Guide for Hand Annotation
with draw.py

Installation

get the copy of draw.py from our repo at bitbucket, its located in maizefinder/CNN/draw/draw.py

if your python is setup through Anaconda then you have most of the dependencies. You may need to install PyGame (2.0.1) and PIL (8.2.0) packages:

pip install pillow

pip install pygame

Running

first you have to set the datapath parameter located in the very first line of the script. It should point to wherever you are keeping Planet satellite images.


```
datapath = '../../../0/'

import numpy as np
import pandas as pd
```

change this

the script needs only one input at the prompt – fieldID, e.g. if you want to process the field with ID of a1ce519e you do:

python draw.py a1ce519e

please note that the "ID" column of the *train_unique.csv* has a different format. The same field is annotated as "id_a1ce519e". But you feed draw.py only the unique identifier (string after id_).

Guide and Drawing Windows

guide window

drawing window

upon launch draw.py will open two windows. Guide window shows 6 panels that may help you in identifying the borders, and the drawing window is where you draw.
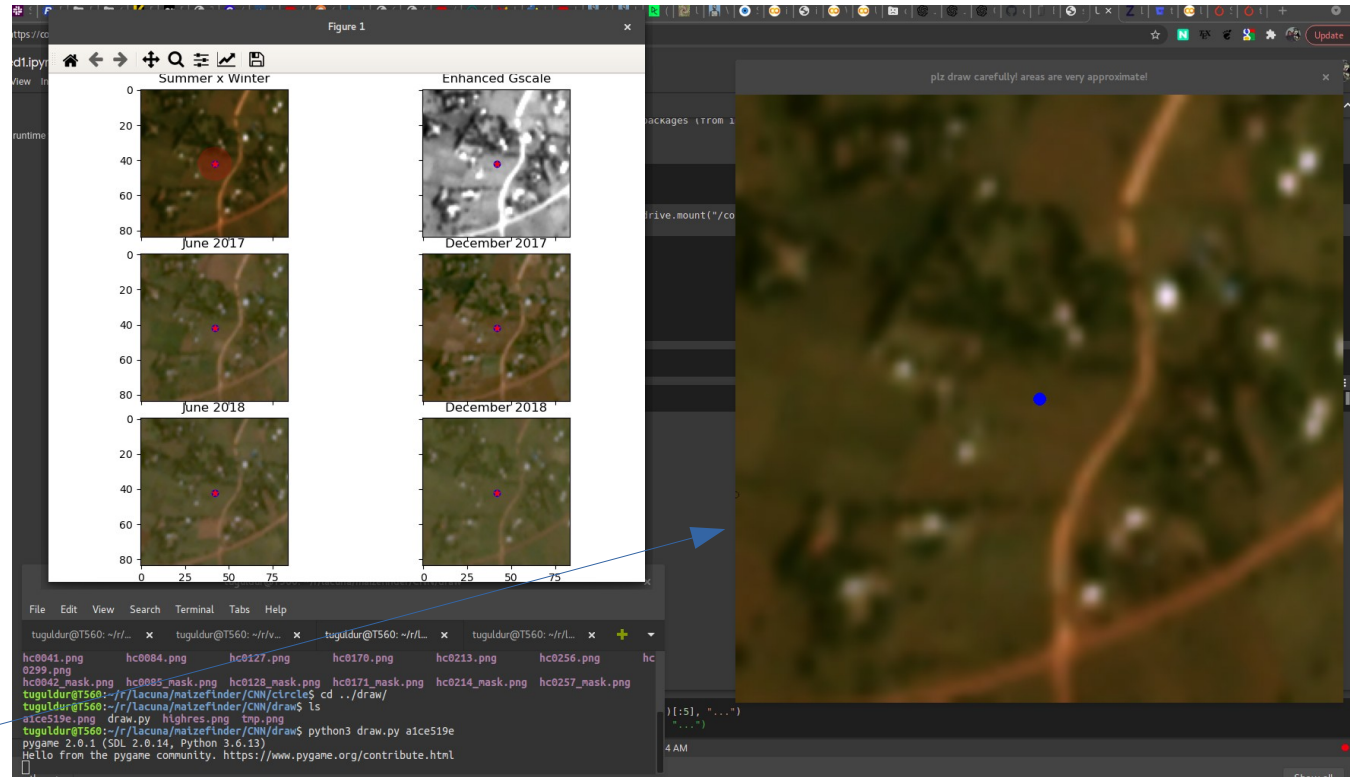

note that the drawing window may be blank upon launch. Don't worry, the background image will load as soon as you hover the mouse.

