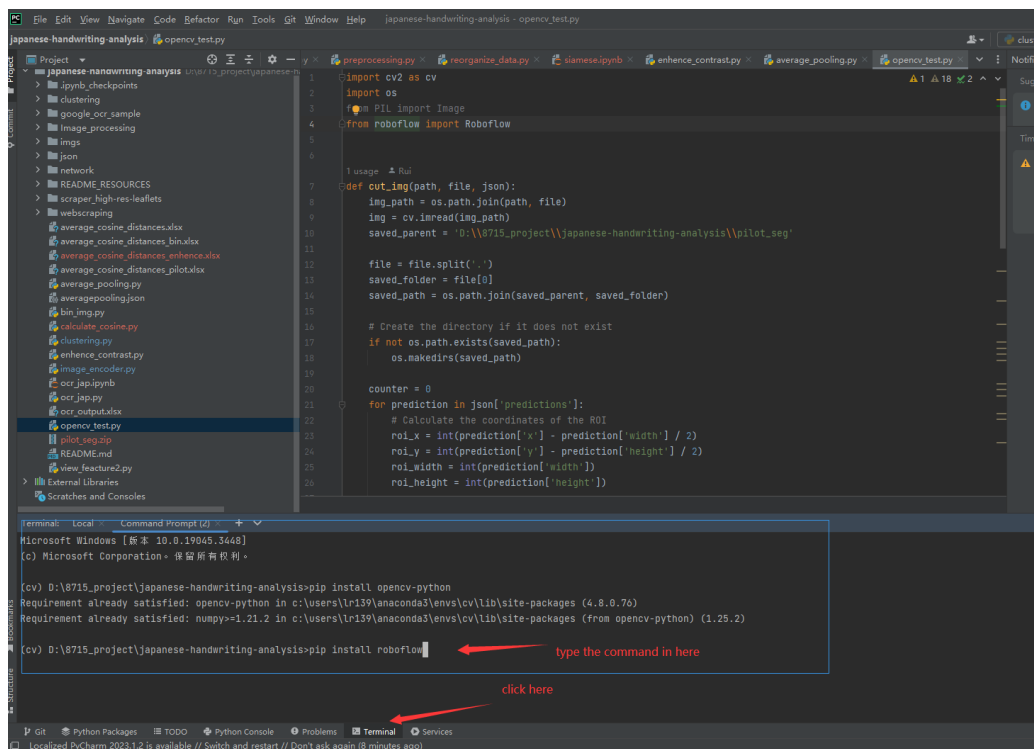


This project is developed based on Python 3.9. Therefore, when downloading Python, please ensure its version is  $\geq 3.9$ . You can download Python from this link: <https://www.python.org/downloads/>  
We highly recommend using a Python IDE to run our project. We suggest using PyCharm. You can download it from this link: <https://www.jetbrains.com/pycharm/>

1;

## Word Segmentation:

- Use the following commands to install the required libraries  
`pip install opencv-python`  
`pip install roboflow`



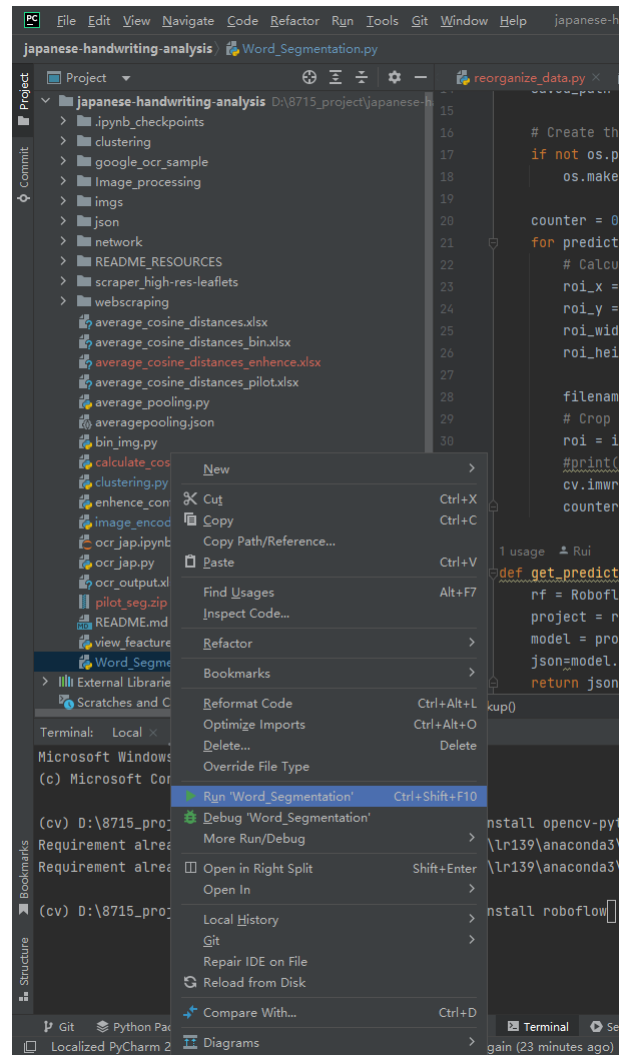
- Open the Word Segmentation.py file. In this file, we will invoke the model from RoboFlow to implement Word Segmentation. What you need to modify are:

- Line 10's saved\_parent: This is the path where the output images will be saved.
- Line 42's path: This is the path for the input images.
- Line 36's api key: Refer to the RoboFlow section for this

- The path for the input images should be in the following format:

```
-japanese-handwriting-analysis
----input_image_folder
-----img1.jpg
-----img2.jpg
-----...jpg
----other_folder
```

----Word\_Segmentation.py

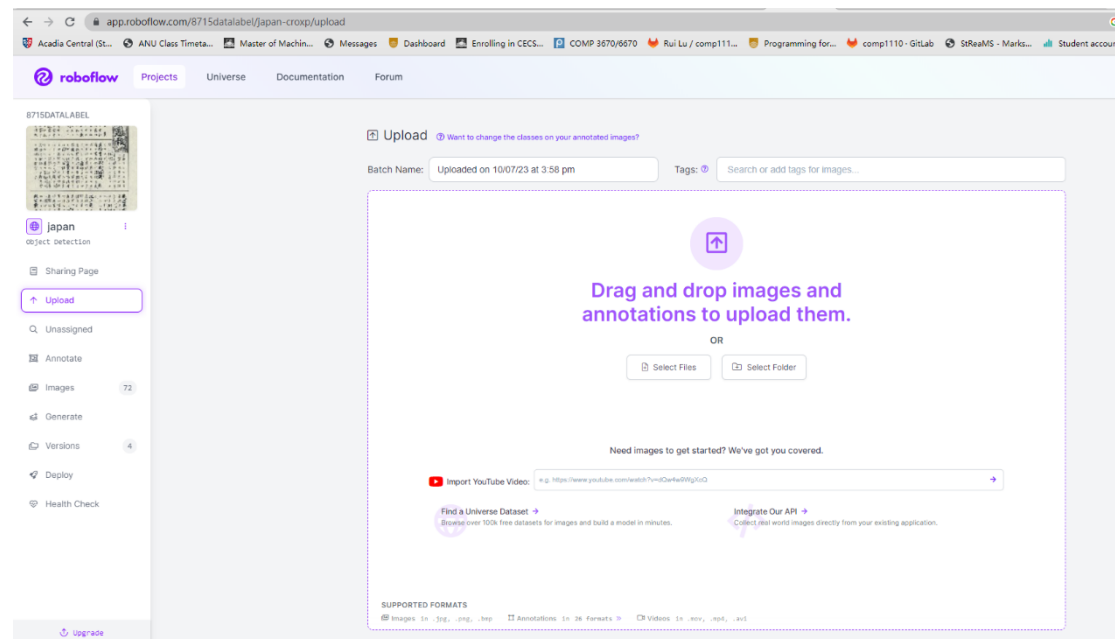


- In the left navigation pane, select the file and right-click, then choose Run

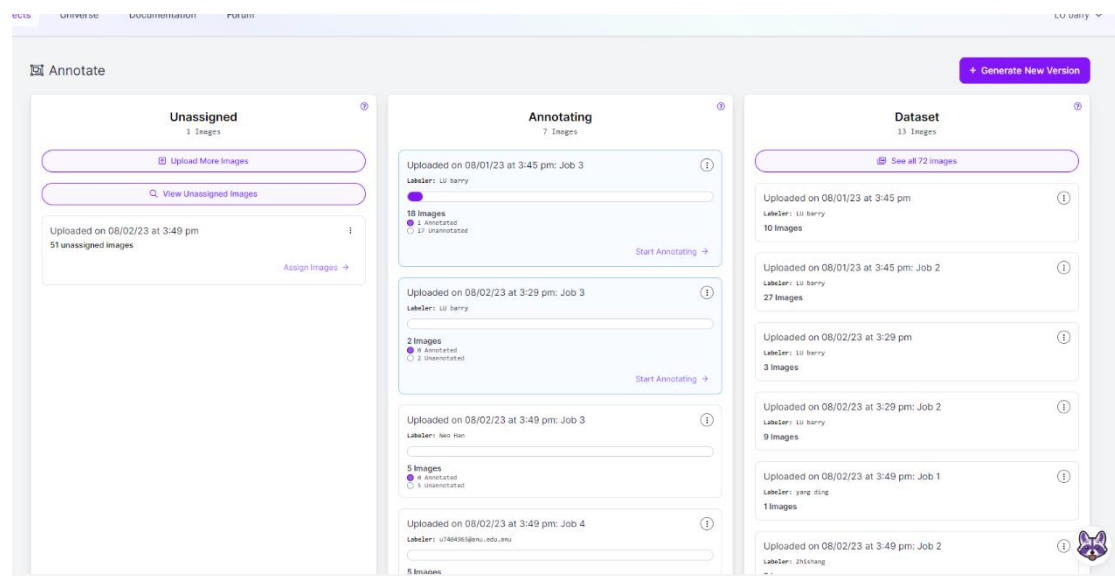
## 2: RoboFlow

RoboFlow offers an integrated platform for annotating data, training models, and deploying models. Our current RoboFlow project is nearing its API call limit. Therefore, you might consider creating a new RoboFlow project and transferring the annotated data into it. The annotated data can be found on Google Drive under the filename 'japan.v5i.yolov8'.

Train model using RoboFlow:



First, open your RoboFlow project, then go to the 'upload' page to upload your dataset



If you want to annotate more data, go to the 'annotated' page. Click on 'assign image' to allocate the images to yourself or your team members. Then, click 'start annotating'. After completing the annotations, click on 'generate new version'.

+

Generate New Version

VERSIONS

2023-08-07 11:21am  
v5 Aug 7, 2023

2023-08-07 11:03am  
v4 Aug 7, 2023

2023-08-02 7:49pm  
v3 Aug 2, 2023

2023-08-01 4:16pm  
v1 Aug 1, 2023

Generating New Version

Prepare your images and data for training by compiling them into a version.  
Experiment with different configurations to achieve better training results.

✓

Source Images

Images: 72

Classes: 1

Unannotated: 0

Edit

✓

Train/Test Split

Training Set: 50 images

Validation Set: 9 images

Testing Set: 13 images

3

Preprocessing

