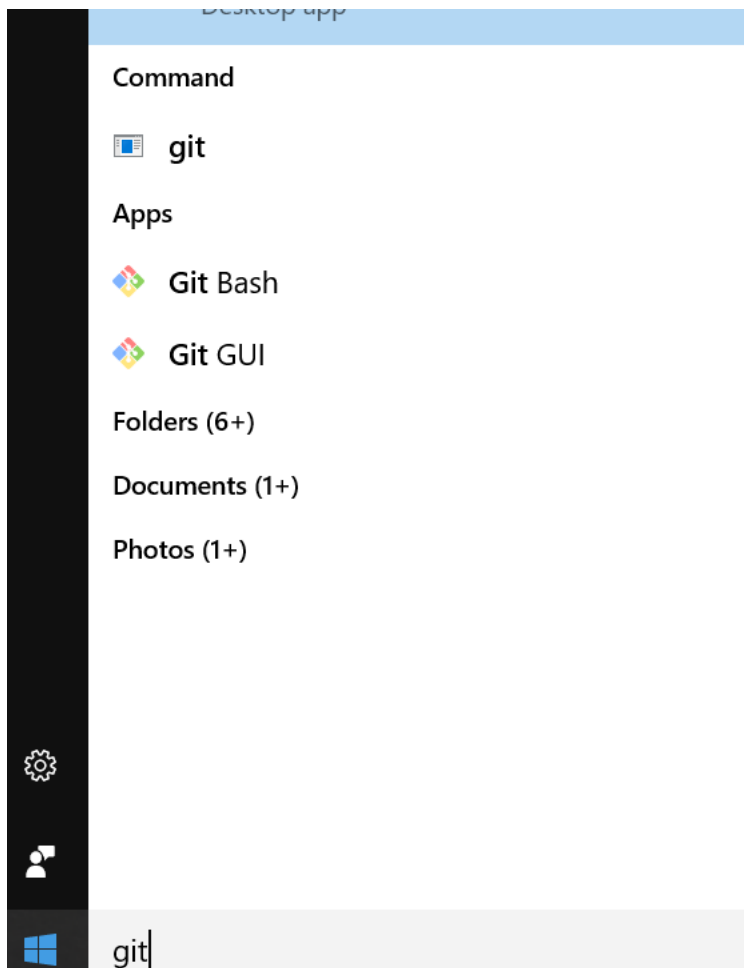


Steps to perform Image classification using Deep learning

1. Open command prompt from the windows startup menu

A screenshot of a Windows Command Prompt window. The title bar at the top reads "C:\> Command Prompt". The main area of the window is black with white text. The text displayed is: "Microsoft Windows [Version 10.0.14393]" on the first line, "(c) 2016 Microsoft Corporation. All rights reserved." on the second line, and "C:\Users\I344620>" on the third line, which is the current command prompt.

2. Hope everyone has installed git software. Kindly check whether git is installed in your machine by typing “git” in the startup menu.



3. If step 2 is good, then move on to Step 4. Else please check with your trainer regarding git software installation document.
4. For Deep learning, we use Tensorflow. Please clone the Tensorflow models and algorithms to your machine using the below command

git clone <https://github.com/tensorflow/tensorflow>

This command will get executed for 2-5 minutes to get the Tensorflow models and examples cloned on your machine

5. Please navigate to the sub folder “**example**” present inside the cloned Tensorflow folder

C:\Users\I344620\Downloads\Hackathon\tensorflow\tensorflow\examples

(You need to replace the above file structure to the folder where you have installed the tensorflow)

