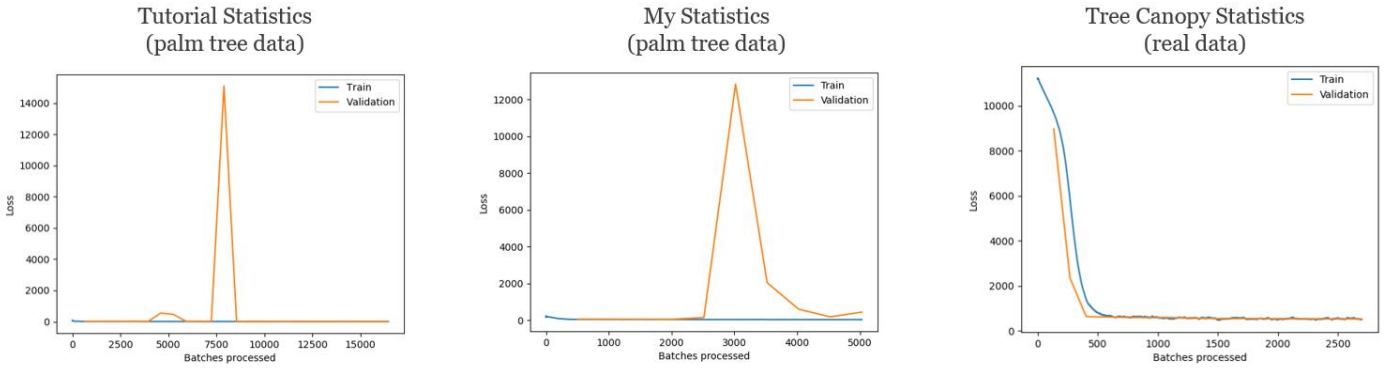
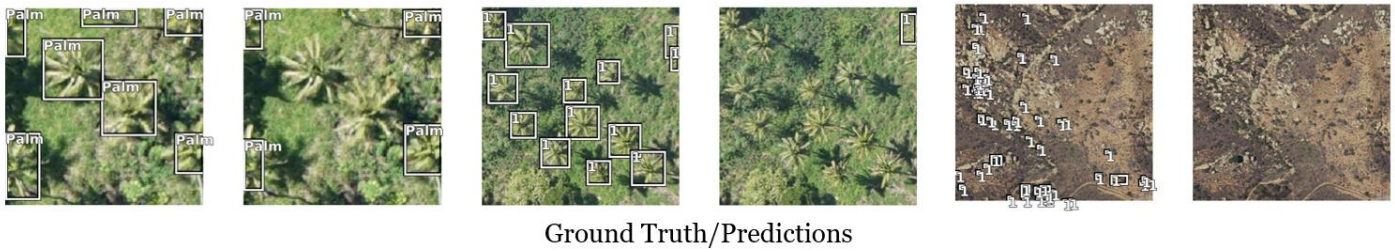
TCP ArcGIS Process

Self-trained model via Image Classification / Detect Objects Using Deep Learning (SingleShotDetector)

Follow tutorial: https://learn.arcgis.com/en/projects/use-deep-learning-to-assess-palm-tree-health/



Loss Graph



Ground Truth/Predictions

The real data seems not applicable in this model.

Possible solutions (cr. winter cohort presentation):

- Change the SSD model to new object detection model, called YOLOv3.
- Adjust the parameters: SSD w/ PASCAL VOC + 0.5 overlap (0.6 now) + batch size 64 (1 now).