What can preprocessing do?

Decrease training time and increase performance by applying image transformations to all images in this dataset.

Auto-Orient

Edit

×

Resize

Stretch to 640×640

Edit

×

+

Add Preprocessing Step

Continue

Follow the instructions on this page, and then you can train your model.

• A Python script using the Roboflow SDK.

Below, we have instructions on how to use our deployment options.

Hosted API

My Machine

Luxonis OAK

Enterprise

Python

cURL

Javascript

Swift

.NET

Infer on Local and Hosted Images

To install dependencies, `"pip install roboflow"`

```

from roboflow import RoboFlow
rf = RoboFlow(api_key="KHZmYcucQKFOHB6wFL17")
project = rf.workspace().project("japan-croxp")
model = project.version(5).model

# infer on a local image
print(model.predict("your_image.jpg", confidence=40, overlap=30).json())

# visualize your prediction
# model.predict("your_image.jpg", confidence=40, overlap=30).save("prediction.jpg")

# infer on an image hosted elsewhere
# print(model.predict("URL_OF_YOUR_IMAGE", hosted=True, confidence=40, overlap=30).json())

```

api key

model version

Use with Snap AR's Lens Studio

Export and use this model to create custom lenses within Snap AR's Lens Studio. [Read More](#)

Roboflow Documentation

Look through our full documentation for more information and resources on how to utilize this model.

Example Web App

Use this model with a full fledged web application that has all sample code included.

Video Inference Script

Our example script performs inference on a video file with Roboflow Infer.

Deploy to NVIDIA Jetson

Perform inference at the edge with a Jetson via our Docker

After completing the training, click 'deploy', and you can then invoke your model. You can modify the content in Word Segmentation.py based on the Python code they provide.

### 3: Clustering