**Arden Ma**

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Engineers for Exploration

**Creating Visualizations**

## PREREQUISITES

* QGIS 3.4 and GDAL

## INSTRUCTIONS

This instruction guide will start from the very beginning of the process, however if you already have sorted output folders containing classified .tif files, skip to step \_\_.

1. If you don’t have a model yet, use retrain.py to retrain Inception V3 on the training data (.jpg files).
2. Once you have a model, use annotate.py (GPU version preferably) to perform inference on unclassified data (.jpg files).
3. Use organize.py to sort the .jpg images into folders based on the output result file generated by annotate.py.
4. Sort the .tif files corresponding to the .jpg files based on the .jpg classifications.
   1. Option 1: Create and run a python script to sort based on filenames.
   2. Option 2: Use a text editor to find and replace .jpg with .tif (assuming the rest of the file path is the same) in the result file outputted from step 2 and rerun organize.py on this new result file.
5. Use gdal\_merge.py to create orthomosaics from sorted .tif files. The command should be of the form python3 gdal\_merge.py -o “NAME AND PATH OF OUTPUT FILE” “PATH TO DIRECTORY CONTAINING INPUT IMAGES”/\*
   1. Replace text in quotes.
6. Drag resulting orthos into QGIS and adjust layer colors for visualization (use the singleband psuedocolor option in the layer properties).

## REFERENCES

<https://gdal.org/programs/gdal_merge.html>