

Caption This!

Note:- To run this project we require linux based operating system, as the project is docker dependent.

Place the code folder i.e image_caption folder at your home directory location

Docker

Install Docker using the platform-specific installation instructions for Docker [here](<https://docs.docker.com/engine/installation/#platform-support-matrix>).

Use the pre-built Docker image from Docker Hub

3. After installing Docker, pull a prebuilt image from Docker Hub by entering:

```
sudo docker pull mlatberkeley/showandtell
```

You will need a Docker Hub account in order to pull the image (get one [here](<https://hub.docker.com/>)).

If it's your first time pulling a Docker image from Docker Hub you will need to login to your Docker Hub account from your terminal with `docker login`, and follow the username and password prompt.

4. To run the pulled image (after cloning and downloading the repository) enter

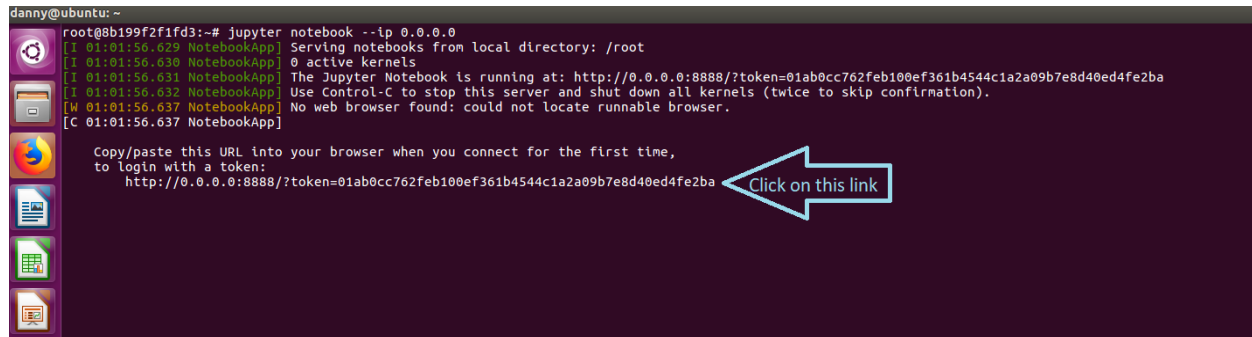
```
sudo docker run -it -p 8888:8888 -v </pathtoimage_captionfolder>:/root mlatberkeley/showandtell
```

where __pathtoimage_captionfolder__ should be the __absolute path__ to image_caption.

5. After building, starting, and attaching to the appropriate Docker container, run the provided Jupyter notebooks by entering

```
jupyter notebook --ip 0.0.0.0
```

Click on the link obtained...see the below image



A terminal window on an Ubuntu system showing the output of the command `jupyter notebook --ip 0.0.0.0`. The output includes messages from the `NotebookApp` indicating that the server is running at `http://0.0.0.0:8888/?token=01ab0cc762feb100ef361b4544c1a2a09b7e8d40ed4fe2ba`. A blue arrow points to this URL, with the text "Click on this link" next to it.

```
danny@ubuntu: ~  
root@8b199f2f1fd3:~# jupyter notebook --ip 0.0.0.0  
[I 01:01:56.629 NotebookApp] Serving notebooks from local directory: /root  
[I 01:01:56.630 NotebookApp] 0 active kernels  
[I 01:01:56.631 NotebookApp] The Jupyter Notebook is running at: http://0.0.0.0:8888/?token=01ab0cc762feb100ef361b4544c1a2a09b7e8d40ed4fe2ba  
[I 01:01:56.632 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).  
[W 01:01:56.637 NotebookApp] No web browser found: could not locate runnable browser.  
[C 01:01:56.637 NotebookApp]  
  
Copy/paste this URL into your browser when you connect for the first time,  
to login with a token:  
http://0.0.0.0:8888/?token=01ab0cc762feb100ef361b4544c1a2a09b7e8d40ed4fe2ba
```

The Notebooks

There are three notebooks:

- * ``image_caption_train.ipynb`` - Contains code to train a TensorFlow caption generator from a VGG16 word embedding as described in our article.
- * ``image_caption_generator.ipynb`` - Contains the same code as ``1.ipynb`` except it introduces functionality to generate captions from an image embedding (as opposed to just being able to train on captions). Functions as a sanity check for the quality of captions we are generating.
- * ``image_caption_test.ipynb`` - Builds on the previous notebook, except instead of feeding an image embedding to our caption generation model, it first feeds an image to the VGG-16 Convolutional Neural Network to generate an image feature embedding. This gives us an end-to-end pipeline for going from an image to a caption.
- * In order to run the test notebook edit the image path in the ipynb (more details in the ``ipynb`` itself).

Additional Downloads:

Visit the link and download and extract the folder `imag_caption`.

https://drive.google.com/file/d/11T4qocrd8E_V-NOpCyVtSj5BKS4MKEdJ/view?usp=sharing

Copy all the three folders inside `imag_caption` i.e. `data`, `dockerfiles`, `models` and paste them inside the home directory directory `image_caption` of your linux system.