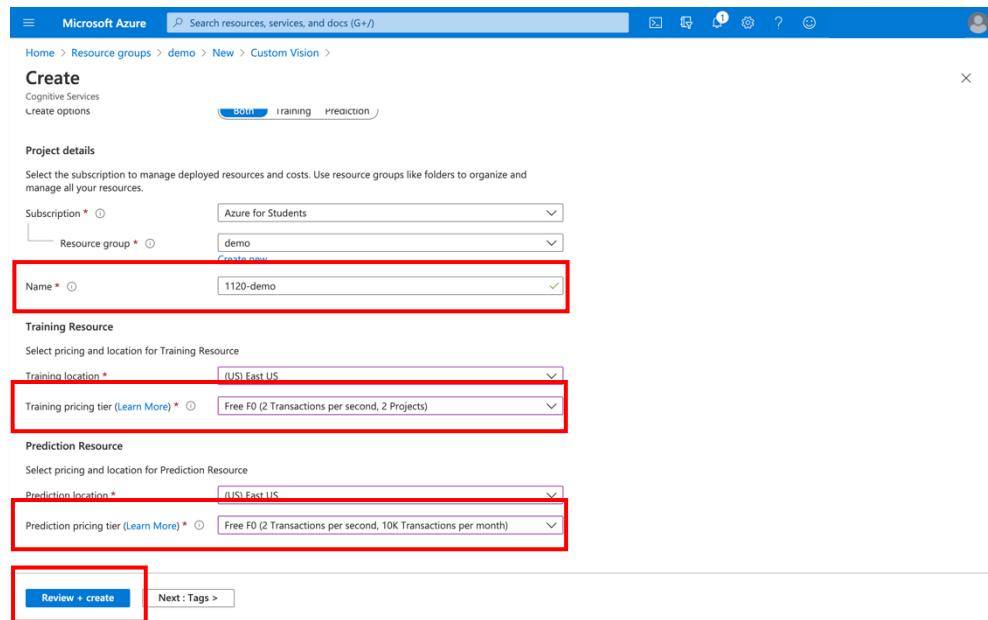
b. 在搜尋列中輸入 “Custom Vision”



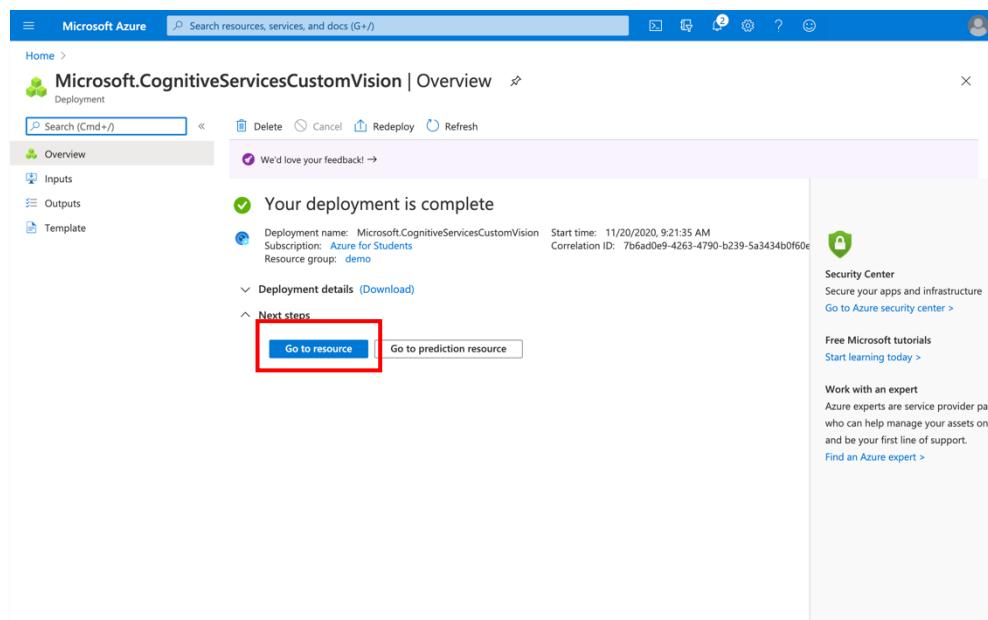
c. 找到後點選 Create 按鈕



#### d. 命名並選擇設定：計費方案選擇 F0 ( 免費 )



#### e. 部署成功，服務已經開啟



### 3. 建立 Custom Vision 專案

#### a. 點選 “Custom Vision Portal” ，開啟 Custom Vision 操作頁面

The screenshot shows the Microsoft Azure Cognitive Services Custom Vision Quick Start page. The left sidebar lists various management options like Overview, Activity log, Access control (IAM), Tags, and Diagnose and solve problems. The main content area is titled "1120-demo | Quick start" and contains three numbered steps:

1. Get the API Key to authenticate your applications and start sending calls to the service. It notes that all Custom Vision calls require a key, which can be found in the Keys and Endpoint section.
2. Try the service in the Custom Vision portal - requires API Key. A red box highlights the "Custom Vision portal" link.
3. Make a web API call - requires API Key and location. It provides sample code for C#, Python, Node.js, Java, and Go.