Pre-trained model Land Cover Classification (Landsat 8) / Classify Pixels Using Deep Learning

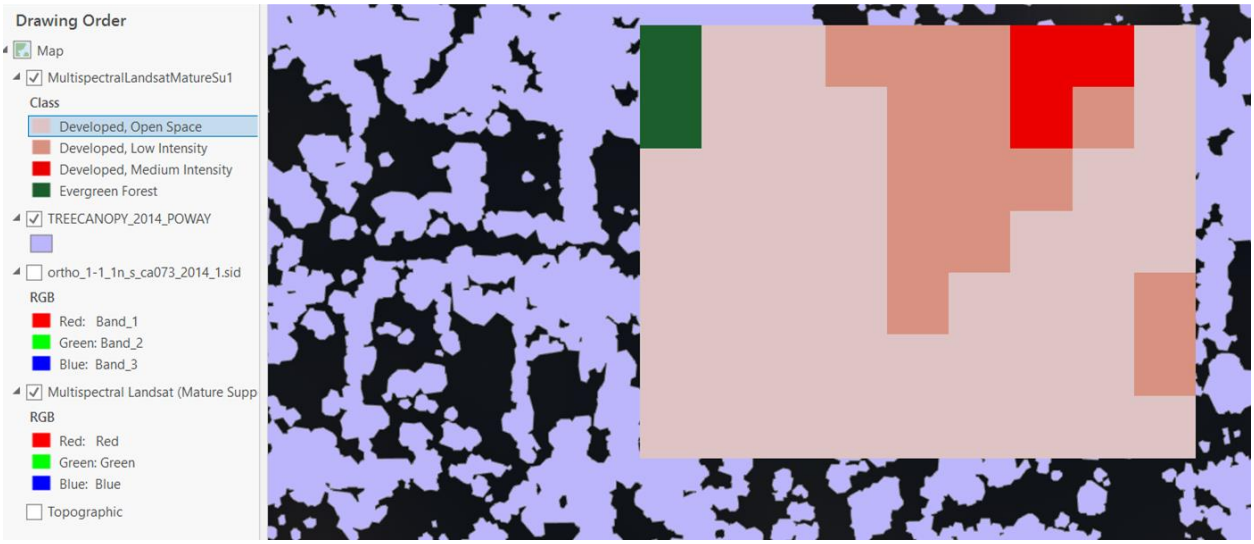
Follow tutorial: https://www.esri.com/videos/watch?videoid=SylmnD8fHU4

1. Training data: Multispectral Landsat (Mature Support), provided by Esri.

   Result: Only upper left corner is detected as “evergreen forest,” shown as green block. The purple layer below is the real tree canopy distribution, only overlap around 3.7%.

   Possible reason: The standard display setting for Multispectral Landsat is the 2021 data, which might not be compatible with 2014 data. The function of adjusting the timeline is

included in this dataset. However, after selecting the year 2014 as the end date to fit the real 2014 satellite data, the map can't zoom in. It requires running the model for the whole map. It is impossible for a local computer but might be workable on a larger remote server.



2. Training data: NAIP County Mosaic, Poway 2014, provided by USDA.

#1 Training fails

Errors and warnings

ERROR 999999: Something unexpected caused the tool to fail. Contact Esri Technical Support (http://esriurl.com/support) to Report a Bug, and refer to the error help for potential solutions or workarounds.

Unable to prepare input raster(s) for the python raster function.

Unable to open the specified raster. [raster]

Unable to extract and reorder raster bands. Invalid band index encountered. [requested band 3 at position 3]

Unable to prepare input raster(s) for the python raster function.

Parameters

Input Raster	ortho_1-1_1n_s_ca073_2014_1.sid
Output Classified Raster	C:\Users\Sylvi\Documents\ArcGIS\Projects\Pre-Trained\Pre-Trained.gdb\classified_raster
Model Definition	C:\Users\Sylvi\Documents\ArcGIS\LandCoverClassification.dlpk
Arguments	padding 100;batch_size 4;predict_background True
Processing Mode	PROCESS_AS_MOSAICKED_IMAGE
Output Folder	

Environments

Extent	497028.078087585 3650521.2637535 498516.806409382 3651506.60004107
Cell Size	30
Processor Type	GPU

#2 Conversion to Landsat 8 mosaic dataset fails

→ *Error: 8004205f: No new mosaic dataset item was added.* → No training results.

Possible reasons:

- The Raster Type Properties have been edited.
  Important Q: What is raster type of the NAIP dataset is?
- Background processing is enabled.
  Can’t find the updated tutorial to unable it.