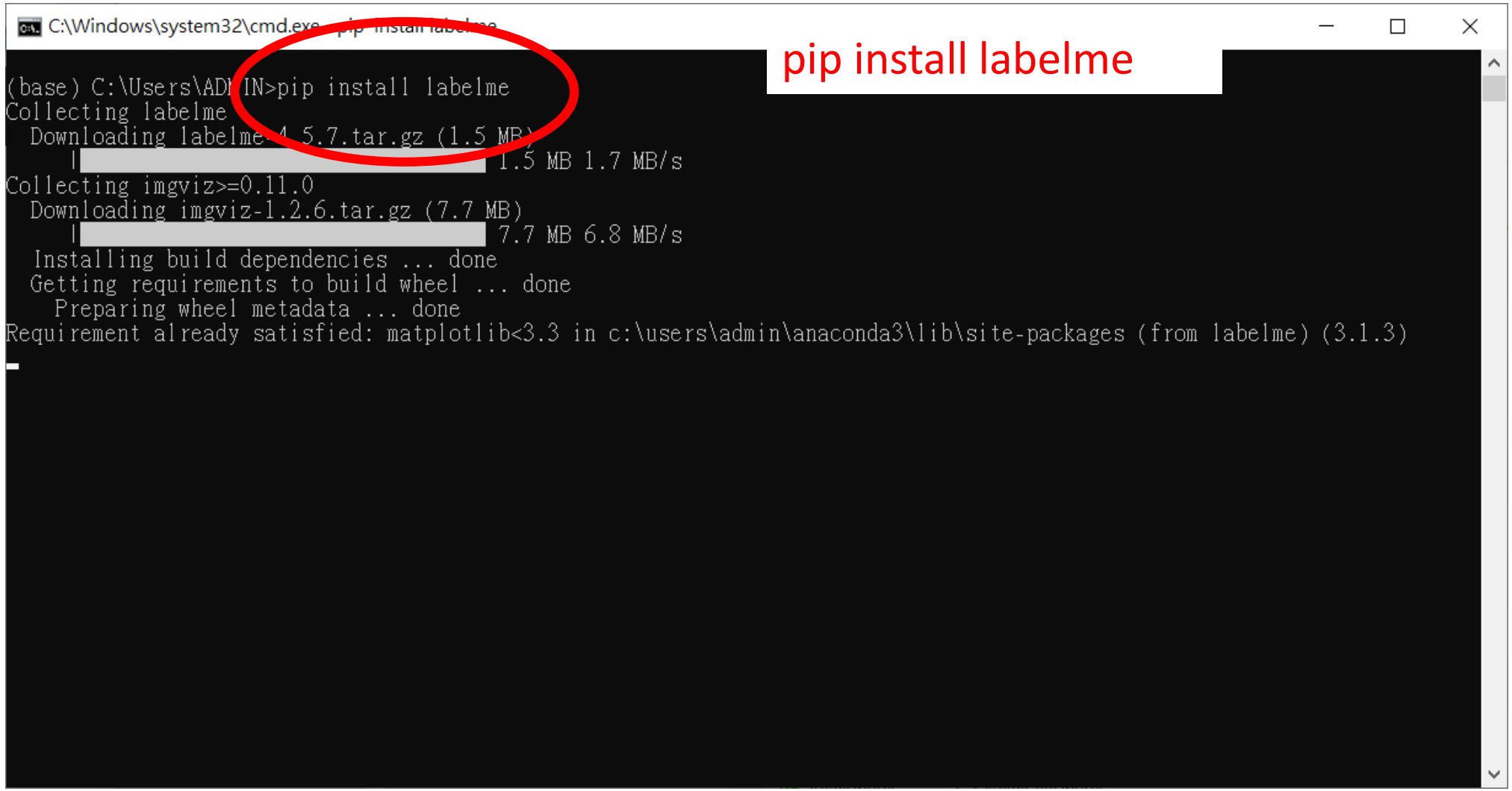
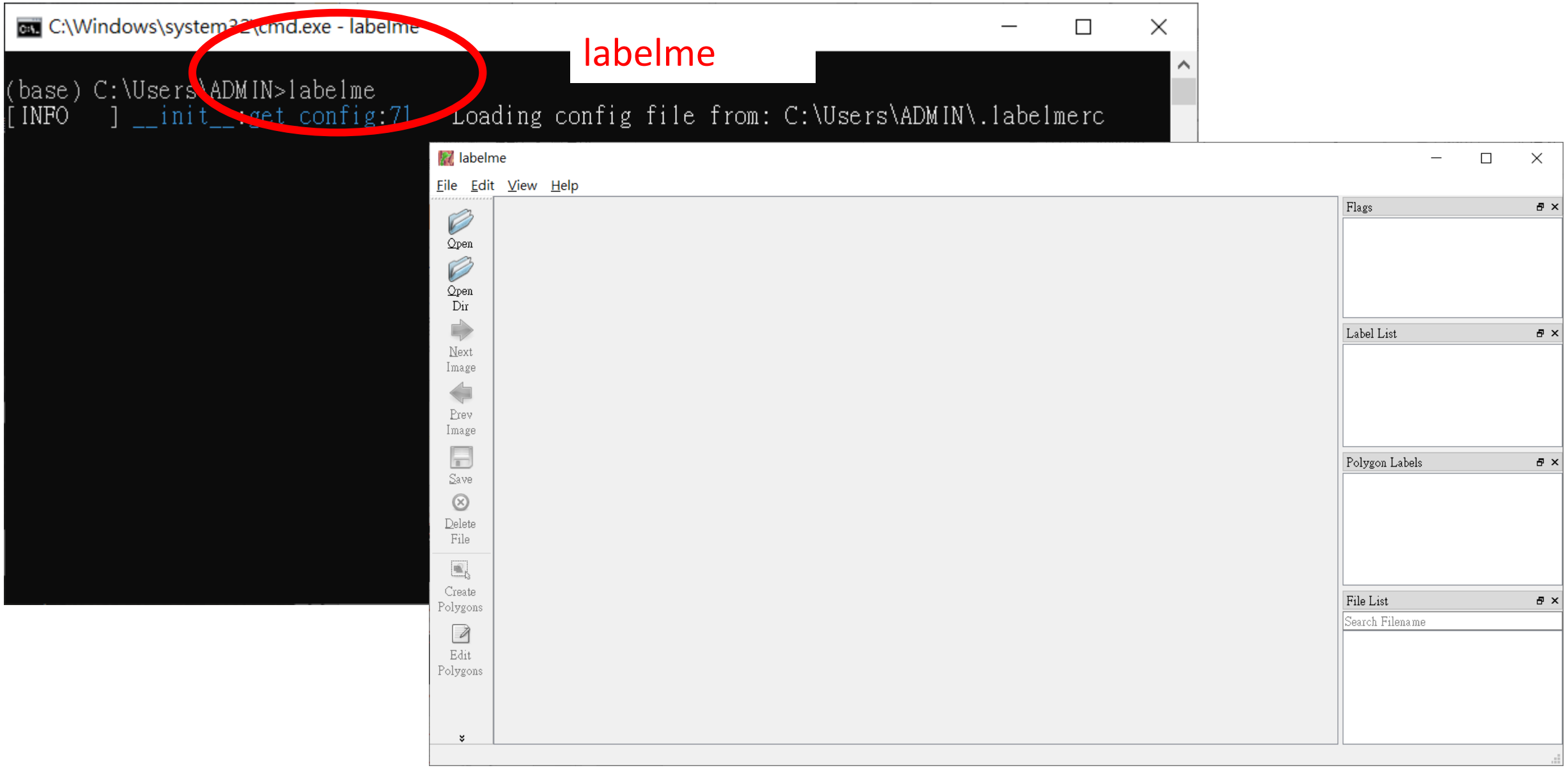
Fine tune FasterRCNN to detect our own objects

