

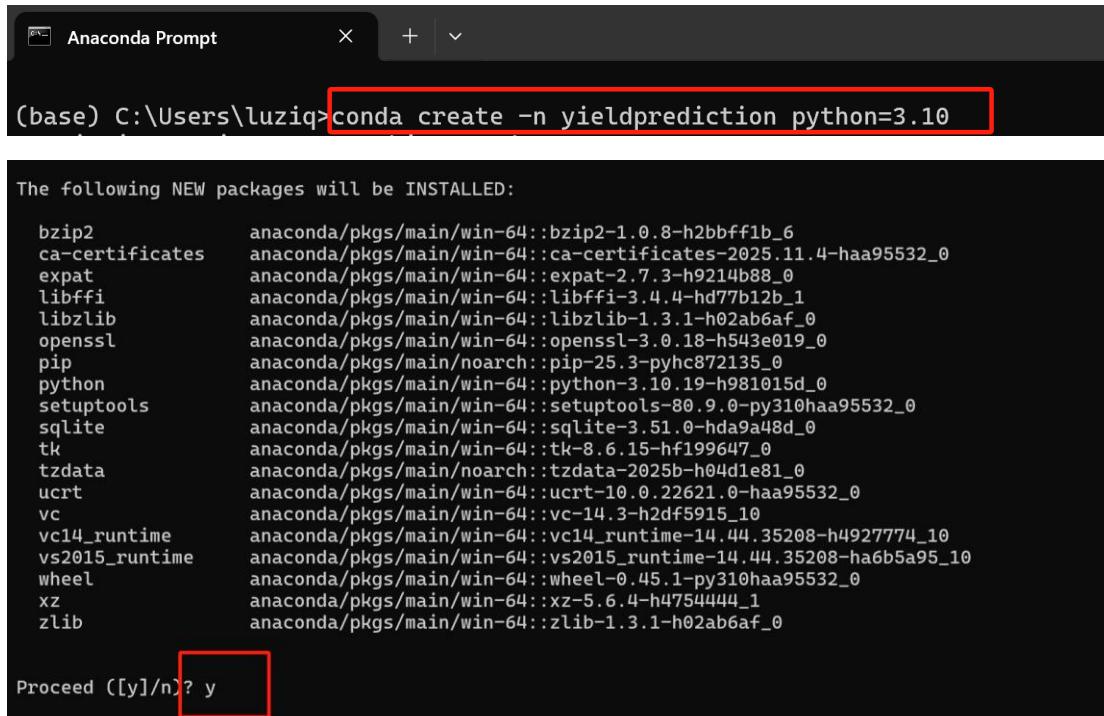
Code address: <https://github.com/ziqionglu00/Cropyieldprediction>

Data and checkpoint.pth address:

[https://drive.google.com/drive/folders/1NVrN8MkS1zBm-WzfYcbp9ncII\\_4QdOPd?usp=sharing](https://drive.google.com/drive/folders/1NVrN8MkS1zBm-WzfYcbp9ncII_4QdOPd?usp=sharing)

**Step1: Create a new virtual environment using conda**

entering “conda create -n yieldprediction python=3.10” in the terminal:



```
(base) C:\Users\luziq>conda create -n yieldprediction python=3.10
```

The following NEW packages will be INSTALLED:

bzip2	anaconda/pkgs/main/win-64::bzip2-1.0.8-h2bbff1b_6
ca-certificates	anaconda/pkgs/main/win-64::ca-certificates-2025.11.4-haa95532_0
expat	anaconda/pkgs/main/win-64::expat-2.7.3-h9214b88_0
libffi	anaconda/pkgs/main/win-64::libffi-3.4.4-hd77b12b_1
libzlib	anaconda/pkgs/main/win-64::libzlib-1.3.1-h02ab6af_0
openssl	anaconda/pkgs/main/win-64::openssl-3.0.18-h543e019_0
pip	anaconda/pkgs/main/noarch::pip-25.3-pyhc872135_0
python	anaconda/pkgs/main/win-64::python-3.10.19-h981015d_0
setuptools	anaconda/pkgs/main/win-64::setuptools-80.9.0-py310haa95532_0
sqlite	anaconda/pkgs/main/win-64::sqlite-3.31.0-hda9a48d_0
tk	anaconda/pkgs/main/win-64::tk-8.6.15-hf199647_0
tzdata	anaconda/pkgs/main/noarch::tzdata-2025b-h04d1e81_0
ucrt	anaconda/pkgs/main/win-64::ucrt-10.0.22621.0-haa95532_0
vc	anaconda/pkgs/main/win-64::vc-14.3-h2df5915_10
vc14_runtime	anaconda/pkgs/main/win-64::vc14_runtime-14.44.35208-h4927774_10
vs2015_runtime	anaconda/pkgs/main/win-64::vs2015_runtime-14.44.35208-ha6b5a95_10
wheel	anaconda/pkgs/main/win-64::wheel-0.45.1-py310haa95532_0
xz	anaconda/pkgs/main/win-64::xz-5.6.4-h4754444_1
zlib	anaconda/pkgs/main/win-64::zlib-1.3.1-h02ab6af_0

