YOLOv5 Project

SETUP:

Note: Please install Agisoft Metashape Pro before continuing

1- Downloading Dependencies:

- Open YOLOv5-UAV-master directory in terminal. Type ***"%programfiles%\Agisoft\Metashape Pro\python\python.exe" pip install -r requirements.txt***
- Open ITMAT-T-main directory in terminal. Type ***"%programfiles%\Agisoft\Metashape Pro\python\python.exe" pip install -r requirements.txt***
- To install GDAL, open YOLOv5-UAV-master directory in terminal. Type ***"%programfiles%\Agisoft\Metashape Pro\python\python.exe" pip install GDAL-3.4.3-cp310-cp310-win_amd64.whl***
- To install Metashape, open imagedir directory. Type ***pip install Metashape-1.8.4-cp35.cp36.cp37.cp38-none-win_amd64.whl***
- To install itamt, open ITAMT-T-main in terminal. Type ***"%programfiles%\Agisoft\Metashape Pro\python\python.exe" python setup.py develop***

2- Configuring Agisoft:

- The imagedir directory contains a folder named “normal”. Normal folder holds the data for processing. Paste the images, that you want to process, there.
- The imagedir directory contains a folder named “monitor”. Monitor folder has a json file that contains information about the normal folder. if the name is “***example.json.DONE***” change it to “***example.json***”.
- Open example.json and change paths to “***normaldir***”, “***projectdir***” and “***savedir***” to relevant path on your PC.

3- Configuring YOLOv5-UAV-master:

- In the YOLOv5-UAV-master directory, open “predict.py”. Go to line 40 and edit:

“device=torch.device(“cpu”)” if you want to process in CPU
or
“device=torch.device(“cuda”)” if you want to process in GPU

```
37      print("Running Tree detection")
38      print("================================================================================\n")
39
40      model = DetectMultiBackend(weights=weights, device=torch.device('cpu'), dnn=False, data=None,
41      PCA_mat = None #torch.load("pca/pca_mat-no-bragg.pt")
42
43      ip = Image_processor()
44
```

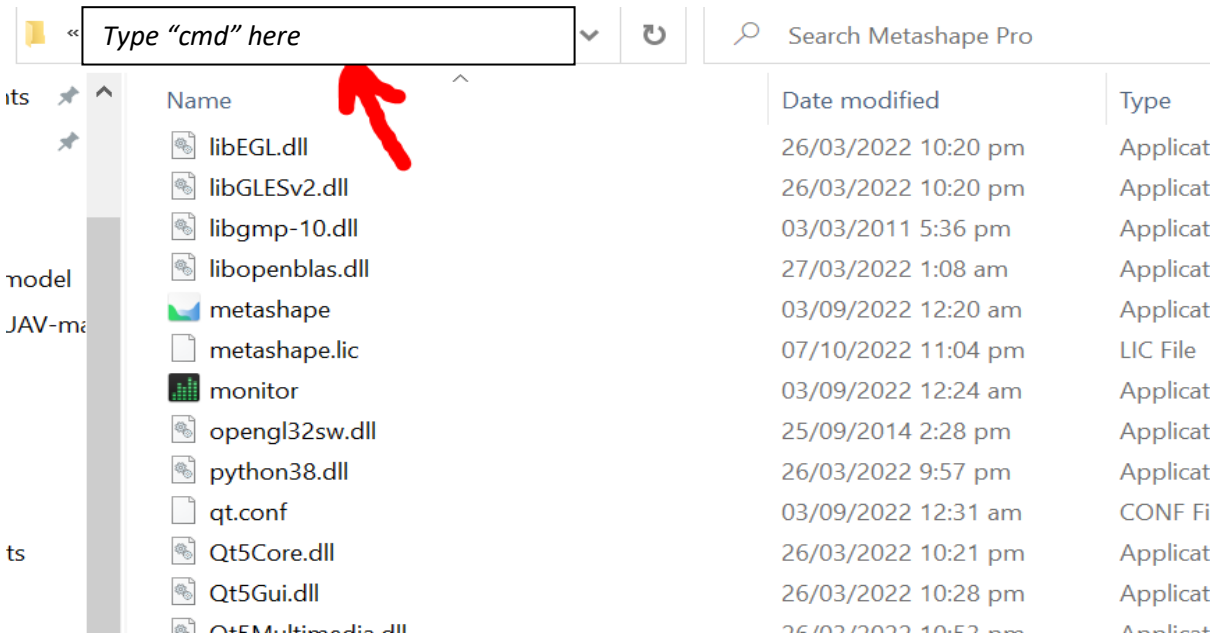
- In the YOLOv5-UAV-master directory, open *“sendEmail.py”*. Go to line 17 and enter the user’s email. Go to line 18 and enter the app generated password for corresponding email. Password can be generated from the link: https://myaccount.google.com/apppasswords

```
12  # # Add the app password created using "https://myaccount.google.com/apppasswords" here
13
14  def send_email(
15      filename,
16      receiver_email,
17      sender_email = "",
18      password = "",
19      subject = "An email with attachment from Python",
20      body = "This is an email with attachment sent from Python"
21      ):
```