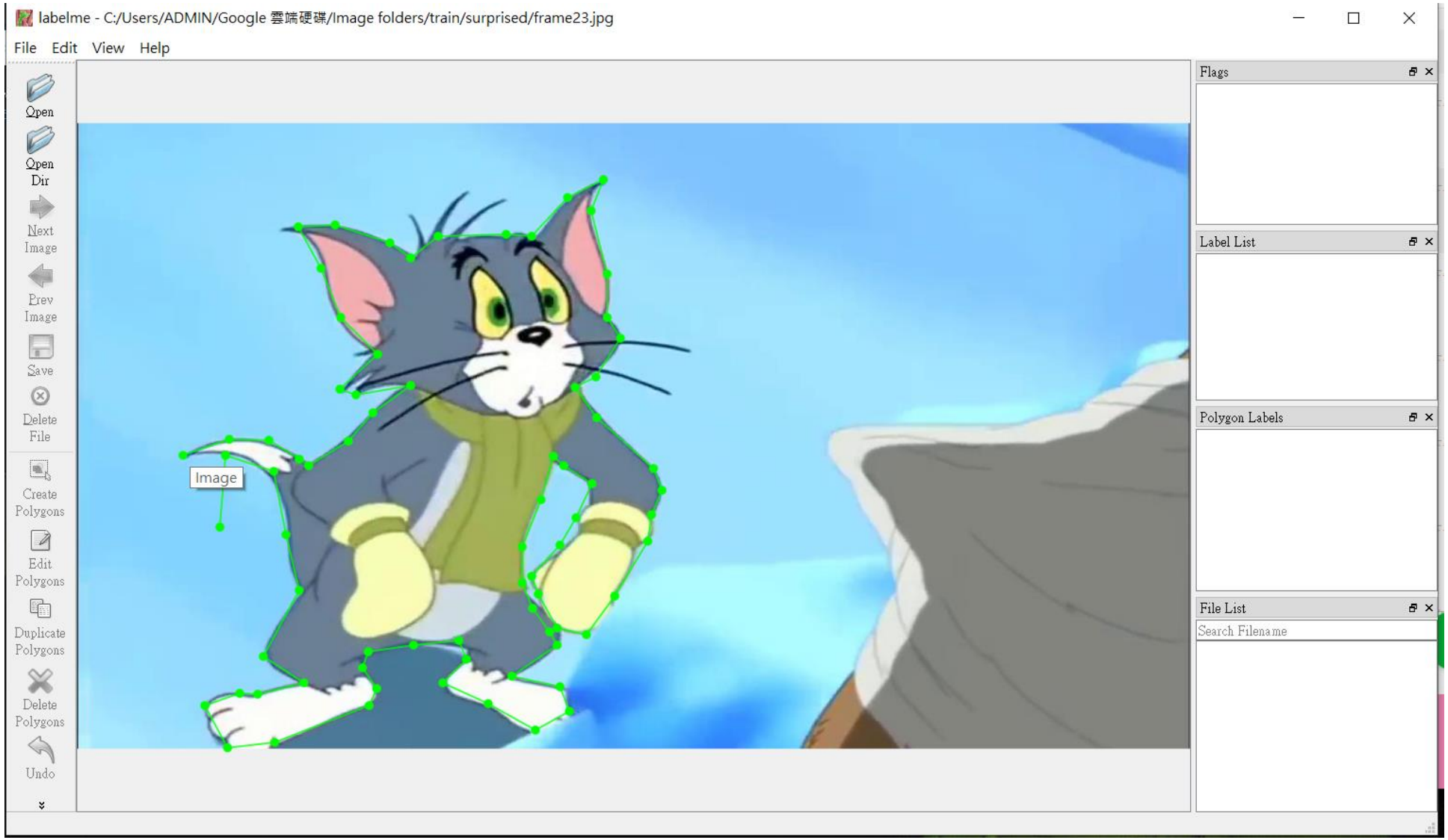
pip install labelme in your Anaconda environment