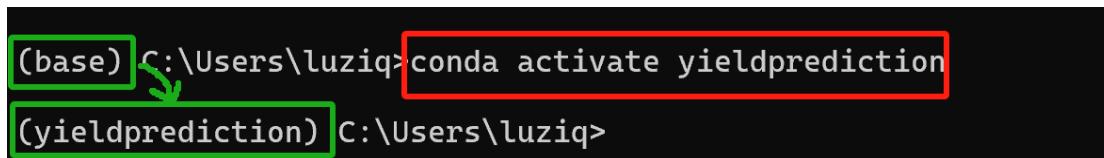
Proceed ([y]/n)? y

```
The following NEW packages will be INSTALLED:
```

bzip2	anaconda/pkgs/main/win-64::bzip2-1.0.8-h2bbff1b_6
ca-certificates	anaconda/pkgs/main/win-64::ca-certificates-2025.11.4-haa95532_0
expat	anaconda/pkgs/main/win-64::expat-2.7.3-h9214b88_0
libffi	anaconda/pkgs/main/win-64::libffi-3.4.4-hd77b12b_1
libzlib	anaconda/pkgs/main/win-64::libzlib-1.3.1-h02ab6af_0
openssl	anaconda/pkgs/main/win-64::openssl-3.0.18-h543e019_0
done	
#	
# To activate this environment, use	
#	
#     \$ conda activate yieldprediction	
#	
# To deactivate an active environment, use	
#	
#     \$ conda deactivate	install successfully

**Step2: Activate the new environment**

entering “conda activate yieldprediction” in the terminal:



```
(base) C:\Users\luziq>conda activate yieldprediction
```

```
(yieldprediction) C:\Users\luziq>
```

### Step3: Complete the remaining configuration in the new environment

entering "pip install -r \*\*\*\*\yieldprediction\requirements.txt" in the terminal

(The absolute path to the requirement.txt)

```
(yieldprediction) C:\Users\luziq>pip install -r D:\PHD\TA\yieldprediction\requirements.txt
Collecting torch>=2.1.1 (from -r D:\PHD\TA\yieldprediction\requirements.txt (line 1))
  Downloading torch-2.9.1-cp310-cp310-win_amd64.whl.metadata (30 kB)
Collecting torchvision>=0.16.1 (from -r D:\PHD\TA\yieldprediction\requirements.txt (line 2))
  Downloading torchvision-0.24.1-cp310-cp310-win_amd64.whl.metadata (5.9 kB)
Collecting torchaudio>=2.1.1 (from -r D:\PHD\TA\yieldprediction\requirements.txt (line 3))
  Downloading torchaudio-2.1.1-cp310-cp310-win_amd64.whl (2.1 MB) 2.1/2.1 MB 13.2 MB/s 0:00:00
  Downloading charset_normalizer-3.4.4-cp310-cp310-win_amd64.whl (107 kB)
  Downloading idna-3.11-py3-none-any.whl (71 kB)
  Downloading rsa-4.9.1-py3-none-any.whl (34 kB)
  Downloading smmap-5.0.2-py3-none-any.whl (24 kB)
  Downloading sqlalchemy-2.0.44-cp310-cp310-win_amd64.whl (2.1 MB) 2.1/2.1 MB 13.2 MB/s 0:00:00
  Downloading sqlparse-0.5.3-py3-none-any.whl (44 kB)
  Downloading starlette-0.56.0-py3-none-any.whl (74 kB)
  Downloading anyio-4.11.0-py3-none-any.whl (109 kB)
  Downloading typing_extensions-4.15.0-py3-none-any.whl (44 kB)
  Downloading urllib3-2.5.0-py3-none-any.whl (129 kB)
  Downloading uvicorn-0.38.0-py3-none-any.whl (68 kB)
  Downloading waitress-3.0.2-py3-none-any.whl (56 kB)
  Downloading opencv_python-4.12.0.88-cp37abi3-win_amd64.whl (39.0 MB) 39.0/39.0 MB 18.9 MB/s 0:00:02
  Downloading pillow-12.0.0-cp310-cp310-win_amd64.whl (7.0 MB) 7.0/7.0 MB 22.7 MB/s 0:00:00
Using cached einops-0.8.1-py3-none-any.whl (64 kB)
Downloaded annotated_doc-0.0.4-py3-none-any.whl (5.3 kB)
Using cached annotated_types-0.7.0-py3-none-any.whl (13 kB)
Downloaded blinker-1.9.0-py3-none-any.whl (8.5 kB)
Downloaded certifi-2025.11.12-py3-none-any.whl (159 kB)
```

