# Install pyhton 3& then use this command to allow for python virtual environments:
sudo apt-get install python3-venv

Then, create a folder of your choice and use the following command to duplicate a version of your
python into this folder. Then, the originalpython will not get damaged:
python3 -m venv /home/christiaan/Desktop/TensorFlow

Then activate the virtual environment by using:
source /home/christiaan/Desktop/TensorFlow/bin/activate

this means that pip-install goes now into the new folder instead of to the linux core python.
NB: both python & python3 now point to the virtual environment. This environment is python 3
since you used python3-command to create it. For this reason: pip & pip3 also now work both
with python3 inside this environment.

Now, to install TensorFlow into the virtual environment, give the following command, but ONLY
when the environment is active:
pip install tensorflow

There may be a few errors including bdist_wheel etc. but they do not affect functionality.

To test tensorflow, open python with the command
python
# and then give:
import tensorflow as tf

the command
python -c ‘import tensorflow as tf’ (with ‘’ marks)
will also do both at the same time.

the command
deactivate
will shut down the current virtual environment. NB: TensorFlow will NOT work outside of this
virtual environment!

to install Keras on top of TensorFlow, make sure you have the virtual environment active and then
pip install keras

also install:
pip install numpy
pip install scipy

# to test Keras:
# open python and give:
import keras as ks
# you do not need to import numpy, scipy, TensorFlow first before doing this.

To faciliate use of the vitrtual environment, open your .bashrc and add the following line:
alias TensorFlow=”source /home/christiaan/Desktop/TensorFlow/bin/activate”
and then reload your .bashrc
you can now activate the virtual environment including the TensorFlow by the command
TensorFlow

and then deactivate it by the deactivate-command. It will work fromeach working directory.
NB: Within each terminal shell, only one virtual environment can be active at a time. But multiple shells can run different environments in parallel.

Python 3.7 async error:
All you need to do is change the argument "async" to something else in "/usr/local/lib/python3.7/site-packages/tensorflow/python/pywrap_tensorflow_internal.py" in the function definition and return..