At the bottom, there's a link to "Try building an application".

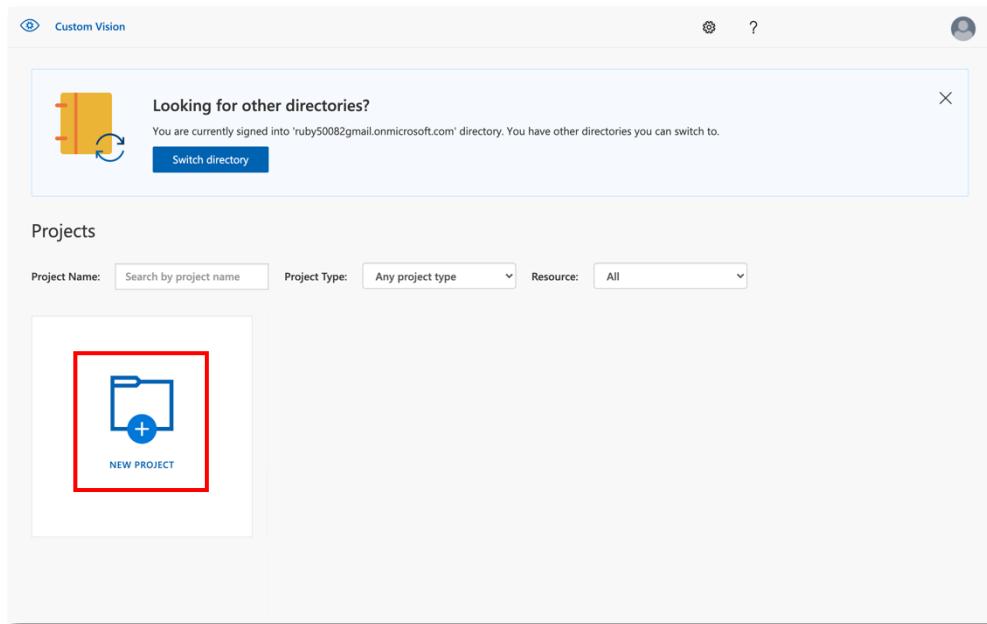
#### b. 來到 <https://www.customvision.ai>，點選“SIGN IN”再次登入

Azure 帳號

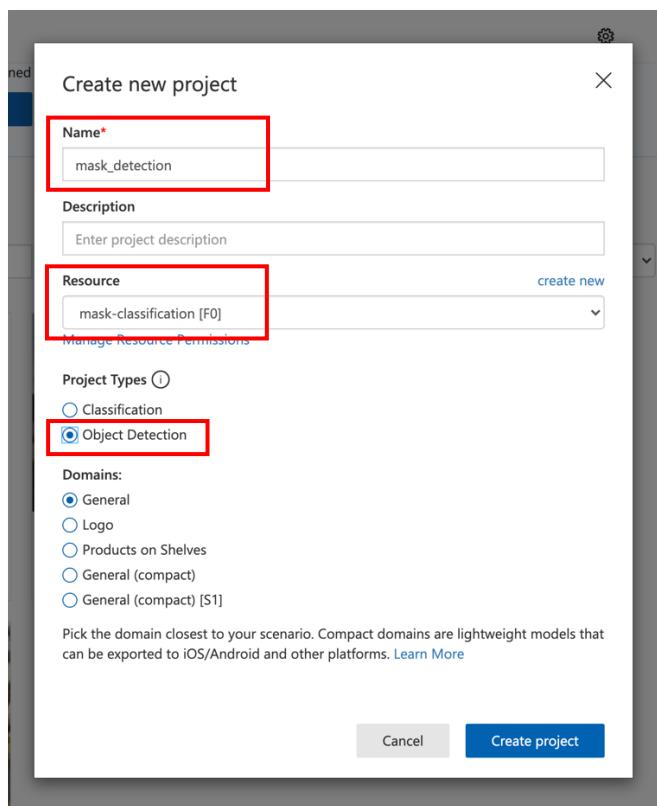
The screenshot shows the Custom Vision AI landing page. The top navigation bar includes Microsoft, Cognitive Services, and Custom Vision. The main visual features a hummingbird and text: "Visual Intelligence Made Easy" and "Easily customize your own state-of-the-art computer vision models that fit perfectly with your unique use case. Just bring a few examples of labeled images and let Custom Vision do the hard work." A blue "SIGN IN" button is highlighted with a red box.