bramanian, Rajprasath > Downloads > Hackathon > tensorflow > tensorflow > examples >				
<input type="checkbox"/>	Name	Date modified	Type	Size
	adding_an_op	9/20/2017 1:24 PM	File folder	
	android	9/20/2017 1:24 PM	File folder	
	benchmark	9/20/2017 1:24 PM	File folder	
	get_started	9/20/2017 1:24 PM	File folder	
	how_tos	9/20/2017 1:24 PM	File folder	
<input checked="" type="checkbox"/>	image_retraining	9/20/2017 1:24 PM	File folder	
	ios	9/20/2017 1:24 PM	File folder	
<input checked="" type="checkbox"/>	label_image	9/20/2017 1:24 PM	File folder	
	learn	9/20/2017 1:24 PM	File folder	
	multibox_detector	9/20/2017 1:24 PM	File folder	
	saved_model	9/20/2017 1:24 PM	File folder	
	speech_commands	9/20/2017 1:24 PM	File folder	
	tutorials	9/20/2017 1:24 PM	File folder	
	udacity	9/20/2017 1:24 PM	File folder	
	wav_to_spectrogram	9/20/2017 1:24 PM	File folder	
	init.py	9/16/2017 6:01 PM	PY File	0 KB

6. You can see there are two folders named “image_retraining” and “label_image”. Please open “image_retraining” folder and check whether retrain.py file is present or not

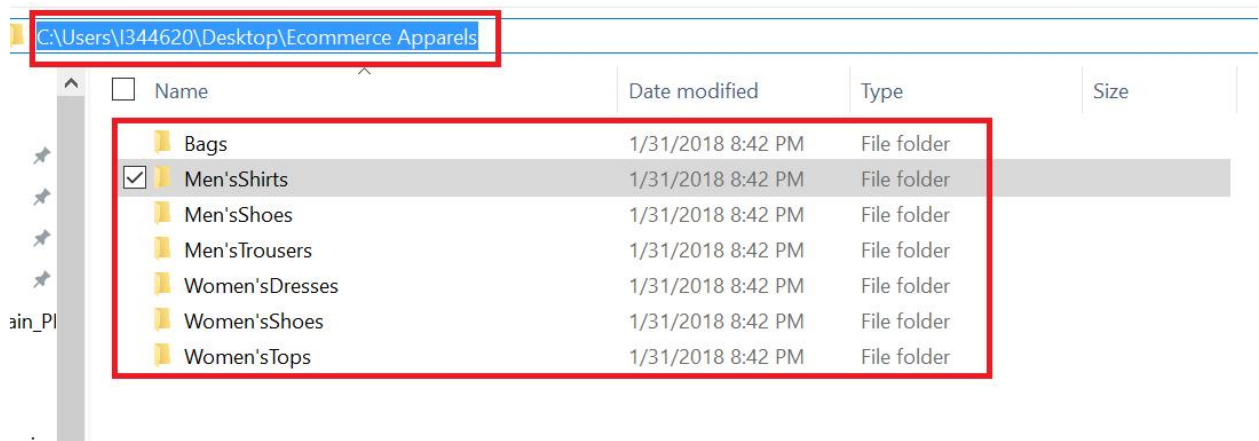
bramanian, Rajprasath > Downloads > Hackathon > tensorflow > tensorflow > examples > image_retraining >				
<input type="checkbox"/>	Name	Date modified	Type	Size
	data	9/20/2017 1:24 PM	File folder	
	init.py	9/16/2017 6:01 PM	PY File	0 KB
	BUILD	9/16/2017 6:01 PM	File	2 KB
	label_image.py	9/16/2017 6:48 PM	PY File	5 KB
	retrain.py	9/16/2017 6:01 PM	PY File	54 KB
	retrain_test.py	9/16/2017 6:01 PM	PY File	6 KB

7. Download the below zip file and unzip the folders in your desktop



Ecommerce
Apparels.zip

7. After you unzip it, your folder structure should be looking like this



8. In command prompt . navigate to the image_retraining folder and run the below script.
This step is the model training. Your trainer will explain what this step actually does behind

