A. How to set up:

1. Log in to Bracewell through Putty
2. Use the command: **cd ../..** to go to the root directory
3. Go to the location: **cd /datasets/work/d61-mission-wp2/work/David/dreamwalk**
4. Ask for the GPU**: sinteractive -n 1 -g gpu:4 -m 25gb -t 24:00:00**
5. Load the tensorflow 2.2.0**: module load tensorflow/2.2.0-py37-gcc5-gpu**
6. Run the command**: python3 train\_modified.py**
7. Optional: To see the remaining time of the session, open another Putty window and log in to Bracewell, run the command **squeue -u ‘CSIRO ID’**

B. Requirement:

Tensorflow >= 2.2.0

Hub version >= 0.8.0

Model would be saved in: ‘/result’ folder, performance result would be saved in the file ‘training.csv’

The base for my model is from: <https://www.tensorflow.org/hub/tutorials/tf2_image_retraining>

C. Folder description:

‘cache’: important, the location for ‘pretrained MobileNetV2 model’, download from: https://tfhub.dev/google/imagenet/mobilenet\_v2\_140\_224/feature\_vector/4

If want to use another pretrained model for ImageNet:

1. Because Bracewell could not load pretrained model from online when training (maybe because of the firewall), so we have to download pretrained model to local folder and then load it locally without using internet. How to achieve this: <https://medium.com/@xianbao.qian/how-to-run-tf-hub-locally-without-internet-connection-4506b850a915>
2. After downloading another pretrained model, please change the folder name using the method in the above link, then save it to ‘/cache’ folder

All other folder contains the training result for each test. They all include the ‘training script’, ‘training result’ (a csv file), ‘saved model’ (in /result folder)

D. Future:

1. More epochs may help. However, the total running time may exceed Bracewell’s limit. Running batch work may solve this issue.
2. The current model is MobileNetV2, but MobileNetV3 is available now. Changing to MobileNetV3 may improve the performance.