At the bottom, there are three small images of labeled images, a central icon showing a brain and arrows, and three performance metrics: 89%, 93%, and 91%.

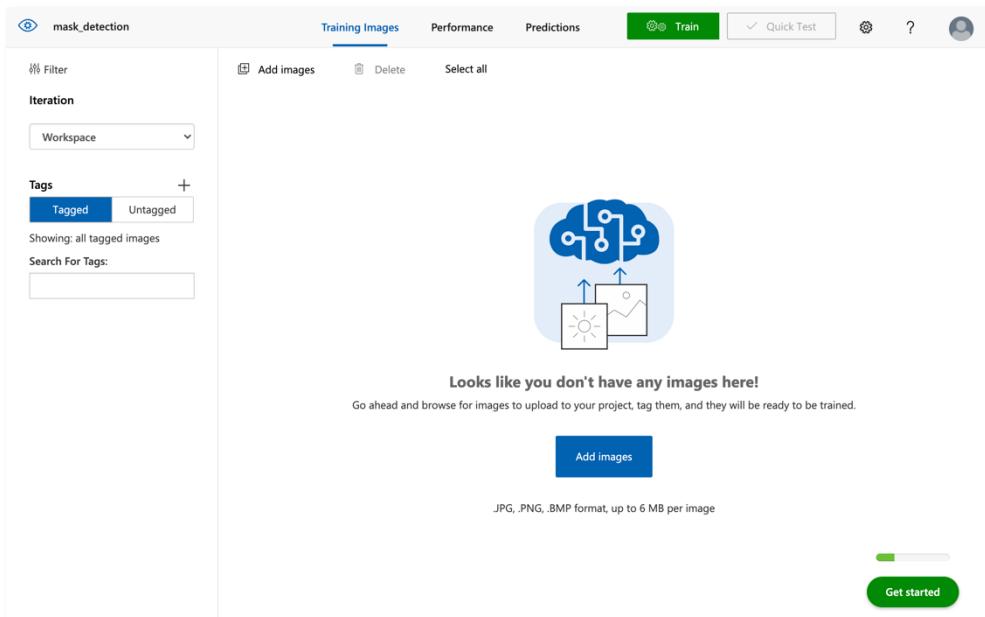
### C. 建立新專案



### d. 