To retrain the last layer of neural network,

1) Our team ran the "retrain.py" script by finetuning the learning rate to .01 and number of training steps to 5000 on the UFO labeled images (around 3000) with the following command;

*python retrain.py --image\_dir ~/UFOTrainingData*

Two files "output\_graph.pb" (Trained Model) and "output\_labels.txt" (Label to the trained images) were generated on training the neural network, which can be found in the /tmp directory

2) Lastly, we used the re-trained model "output\_graph.pb" to get the correct predictions on the test set images and we did this by running the following command;

python label\_image.py \  
 --graph=/tmp/output\_graph.pb --labels=/tmp/output\_labels.txt \  
 --input\_layer=Placeholder \  
 --output\_layer=final\_result \  
 --image=$HOME/TstData/LightDayOrb/JP\_939.jpg

3) Also attached is the screenshot of the training/validation accuracy and cross entropy as observed on Tensorboard

4) Respective training logs is stored in the “retrain\_logs” directory

**FAQ**

1. How to use the trained model (“output\_graph.pb” file) ?
2. running the same command specified in point 2 above
3. How can one integrate it with tika docker?
4. One can update the “im2txtRestDockerFile” and “InceptionRestDockerfile” by applying the retrained checkpoint files to the tika-docker

Here, we will be copying each packet file to the docker conatainer path by running the following command;

1) cp /path/checkpointfile /usr/share/apache-tika/models/dl/image-video/recognition/

2) cp /path/checkpointfile /usr/share/apache-tika/src/dl/image/caption/

1. How can one obtain the checkpoint file?

A) By self extracting script in sh shell