Forest Model Active Learning Instructions

Step 1:

Code Download: git clone https://github.com/saugatadhikari/forest_model_AL.git and put it in your desired folder in UAB's Cheaha server.

Step 2:

Dataset Download:

1. Download the 2 zip files from the links below, extract them in the path below: /forest_model_AL/public/scripts/data_al/repo
    a. https://drive.google.com/file/d/1K2CvEzfFoScoX1GPEJVitCx--1MqQLrS/view?usp=sharing
    b. https://drive.google.com/file/d/1tKCRrIB87D1LhdQvBGflVm9Tk0MPTsuF/view?usp=sharing

2. Download the zip file from the link below and extract it in the path below: /forest_model_AL/public/scripts: https://drive.google.com/file/d/1NRuM28U9ve5vathoLCr6zrngeA_mfKhU/view?usp=sharing
3. Download the zip file from the link below and put them in a folder that's convenient to you. You will need to upload the files present in this folder later to the frontend: https://drive.google.com/file/d/1rDTTfttb0SyBBVTotJ-HFG9wcAbattSg/view?usp=sharing

Step 3:

Environment Setup:

1. GPU env setup in Cheaha (one time thing)
    a. cd to /forest_model_AL/
    b. open environment.yml file, replace 'BlazerId' with your BlazerId, and save the file
    c. Run this command to install a new virtual env with all the requirements
        - conda env install -f environment.yml
    d. Activate the installed environment using and make sure the environment is activated:
        - conda activate al_env
2. Downloading Node packages to run npm run dev: Check!!!

Step 4:

Machine Allocation on Cheaha:

1. **Amperenodes**:

```
srun --ntasks=1 --cpus-per-task=1 --mem-per-cpu=32000 --time=12:00:00 --partition=amperenodes --job-name=JOB_NAME --gres=gpu:1 --pty /bin/bash
```

2. **Pascalnodes**:

   ```
   srun --ntasks=1 --cpus-per-task=1 --mem-per-cpu=32000 --time=12:00:00 –partition=pascalnodes --job-name=JOB_NAME --gres=gpu:1 --pty /bin/bash
   ```

Try to use Amperenodes as first priority since it is faster than Pascalnodes. After the machine is allocated, you will see something like this in your terminal: **blazerid@c0xxx**. Please note down **c0xxx**, this is your machine id which will be used in Step 5 below.

Step 5:

# ssh into the allocated machine

Important: Please follow the instructions below in the exact order (otherwise it might not work):

Terminal 1:

1. Login to cheaha: ssh BlazerId@cheaha.rc.uab.edu
2. ssh into allocated machine: ssh c0xxx (this is the id of machine allocated at Step 4
3. module load Anaconda3
4. conda activate al_env
5. cd into forest_model_AL/public/scripts/data_al and run **python data_maker_al.py**
6. cd into forest_model_AL/public/scripts/
7. Run flask app: flask --debug run --host=0.0.0.0 --port=5005

Terminal 2:

1. Login to cheaha: ssh BlazerId@cheaha.rc.uab.edu
2. ssh into allocated machine: ssh c0xxx (this is the id of machine allocated at Step ????)
3. cd into forest_model_AL/src/client/
4. Run frontend app:
   a. export LD_LIBRARY_PATH=””
   b. npm run dev

Terminal 3:

`ssh –L 5005:c0xxx:5005 BlazerId@cheaha.rc.uab.edu` from local machine’s terminal

Terminal 4:

`ssh –L 8082:c0xxx:8082 BlazerId@cheaha.rc.uab.edu` from local machine’s terminal

Step 6:

- Run localhost:8082 in the browser (Google Chrome preferred)
- Upload elevation png and RGB png for respective test regions and submit

Known issue:

Frontend, sometimes, cannot call backend 127.0.0.1:5005 for some reason. If that happens:

1. go to Terminal 3 and type "exit" and Enter
2. go to Terminal 1 and hit Ctrl + C
3. run this command again on Terminal 1: flask --debug run --host=0.0.0.0 --port=5005
4. go to Terminal 3 and run this command: `ssh –L 5005:c0xxx:5005 BlazerId@cheaha.rc.uab.edu`
5. Try to run the application on frontend and see if it hits the backend this time