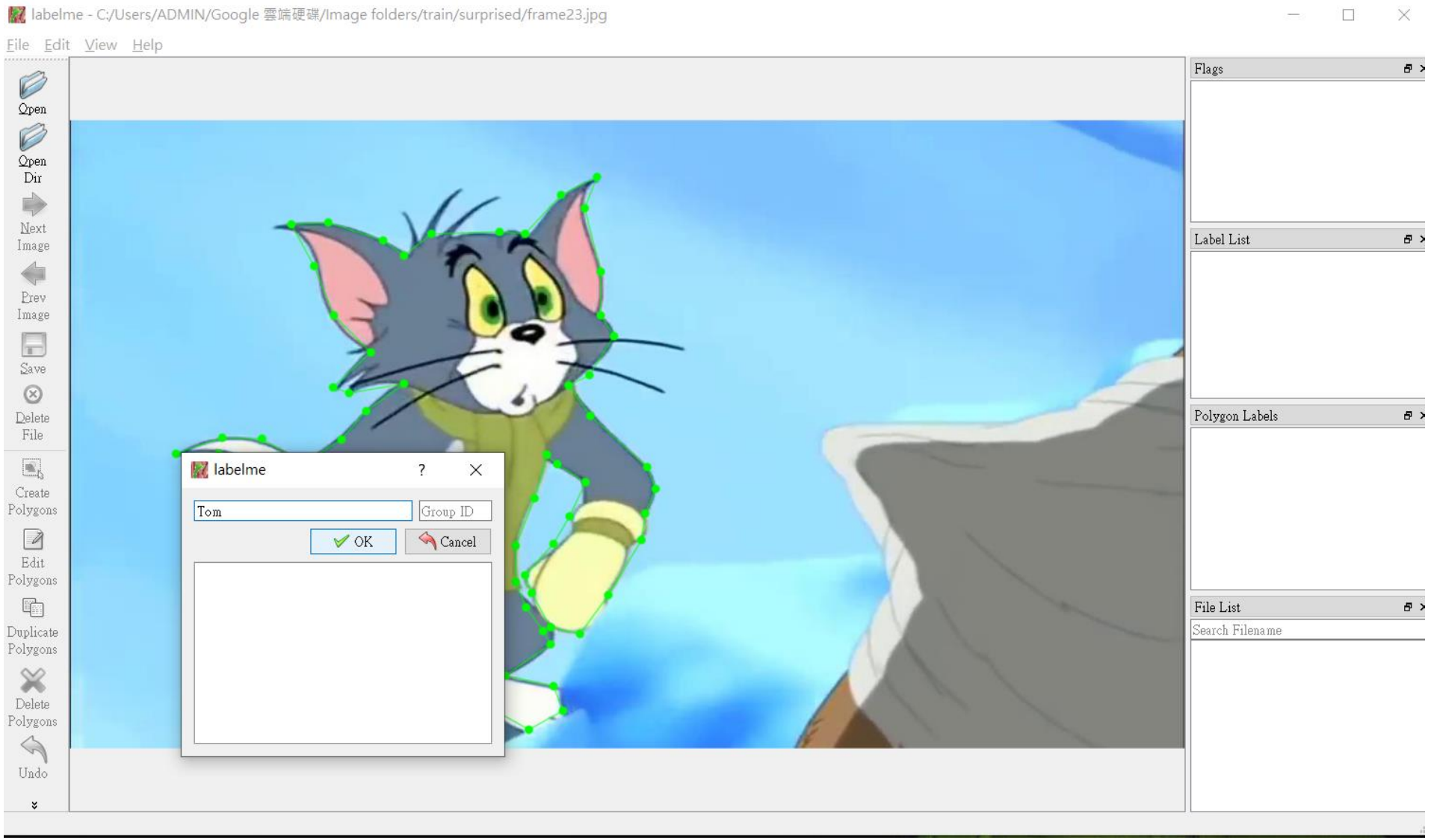
Run labelme


C:\Windows\system32\cmd.exe - labelme
labelme
(base) C:\Users\ADMIN>labelme
[INFO] __init__:get_config:71 - Loading config file from: C:\Users\ADMIN\.labelmerc
labelme
File Edit View Help
Open
Open Dir
Next Image
Prev Image
Save
Delete File
Create Polygons
Edit Polygons
Flags
Label List
Polygon Labels
File List
Search Filename

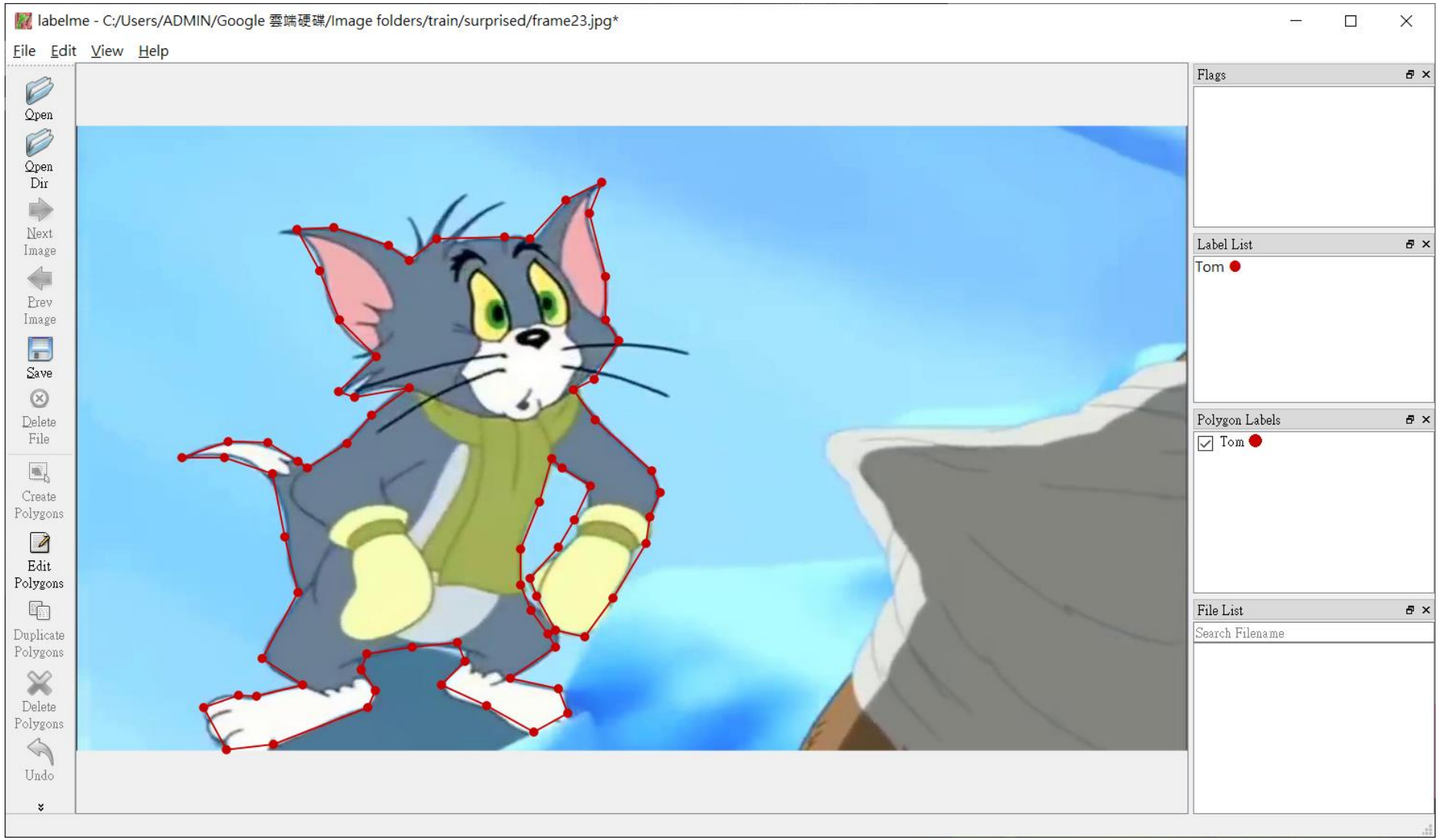
Load an image and draw boundary



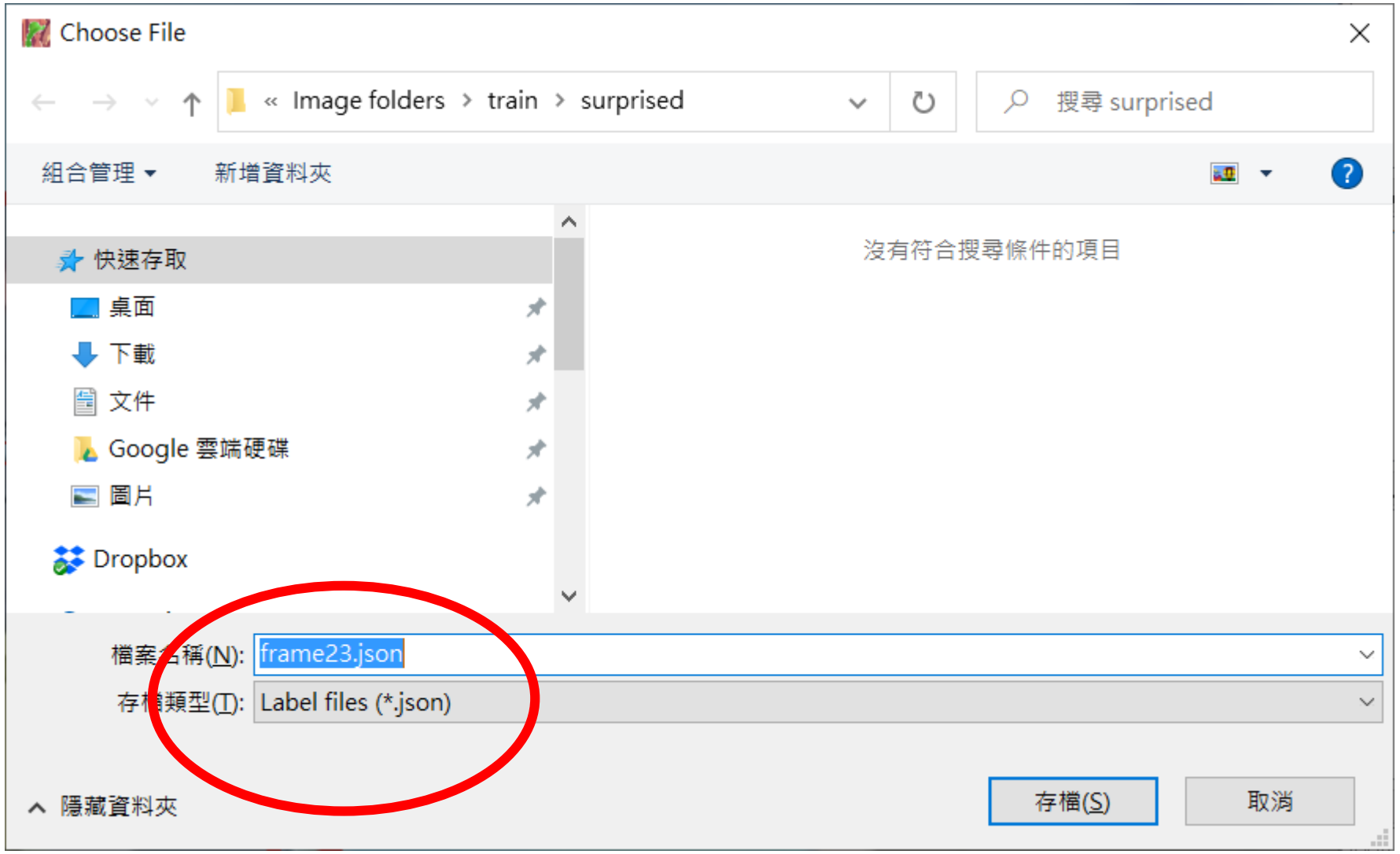
Save label


labelme - C:/Users/ADMIN/Google 雲端硬碟/Image folders/train/surprised/frame23.jpg
File Edit View Help
Open
Open Dir
Next Image
Prev Image
Save
Delete File
Create Polygons
Edit Polygons
Duplicate Polygons
Delete Polygons
Undo
Flags
Label List
Polygon Labels
File List
Search Filename
labelme
Tom
Group ID
OK
Cancel

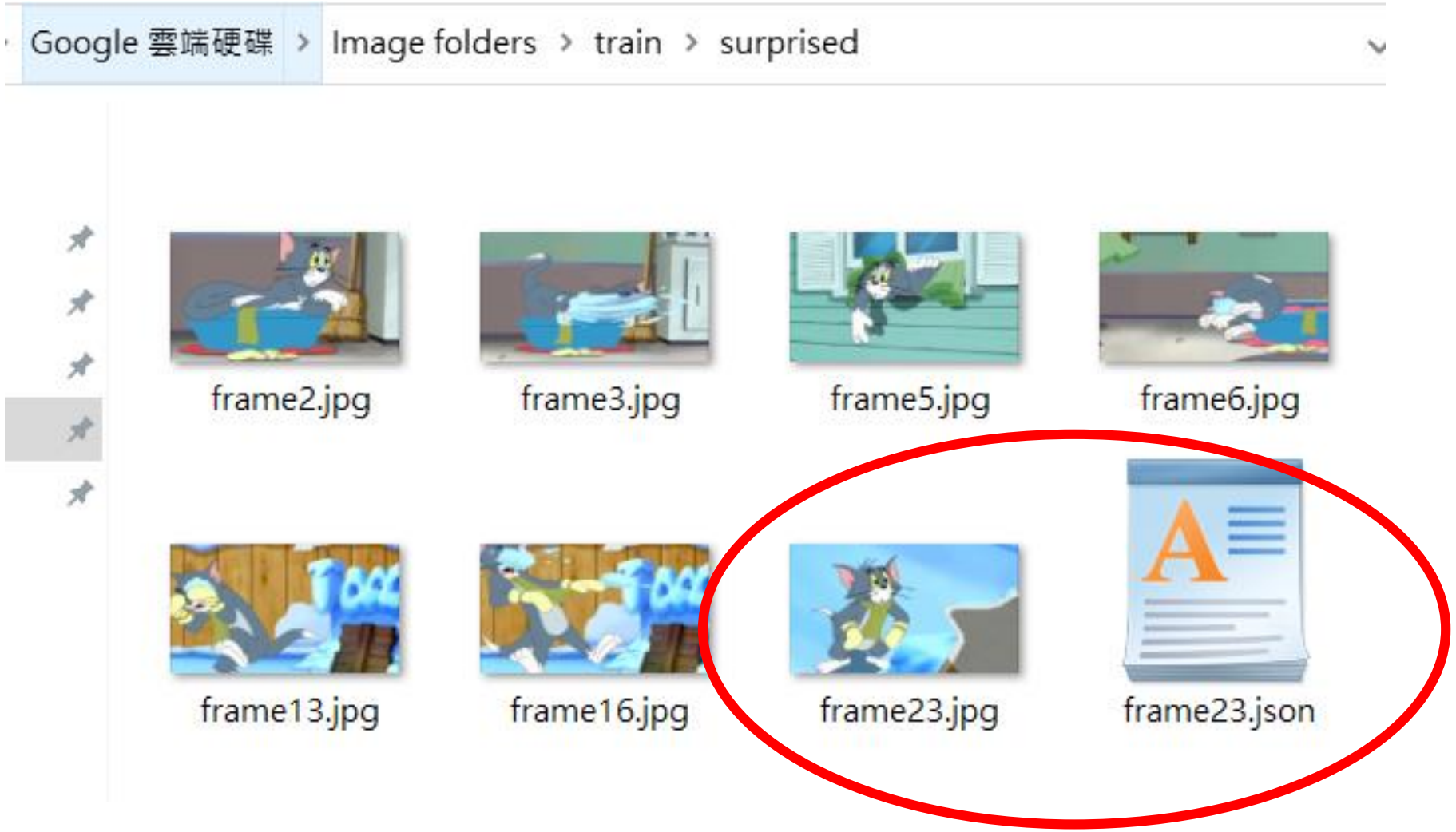
Saved label


labelme - C:/Users/ADMIN/Google 雲端硬碟/Image folders/train/surprised/frame23.jpg*
File
Edit
View
Help
Open
Open Dir
Next Image
Prev Image
Save
Delete File
Create Polygons
Edit Polygons
Duplicate Polygons
Delete Polygons
Undo
Flags
Label List
Tom
Polygon Labels
Tom
File List
Search Filename

Save boundary to json file



Saved json file

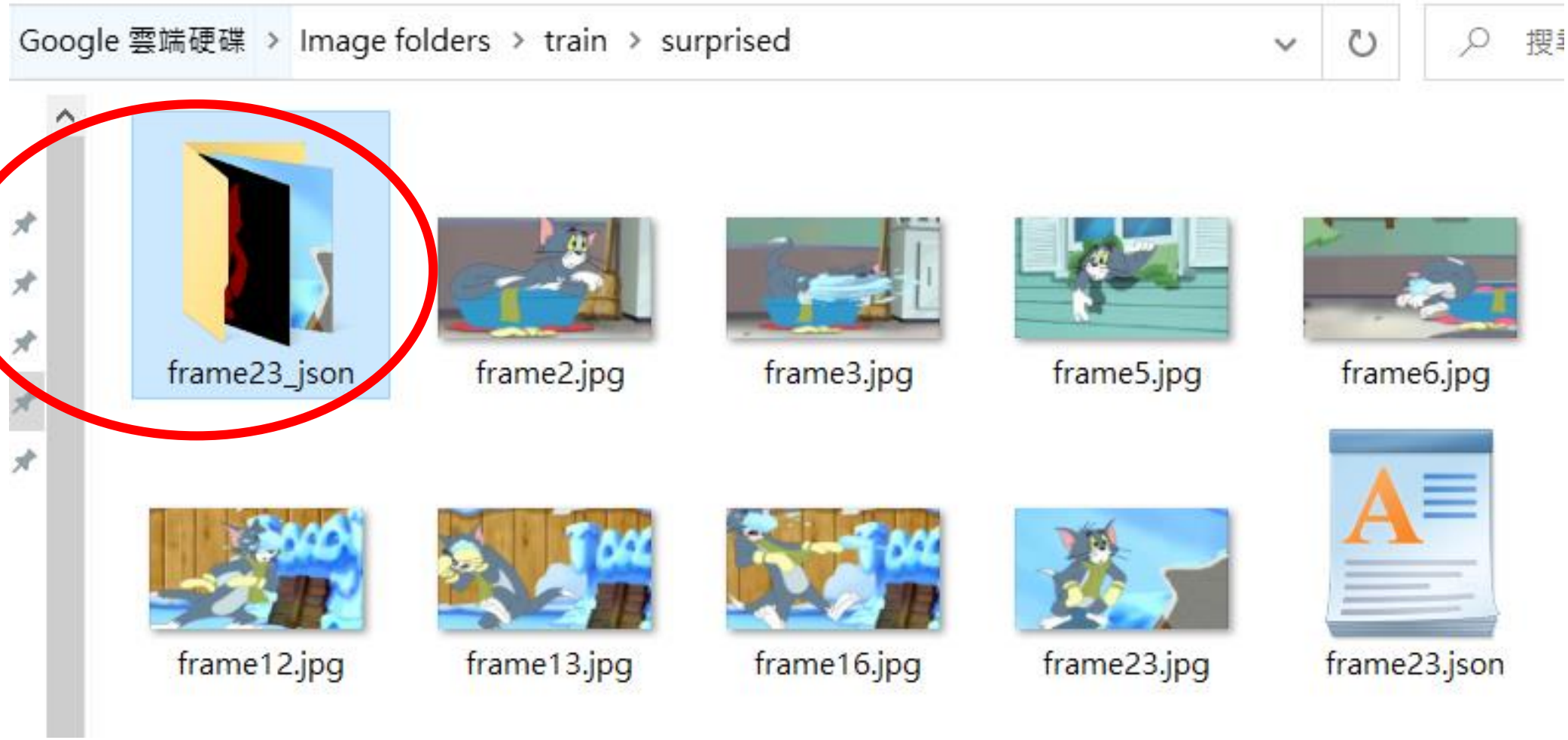


Convert json file to mask image

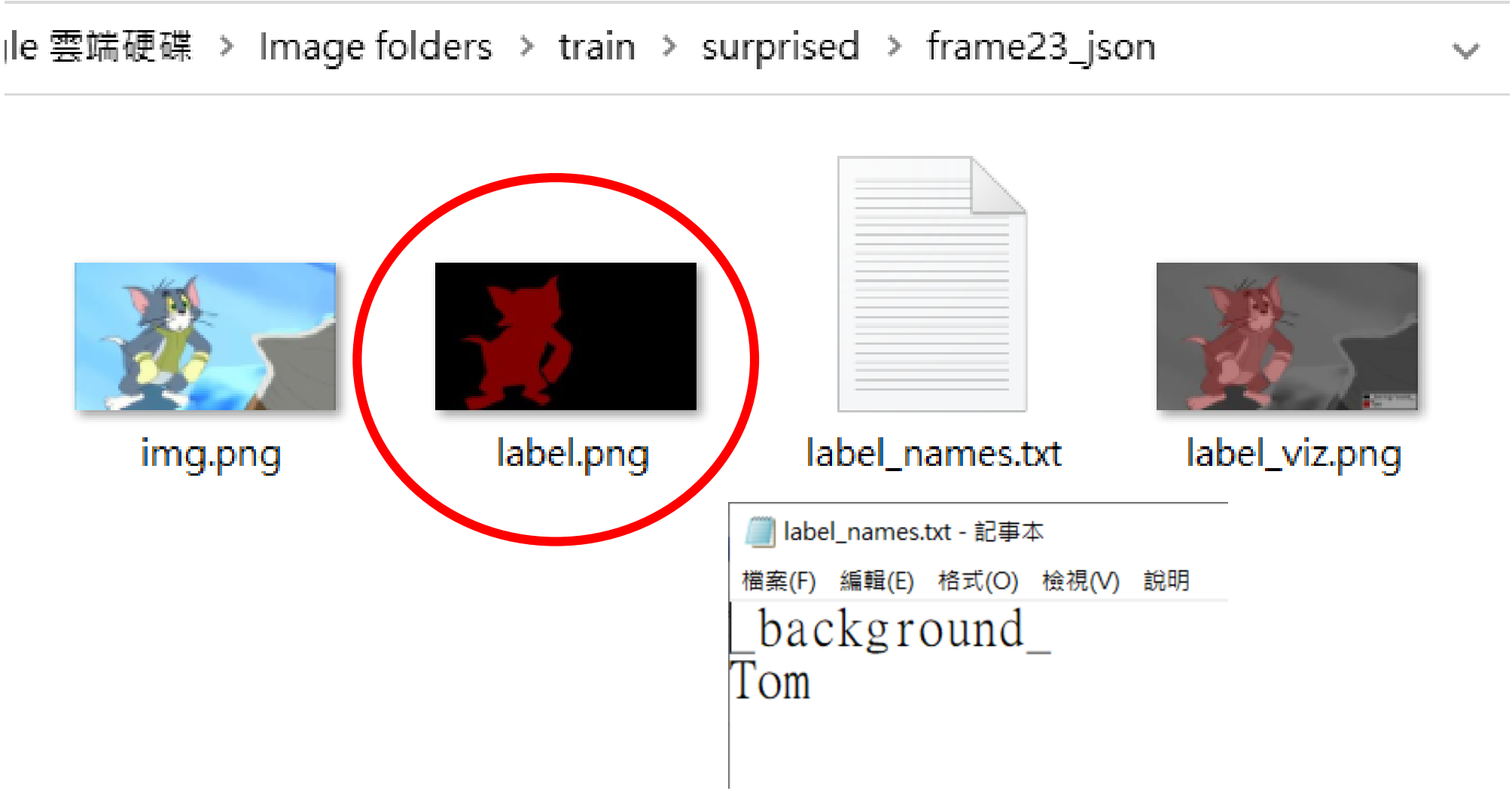
cd to the folder where you save the *.json file
Labelme_json_to_dataset *.json

```
(base) C:\Users\ADMIN>cd C:\Users\ADMIN\Google 雲端硬碟\Image folders\train\surprised

(base) C:\Users\ADMIN\Google 雲端硬碟\Image folders\train\surprised>labelme_json_to_dataset frame23.json
[WARNING] json_to_dataset:main:16 - This script is aimed to demonstrate how to convert the JSON file to a sin
gle image dataset.
[WARNING] json_to_dataset:main:20 - It won't handle multiple JSON files to generate a real-use dataset.
[INFO   ] json_to_dataset:main:77 - Saved to: frame23_json

(base) C:\Users\ADMIN\Google 雲端硬碟\Image folders\train\surprised>
```

Mask images are saved in a folder



Mask image


le 雲端硬碟 › Image folders › train › surprised › frame23_json
img.png
label.png
label_names.txt
label_viz.png
label_names.txt - 記事本
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明
background
Tom

Save RGB and mask images on your Google drive

My Drive > Object Detection Image Folder

Name

mask

pic

My Drive > Object Detection Image Folde > pic

Files

0001.jpg

0002.jpg

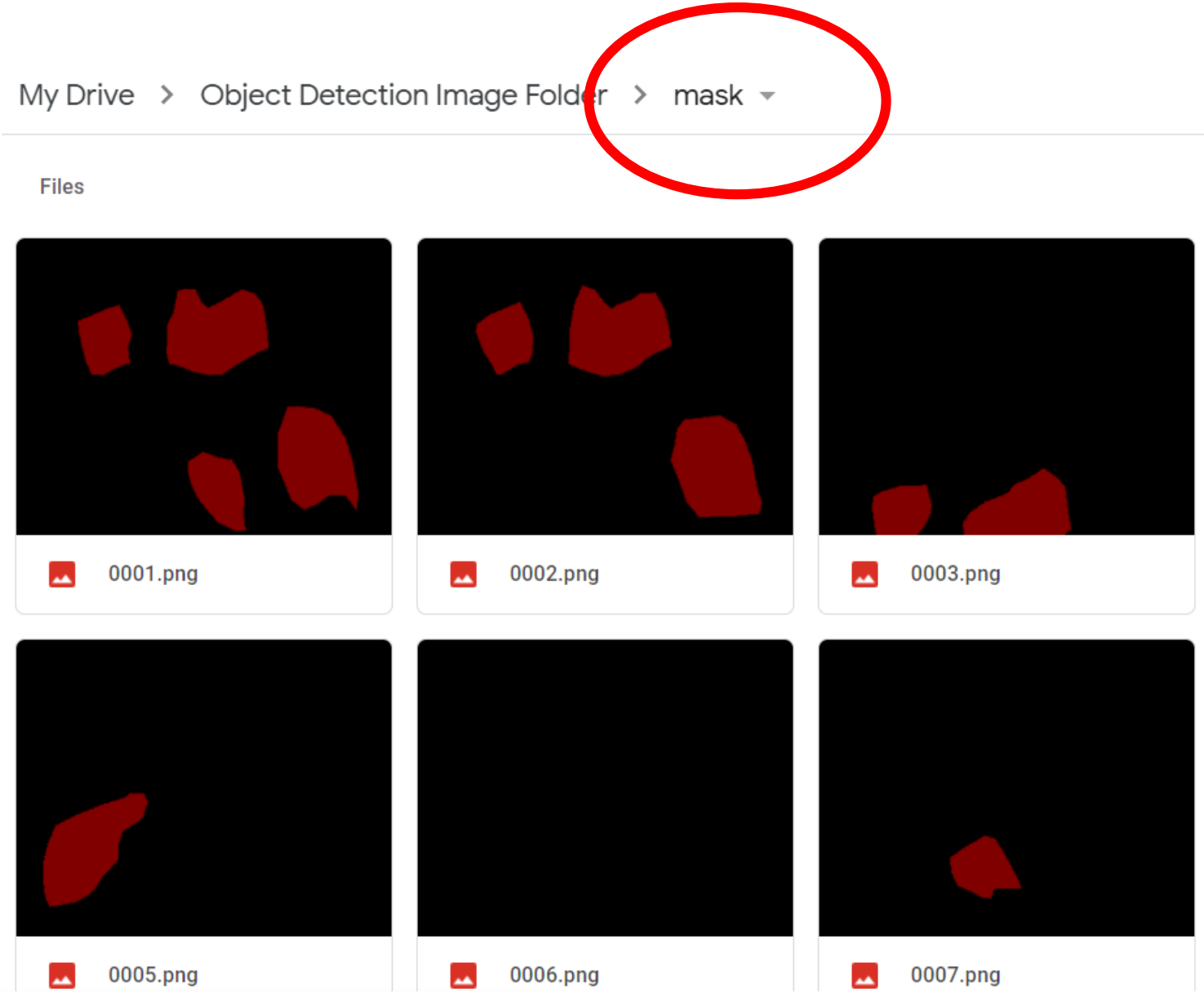
0003.jpg

0005.jpg

0006.jpg

0007.jpg

Save RGB and mask images on your Google drive



Fine tune FasterRCNN

FasterRCNN(3) Fine_tune.ipynb

HW4 – Object detector

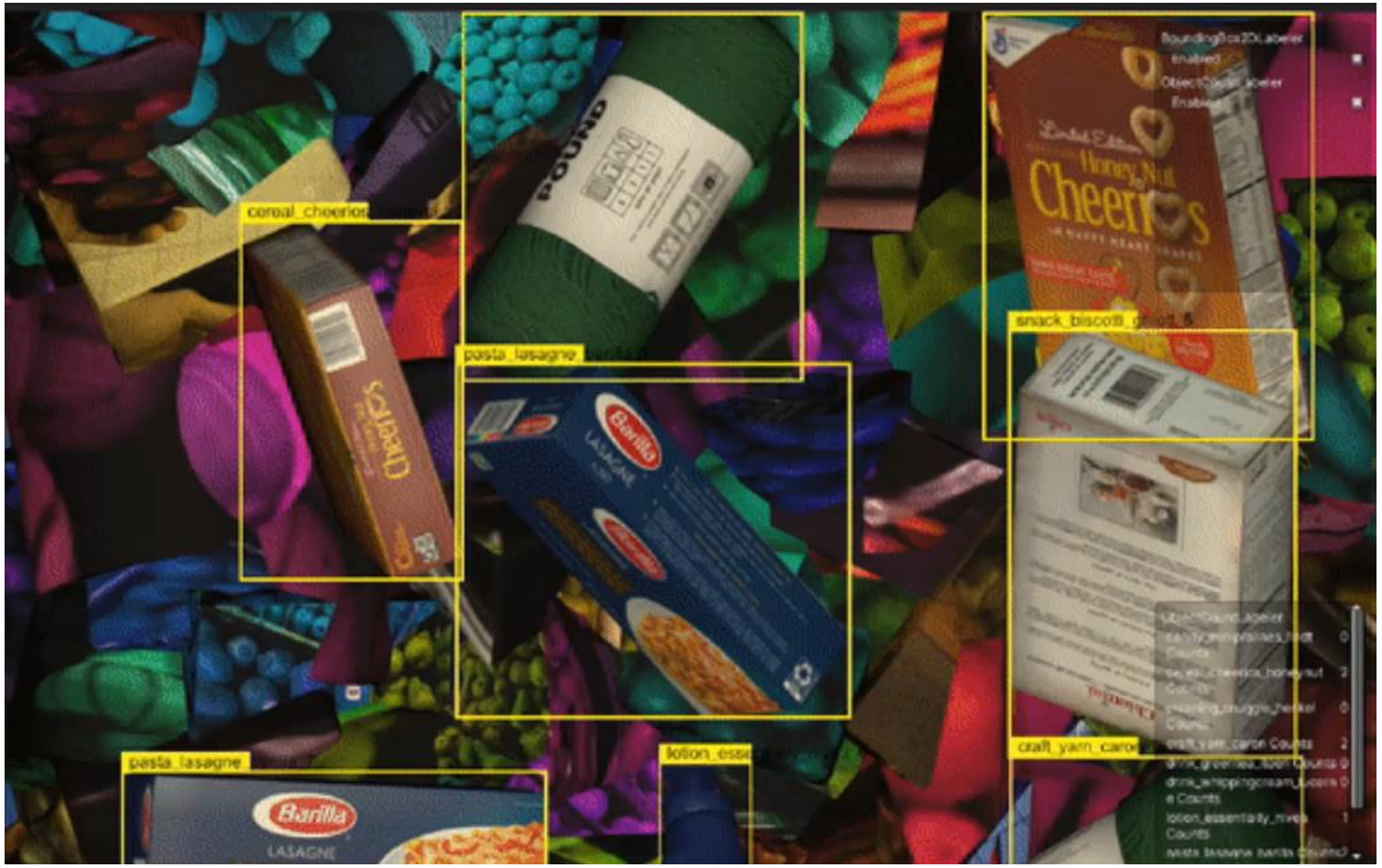
Fine-tune pre-trained FasterRCNN to detect your own objects.

Automatically labelled photo-realistic images

Accelerate computer vision model training with the synthetic image data generated using Unity's perception package

https://unity.com/products/computer-vision

Unity perception package



https://github.com/Unity-Technologies/com.unity.perception