How to use this project

This guide will help you understand how to use this set of script that we have developed for months.

## ****Preparation****

### First of all, we need to install Python 3.9.13

from <https://www.python.org/downloads/release/python-3913/>

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Scroll down to the bottom of the page and select a good version for your system😊

### Install an IDE

You can run Python code directly through terminal, but I would recommend using an IDE instead. I’d prefer VS Code (<https://code.visualstudio.com/Download>) to run our project.

Please follow this link (<https://code.visualstudio.com/docs/languages/python>) to Section Run Python code to check if python can run correctly.

*If you encounter any problem during this step, don’t hesitate to email Yuhan about your questions.*

### File Structures

Here is a list of files in the repository:

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There are 4 python script we are going to run.

1. read\_article\_from\_xls\_training\_set.py
2. train\_regression\_model.py
3. read\_mhtml\_to\_object.py
4. score\_object\_using\_trained\_model.py

### Open this project in VS Code

Once you opened VS Code, you will see a window like this:

电脑屏幕的截图

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Click “File – Open Folder” to select the folder that contains the entire project.

If the project loaded successfully, the window is like this:

电脑的屏幕截图

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### Install dependencies

In terminal, enter the command below:

*pip install -r requirements.txt*

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## Train a machine learning model using scored articles (Training Set)

### Pre-process spreadsheet

Open read\_article\_from\_xls\_training\_set.py. To run this script, we need a spreadsheet that contains all scored data, and put it in folder “data”.

Please make sure the file only contains one spreadsheet.

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After excel file is placed in data folder, modify the path in Line 23 to the filename you are using for training. Then, make sure anything inside a square bracket is corresponding to an exact column name in the spreadsheet.

图形用户界面, 文本, 应用程序

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Now it’s time to run the script! You can either hit F5 on keyboard or click “Run – Start Debugging”.

图形用户界面, 应用程序

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This script will take some time to complete, because it will extract features for each article by our tagging\_core. *Script that extracts features always takes time.*

### Train the model

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These json files are what we’ve got from the previous step. We are going to use them to train our model.

Open train\_regression\_model.py and run. It will train a regression model and save it as “AdaBoostRegressor.joblib” in the folder. You will see a score for this model printed in the terminal. You can run this multiple times to get a score you like, and then proceed to the next step.

We are going to use this model to evaluate everything we downloaded.

## Evaluate all articles

### Read articles from mhtml files

Open read\_mhtml\_to\_object.py and run. It will prompt a window for you to select a folder. You can select any folder that contains mhtml files, or even a folder contains a folder that have mhtml files in it. This script will recursively check mhtml files in the select folder, and generate a json file for each mhtml in the same folder.

We will use these json files later.

Example:

Double click on the folder

电脑萤幕截图

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Make sure folder name is in the box, then confirm

电脑萤幕的截图

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This is just an example. You can select each country separately for divided tasks.

This step takes a lot of time because of feature extraction. If the script terminated by accident, just run again with the same folder. It will automatically continue the work😊

Also, we can split the task by folders (or countries, because we have separate folders for countries) for everyone in the group.

### Evaluate

Open score\_object\_using\_trained\_model.py and run.

Select a same folder as 3.1 (or any folder with processed article json files). It will go through everything and save results to [mhtml\_filename].csv. These CSV files will in the same folder as target mhtml file.

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Mhtml -> json -> csv

Now you can use scores in csv files to do anything you like😊