Blue Circles and Red Stars

Each image center in both windows are annotated with blue circle.

Images in the guide window show the displacement (center of field) by a red star.

The red circle in Summer x Winter panel is a circle enclosing area given by Plot_size. Its there only as a rough guide.
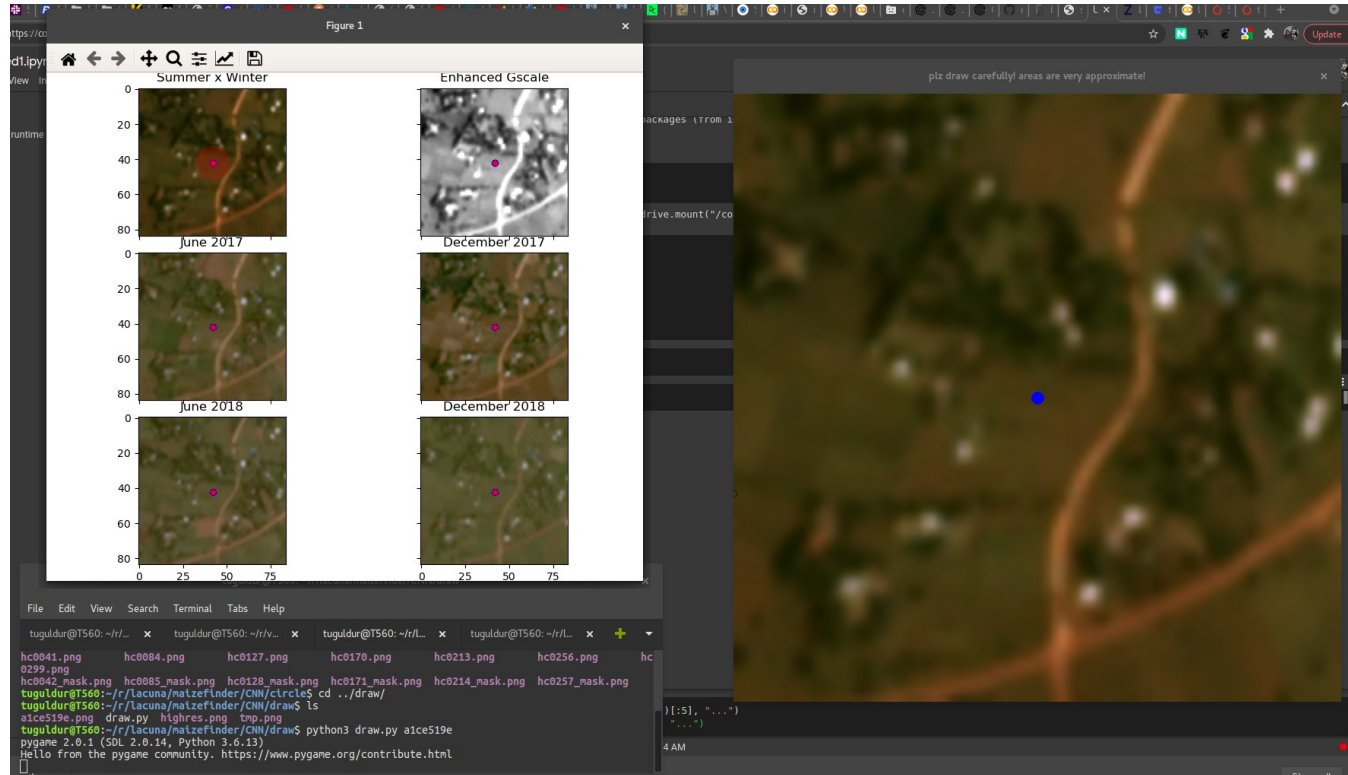
note that the red star can be further away from the blue circle (big displacement), or on top of it (little or no displacement). The field you draw must be centered on the location of red star.
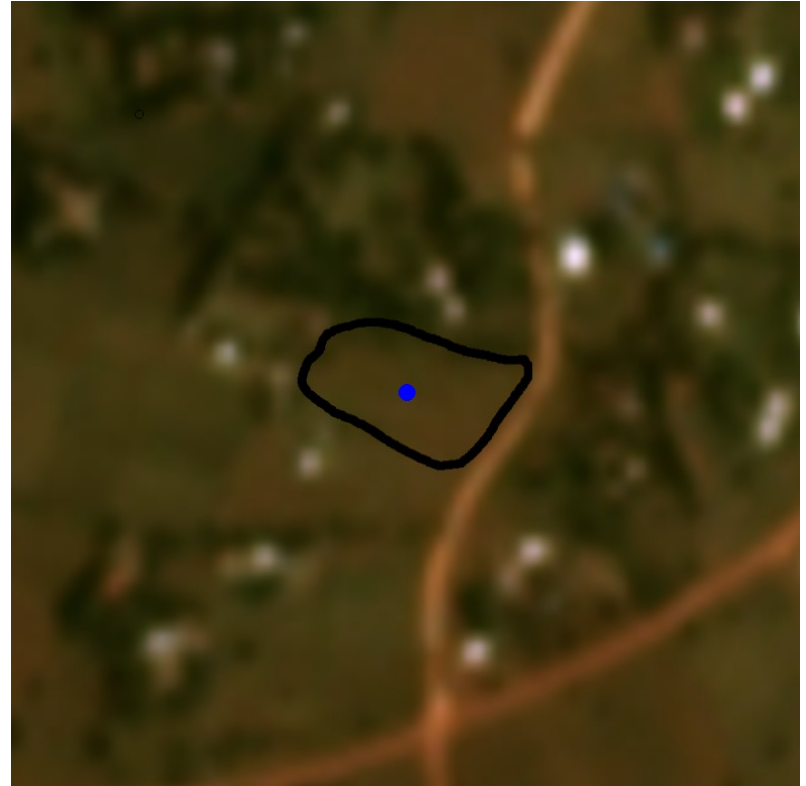
ENTER and ESC