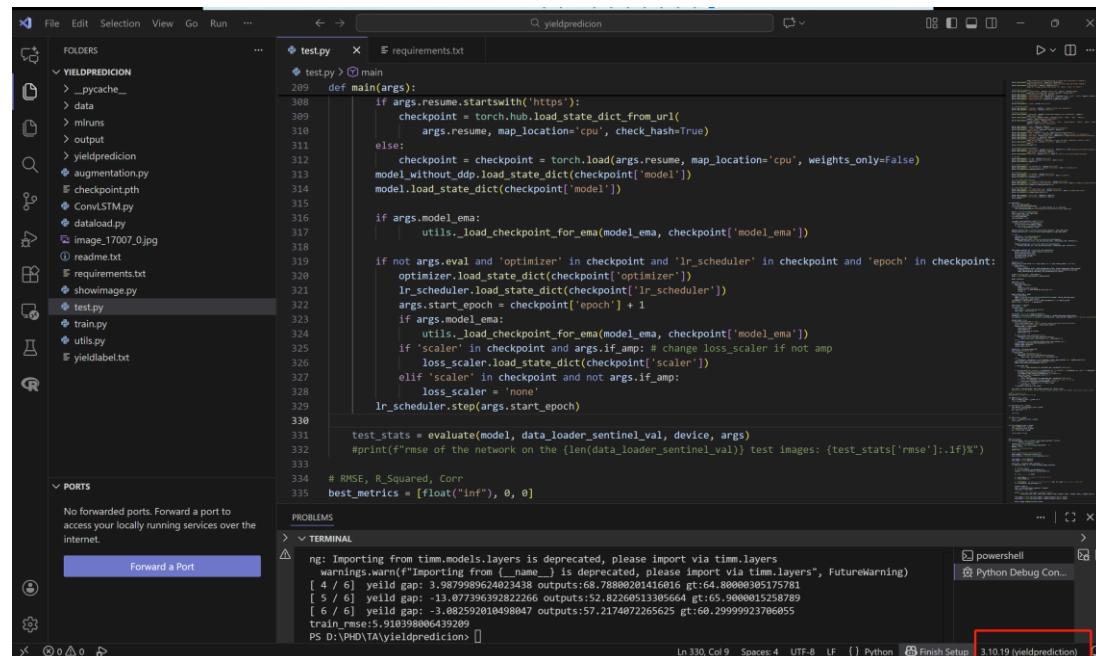
### Step4: Run Code

Method1: entering "pip install -r \*\*\*\*\yieldprediction\test.py" in the terminal

```
(yieldprediction) C:\Users\luziq>python D:\PHD\TA\yieldprediction\test.py
```