`python retrain.py --image_dir="C:\Users\I344620\Desktop\Ecommerce Apparels"`

```
C:\Users\I344620\Downloads\Hackathon\tensorflow\tensorflow\examples\image_retraining>python retrain.py --image_dir="C:\Users\I344620\Desktop\Ecommerce Apparels"
INFO:tensorflow:Looking for images in 'Bags'
INFO:tensorflow:Looking for images in 'Men'sShirts'
INFO:tensorflow:Looking for images in 'Men'sShoes'
INFO:tensorflow:Looking for images in 'Men'sTrousers'
INFO:tensorflow:Looking for images in 'Women'sDresses'
INFO:tensorflow:Looking for images in 'Women'sShoes'
INFO:tensorflow:Looking for images in 'Women'sTops'
2018-01-31 21:49:38.054298: I C:\tf_jenkins\home\workspace\rel-win\M\windows\PY\36\tensorflow\core\platform\cpu_feature_guard.cc:137] Your CPU supports instructions th
is TensorFlow binary was not compiled to use: AVX AVX2
INFO:tensorflow:100 bottleneck files created.
INFO:tensorflow:200 bottleneck files created.
INFO:tensorflow:300 bottleneck files created.
INFO:tensorflow:400 bottleneck files created.
INFO:tensorflow:500 bottleneck files created.
INFO:tensorflow:600 bottleneck files created.
INFO:tensorflow:700 bottleneck files created.
INFO:tensorflow:800 bottleneck files created.
```

It may run for 10-15 minutes. Please let your instructor know of any issues if you stuck up somewhere.

9. Once the above step is completed successfully, please navigate to the **label_image** folder present inside **tensorflow/examples** directory

C:\Users\I344620\Downloads\Hackathon\tensorflow\tensorflow\examples\label_image

C:\Users\I344620\Downloads\Hackathon\tensorflow\tensorflow\examples\label_image				
	Name	Date modified	Type	Size
	data	9/20/2017 1:24 PM	File folder	
	BUILD	9/16/2017 6:01 PM	File	2 KB
	label_image.py	9/17/2017 8:29 PM	PY File	5 KB
n_PI	label_images_webapi.py	9/20/2017 12:02 AM	PY File	6 KB
	main.cc	9/16/2017 6:01 PM	CC File	16 KB
	README.md	9/16/2017 6:01 PM	MD File	4 KB

10. Run the **label_image.py** file. You have to provide one image as an argument. This is basically an inference step. You can download an image online and give it as an input. Image that you are downloading online should be belonging to any of the 7 labels(**Men shoes, Women Shoes, Women dress, Bags, Men Shirts, Men Ttousers or Women tops**)

```
python label_image.py --graph=/tmp/output_graph.pb --
labels=/tmp/output_labels.txt --output_layer=final_result --
image="C:\\Users\\I344620\\Desktop\\Men Shoes.jpg"
```

Kindly check whether you are getting the below output

```
C:\Users\I344620\Downloads\Hackathon\tensorflow\tensorflow\examples\label_image>python label_image.py --graph=/tmp/output_graph.pb --labels=/tmp/output_labels.txt --output_
layer=final_result --image="C:\\Users\\I344620\\Desktop\\Men Shoes.jpg"
2018-01-31 21:55:03.682478: I C:\tf_jenkins\home\workspace\rel-win\M\windows\PY\36\tensorflow\core\platform\cpu_feature_guard.cc:137] Your CPU supports instructions that th
is TensorFlow binary was not compiled to use: AVX AVX2
2018-01-31 21:55:04.872541: W C:\tf_jenkins\home\workspace\rel-win\M\windows\PY\36\tensorflow\core\framework\op_def_util.cc:334] Op BatchNormWithGlobalNormalization is depr
ecated. It will cease to work in GraphDef version 9. Use tf.nn.batch_normalization().
[2 5 4 0 1]
['bags', 'men sshirts', 'men sshoes', 'men strousers', 'women sdresses', 'women sshoes', 'women stops']
men sshoes 0.859785
women sshoes 0.139055
women sdresses 0.000331822
bags 0.000266627
men sshirts 0.000226414
```

You have created your deep learning image classification model using Tensorflow successfully!!!