命名、選擇設定 (在這個 demo 中使用 classification )

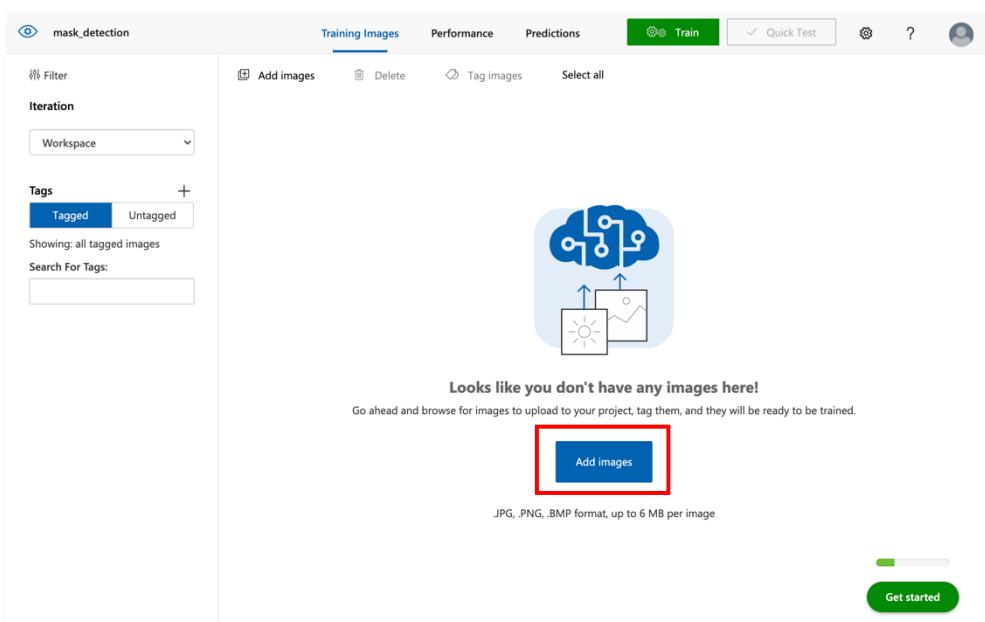


## e. 專案建立成功

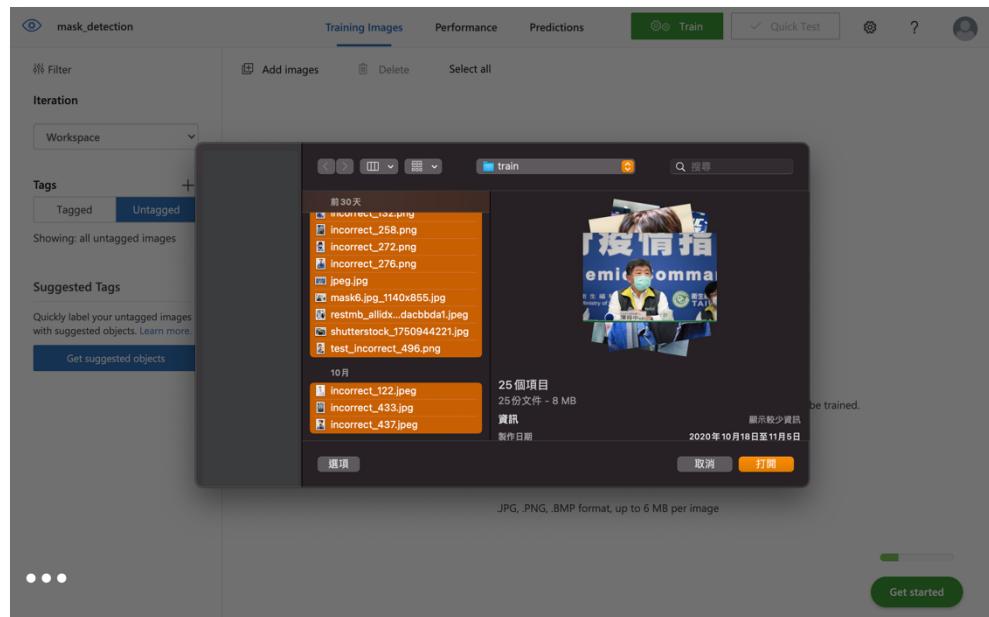


## 4. 上傳圖片並進行標記

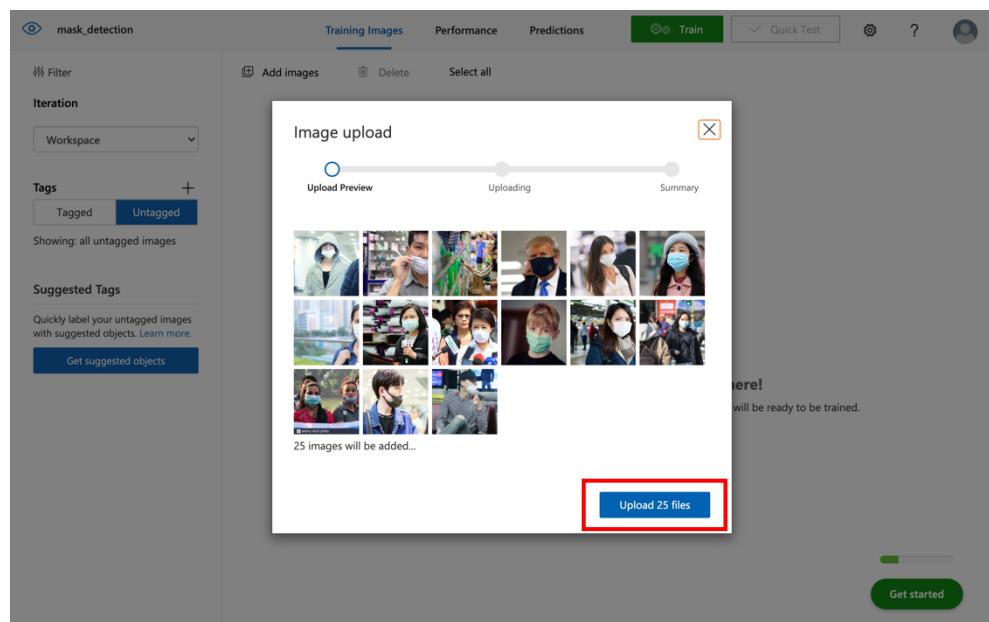
- 下載範例資料集：> 2. Custom Vision Hands-on > 資料集 > 1. 口罩
- 回到 Custom Vision 頁面，上傳圖片



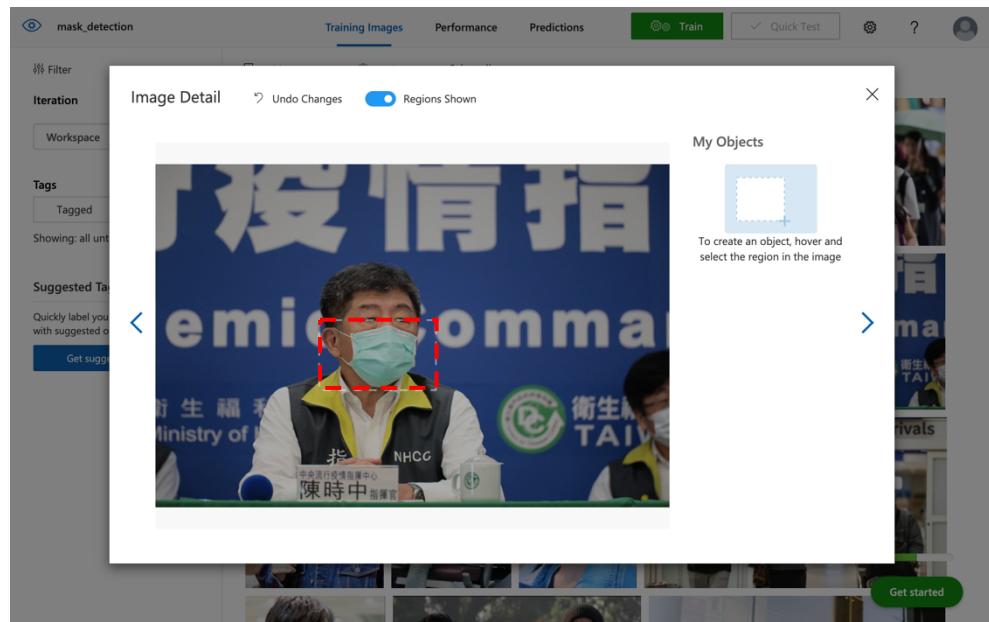
c. 選擇剛剛下載的 dataset 中，資料夾 “train” 中所有照片



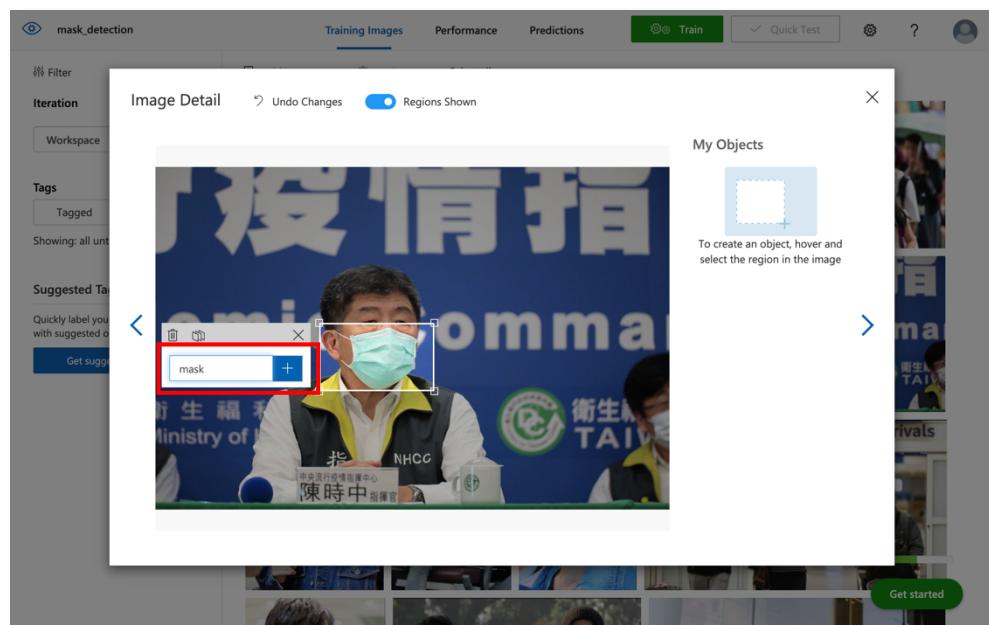
d. 上傳圖片



e. 標記圖片：框出 object 區域



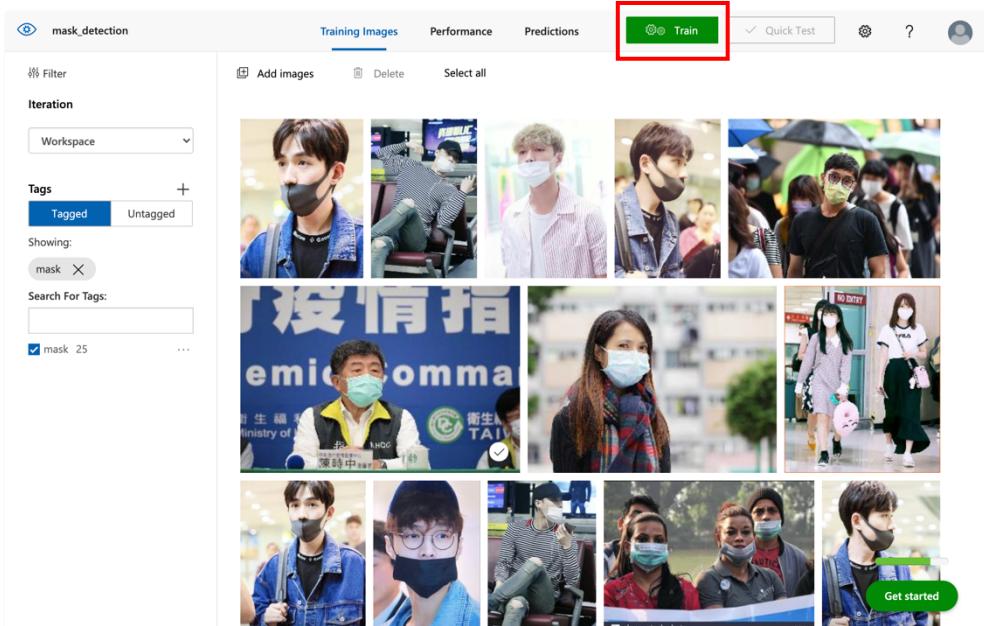