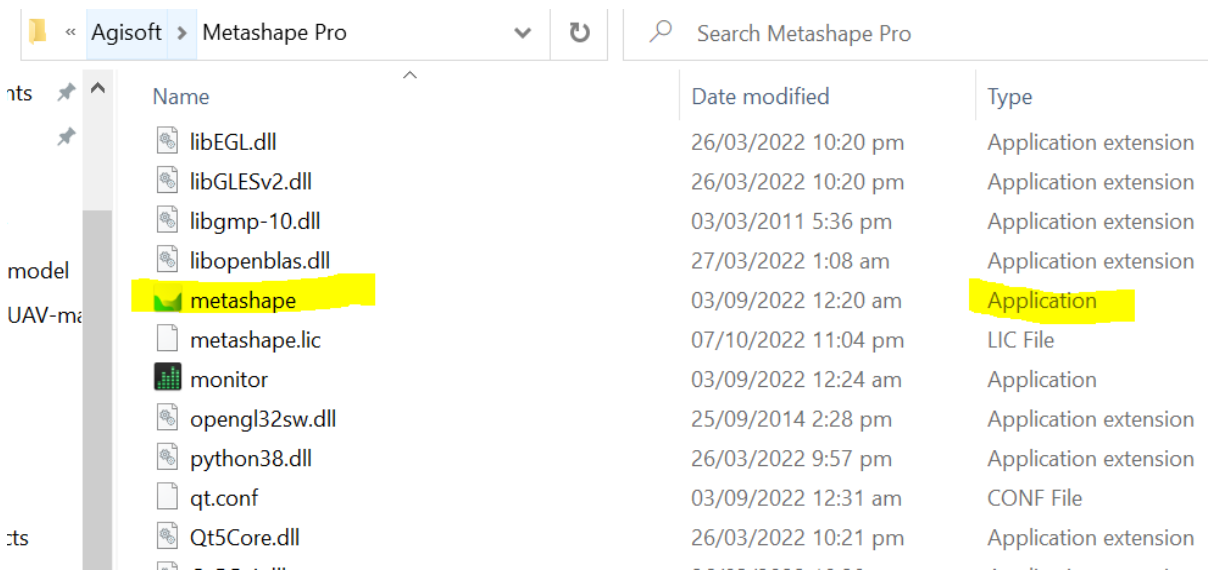
- You can also change email subject and body message from line 19 and 20.

Running Program:

- Open the directory where Agisoft Metashape Pro was installed. Make show the directory contains metashape.exe file as highlighted below:



- Open this directory in terminal. You can simply do this by typing ***“cmd”*** in address bar and hitting enter (as shown below):



- Once the terminal is open in the correct folder, Type ***“metashape.exe -r <path to agisoft_script.py>”***. Example shown below: