

Code Repository - <https://github.com/MacherLabs/CurrencyClassification>

How to train a file

- Tensorflow hub module(<https://github.com/tensorflow/hub>) was used to train the model. It contains various models implemented by tensorflow.
 - Script(https://github.com/tensorflow/hub/tree/master/examples/image_retraining/retrain.py)= This script is used to train the model
- An Example is given below

```
“python retrain.py \  
  --image_dir=/home/pranav/PycharmProjects/num_fingers/images/train/ \  
  --learning_rate=0.0001 \  
  --testing_percentage=10 \  
  --validation_percentage=10 \  
  --train_batch_size=32 \  
  --validation_batch_size=-1 \  
  --flip_left_right True \  
  --random_scale=20 \  
  --eval_step_interval=10 \  
  --how_many_training_steps=100000 \  
  --tfhub_module=https://tfhub.dev/google/imagenet/mobilenet_v2_140_224/feature_vector/1 \  
  --output_graph=./mobilenet_new_dataset_gray_scale5/output_graph.pb \  
  --intermediate_output_graphs_dir=./mobilenet_new_dataset_gray_scale5/intermediate \  
  --intermediate_store_frequency=500 \  
  --summaries_dir=./mobilenet_new_dataset_gray_scale5/summaries \  
  --output_labels=./mobilenet_new_dataset_gray_scale5/output_labels.txt \  
  --saved_model_dir=./mobilenet_new_dataset_gray_scale5/  
“
```

- Change the parameters according to the purpose

To use a given Model for Predicting Currency

-https://github.com/MacherLabs/CurrencyClassification/blob/master/pre_trained_models/mobile_net_predictor.py file is used.

- The class Test_Graph contains functions to predict currency and predict accuracy on a certain dataset.

- To run the file use the command "python [mobilenet_predictor.py](#) "
- To predict accuracy there are two methods
 - Provide the path of tfrecord to the predict_accuracy method
 - Provide the path of folder of images and label file and outdir to predict_accuracy method.
Note = The sub dirs of the folder must have the same name as specified in the label file .
- Provide the appropriate model graph to the class to switch between different models.

To create a Tfrecord

- Use the file
https://github.com/MacherLabs/CurrencyClassification/blob/master/pre_trained_models/tfRecord.py
- Just provide the folder dir in the script tfRecord.py and run it

To run the model on webcam

-- Use the file external_webcam_test.py to run the model on webcam