f. 加入 tag，一張圖中可標記多個 tag



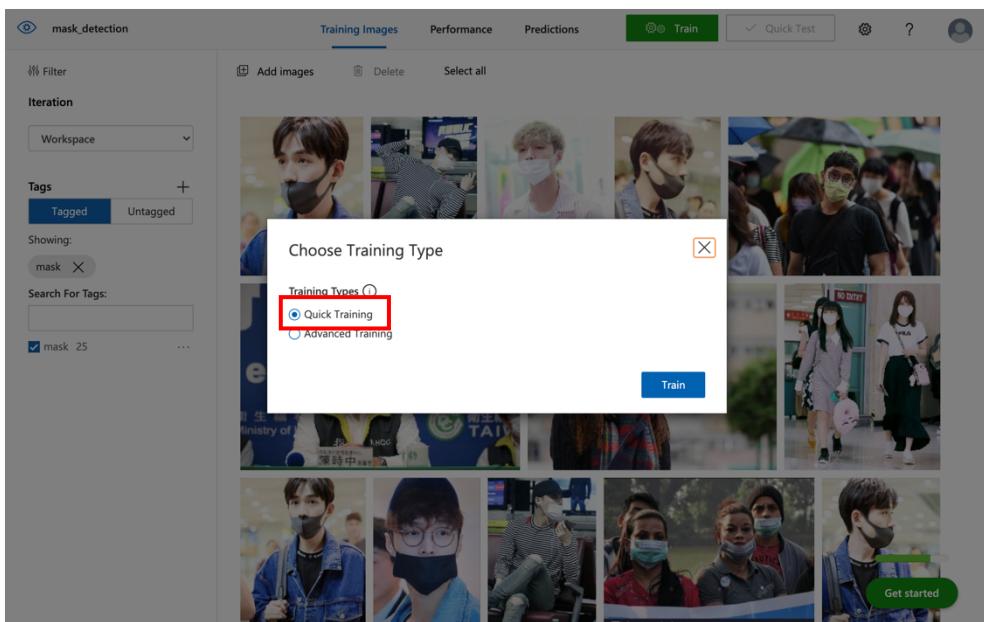
g. 繼續標記每一張圖

## 5. 訓練模型

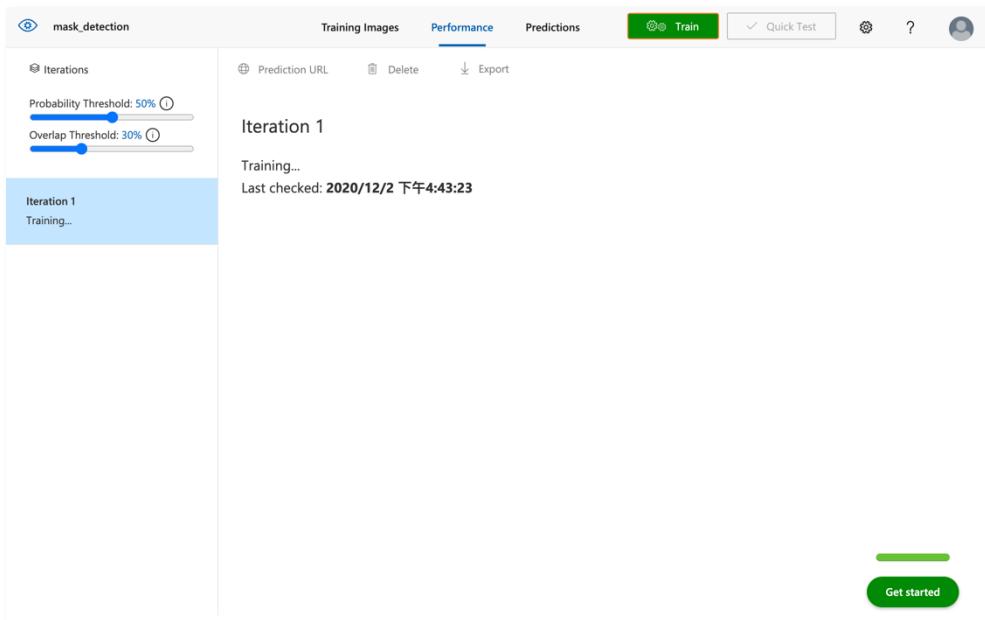
a. 點選 “Train” ，開始訓練模型