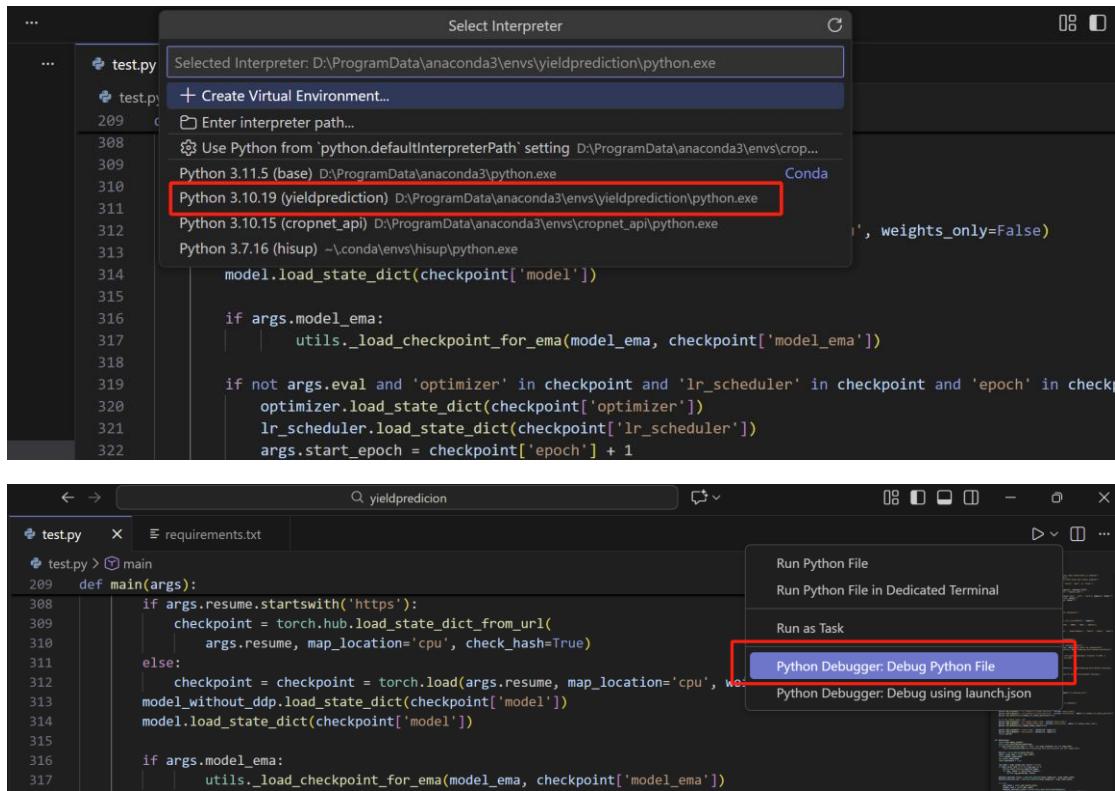
the absolute path to the test.py

Method2(option): Run it directly using the Python interpreter



```
File Edit Selection View Go Run ... ← → Q yieldprediction
FOLDERS
  YIELD PREDICION
    > __pycache__
    > data
    > mruns
    > output
    > yieldprediction
      augmentation.py
      checkpoint.pth
      ConvLSTM.py
      dataloader.py
      image_17007.jpg
      README.txt
      requirements.txt
      showimage.py
    test.py
      train.py
      utils.py
      yieldlabel.txt
  PORTS
    No forwarded ports. Forward a port to access your locally running services over the internet.
    Forward a Port
  PROBLEMS
  TERMINAL
    ng: Importing from timm.models.layers is deprecated, please import via timm.layers.
    warnings.warn(f"Importing from {__name__} is deprecated, please import via timm.layers", FutureWarning)
    [ 4 / 6] yield gap: 3.9879989624023438 outputs:68.78880201416016 gt:64.80000305175781
    [ 5 / 6] yield gap: -13.077396392822366 outputs:52.8226051305664 gt:65.9000015258789
    [ 6 / 6] yield gap: -3.082592010498047 outputs:57.217407225625 gt:60.29999923706955
train rmse:5.91839806439209
PS D:\PHD\TA\yieldprediction: []
```

Ln 330, Col 9 Spaces: 4 UTF-8 LF () Python Finish Setup 3.10.19 (yieldprediction)



## Assignment Requirement

**(deadline: 23:59 04/12/2025)**

1. Successfully execute the test.py file and submit a screenshot confirming the successful execution. For example:

```
[ 2 / 6] yeild gap: -3.8551864624023438 outputs:62.24481201171875 gt:66.0999984741211
[ 3 / 6] yeild gap: -5.430263519287109 outputs:52.36973571777344 gt:57.79999923706055
[ 4 / 6] yeild gap: 3.9879989624023438 outputs:68.78800201416016 gt:64.80000305175781
[ 5 / 6] yeild gap: -13.077396392822266 outputs:52.82260513305664 gt:65.9000015258789
[ 6 / 6] yeild gap: -3.082592010498047 outputs:57.2174072265625 gt:60.29999923706055
train_rmse:5.910398006439209
test successfully
PS D:\PHD\TA\yieldprediccion> []
```

2. Analyse each step of the ConvLSTM model within the ConvLSTM.py file (lines 57–153 of the code), and provide a commentary in the form of annotations appended to the code in ConvLSTM.py. For example:

```
def forward(self, input_tensor, cur_state):
    h_cur, c_cur = cur_state
    combined = torch.cat([input_tensor, h_cur], dim=1) # Concatenation of input features with hidden state
    combined_conv = self.conv(combined)

    cc_i, cc_f, cc_o, cc_g = torch.split(combined_conv, self.hidden_dim, dim=1)
    i = torch.sigmoid(cc_i)
```

3. Place the screenshots and the ConvLSTM.py file within a single folder. The folder should be named in the format 'UID\_Name'. Compress this folder and submit it to [ziqionglu@connect.hku.hk](mailto:ziqionglu@connect.hku.hk) and [immortal@hku.hk](mailto:immortal@hku.hk).