After you finish drawing press **ENTER**.
Program will quit and automatically save a
PNG image with fieldID as name, i.e.
a1ce519e.png

If you mess up, press **ESC** and relaunch.
When you press ESC the program will just
quit without saving anything.

note that the drawing window only shows you the image center (blue circle), and you have to approximate the location of red
star based on the plots of the guide window. In this particular image the field is drawn around the blue circle because there is
no displacement, i.e. red star falls on top of blue circle.

Drawing "Rules"

(0) in this first round we are drawing only a **single field**, centered around the location of red star, very roughly matching in area of the red circle, and where you can confidently identify the boundary by eye.

(1) if you're not sure where the boundary is, **SKIP IT** and go to the next one! In the first round we want to try training on the images where we can clearly identify field boundaries with our eyes. Totally OK if you can confidently draw on only 10 out of your 75 assigned fields.

(2) when you are finished drawing, before pressing ENTER please move the **cursor to one of the corners**!

(3) the area of red circle based on Plot_size is VERY approximate, and so don't rely on it too much! The red circle on the Summer x Winter panel is just for a **rough guide** nothing else.

(4) field has to be **centered around the red star** location! Compared to area, field center is much more robust. So the red star location cannot be at the corner of the field you draw (has to be roughly in the center).

(5) draw inside the boundary touching it, **NOT on top** of it.

(6) your boundary need to be **fully closed**, i.e. don't leave any gaps. Otherwise a clean mask extraction is not guaranteed.

(7) try to be smooth! Some wiggle is OK, but try to use an actual mouse instead of trackpad.

Field Assignments

In the training set we 366 fields in total. We will be annotating the first 300 and keeping the remaining 66 for validation. For the first round we will be annotating the first 300 in the following way:

Tuguldur – 0 to 74

Michael – 75 to 149

Pol – 150 to 224

AJ – 225 to 299

We want to get done with this by **Friday evening**, and then will start rotating the segments. In the next round:

Tuguldur - 75 to 149

Michael – 150 to 224

Pol – 225 to 299

AJ – 0 to 74

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