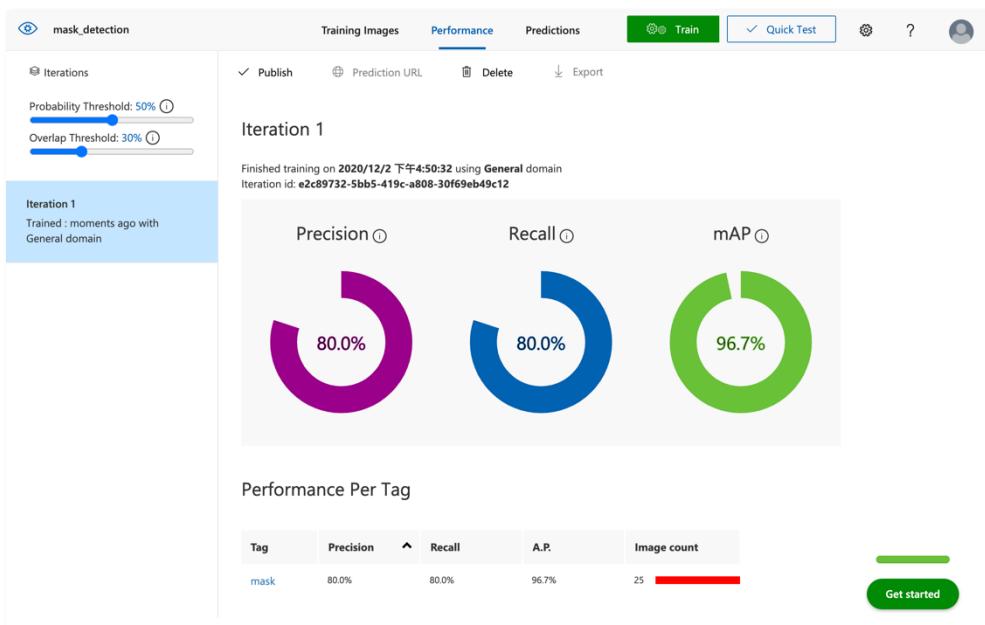
b. 選擇 Quick Training



### C. 等待模型訓練

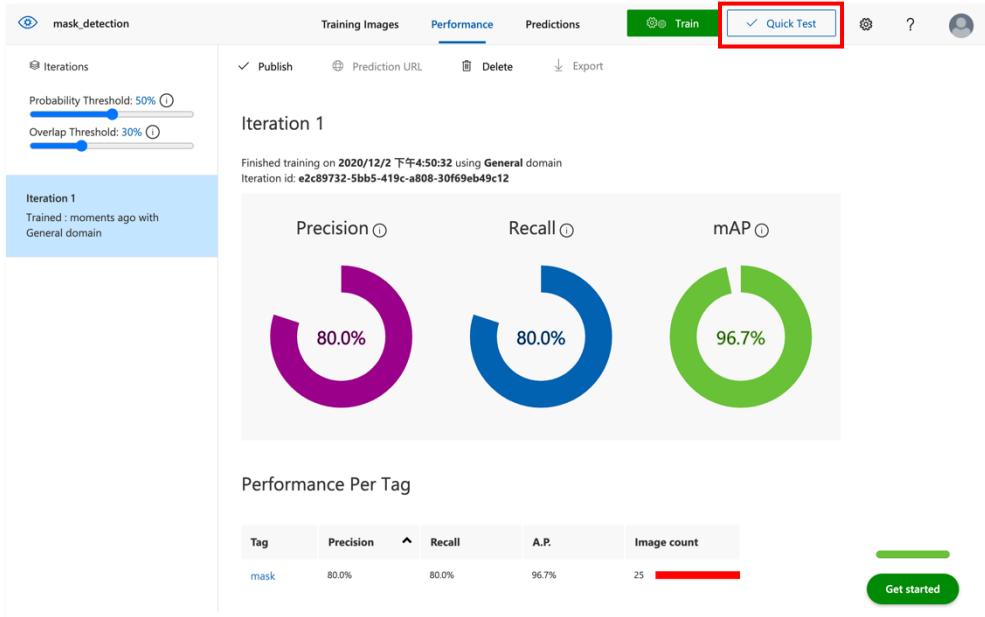


### d. 訓練完成！

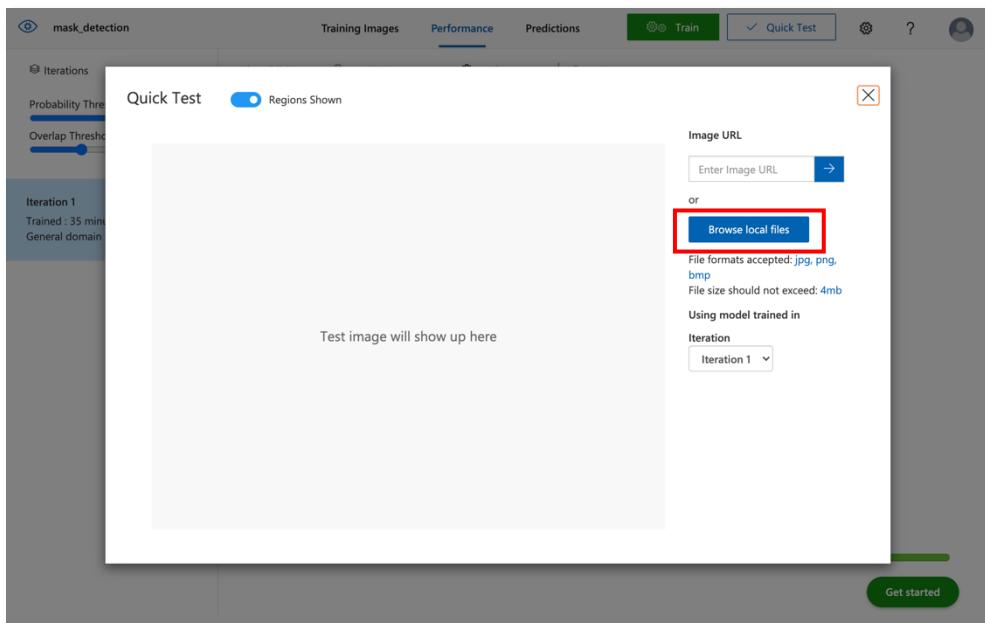


## 6. 測試圖片

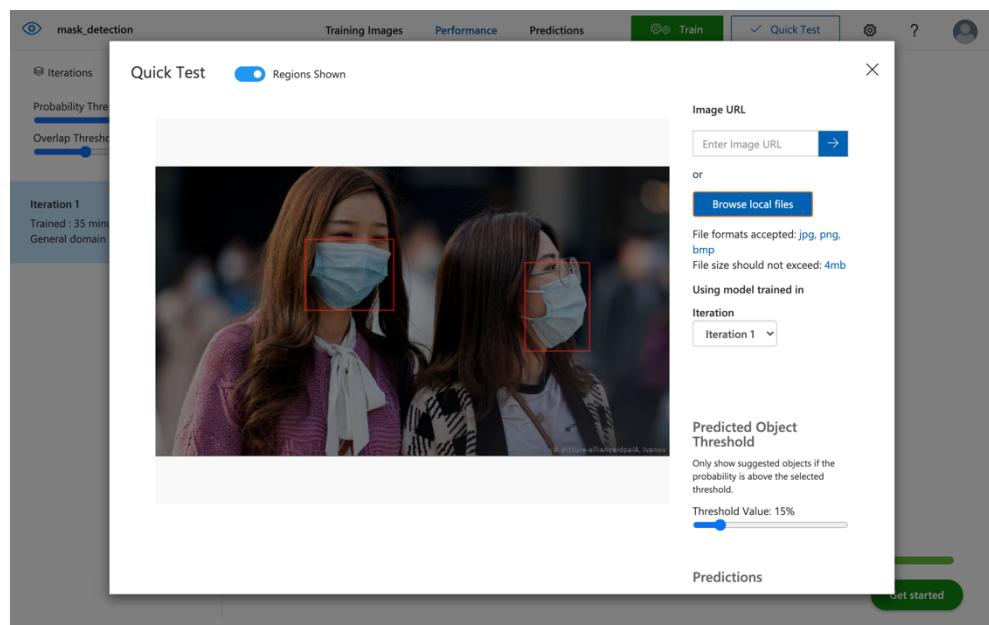
### a. 點選 “Quick Test”



### b. 上傳資料夾“test”中的圖片



### C. 成功偵測口罩



## 7. 開始訓練妳們有興趣的資料集吧！

- 參考資料集 : > 2. Custom Vision Hands-on > 資料集 > 2. 安全帽、3. 安全背心