```
sudo apt-get update
sudo apt-get upgrade
sudo apt-get dist-upgrade
#INSTALAR DRIVER DE NVIDIA DESDE software&updates
nvidia-smi    #Verificando que el driver este instalado
lspci | grep -i nvidia
python3
sudo apt-get install python3-pip python3-dev
sudo apt-get install build-essential cmake git unzip

sudo apt-get install pkg-config libopenblas-dev liblapack-dev

sudo apt-get install libatlas-base-dev gfortran

sudo apt-get install python3-numpy python3-scipy python3-matplotlib python3-yaml

sudo apt-get install libavcodec-dev libavformat-dev libswscale-dev libv4l-dev

sudo apt-get install libxvidcore-dev libx264-dev

sudo apt-get install libhdf5-serial-dev python3-h5py

sudo apt-get install graphviz

sudo pip3 install pydot-ng scikit-learn pillow
sudo apt-get install libjpeg8-dev libtiff5-dev libjasper-dev libpng12-dev
sudo apt-get install libgtk-3-dev
sudo apt install qtbase5-dev
pip3 install opencv-contrib-python
```

```
python3
        >>>import cv2
        >>> cv2.__version__
```

```
gcc --version
```

```
wget http://developer.download.nvidia.com/compute/cuda/repos/ubuntu1604/x86_64/cuda-repo-ubuntu1604_9.0.176-1_amd64.deb
```

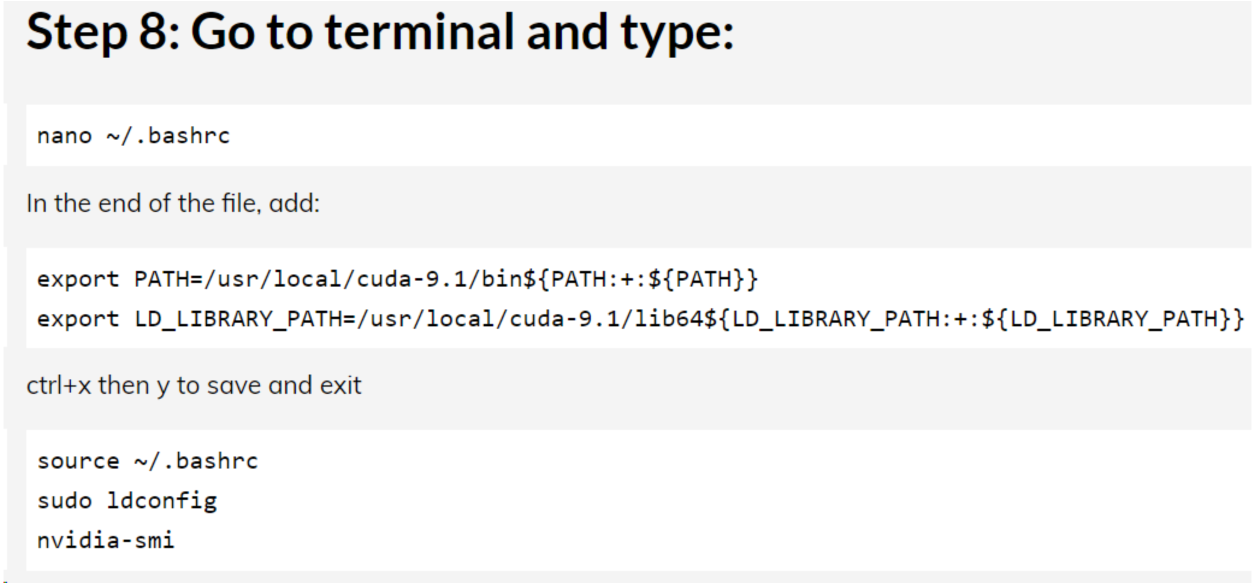
```
sudo dpkg -i cuda-repo-ubuntu1604_9.0.176-1_amd64.deb
```

```
sudo apt-key adv --fetch-keys http://developer.download.nvidia.com/compute/cuda/repos/ubuntu1604/x86_64/7fa2af80.pub
```

```
sudo apt-get update
```

```
sudo apt-get install cuda-9-0
```

```
echo $PATH  #agregar ruta al path
```



Step 8: Go to terminal and type:

```
nano ~/.bashrc
```

In the end of the file, add:

```
export PATH=/usr/local/cuda-9.1/bin${PATH:+:${PATH}}
export LD_LIBRARY_PATH=/usr/local/cuda-9.1/lib64${LD_LIBRARY_PATH:+:${LD_LIBRARY_PATH}}
```

ctrl+x then y to save and exit

```
source ~/.bashrc
sudo ldconfig
nvidia-smi
```

```
nano ~/.bashrc

export PATH=/usr/local/cuda-9.0/bin${PATH:+:${PATH}}

export LD_LIBRARY_PATH=/usr/local/cuda-9.0/lib64${LD_LIBRARY_PATH:+:${LD_LIBRARY_PATH}}
```

```
source ~/.bashrc

sudo ldconfig

# Reboot the cpu

nvidia-smi
```

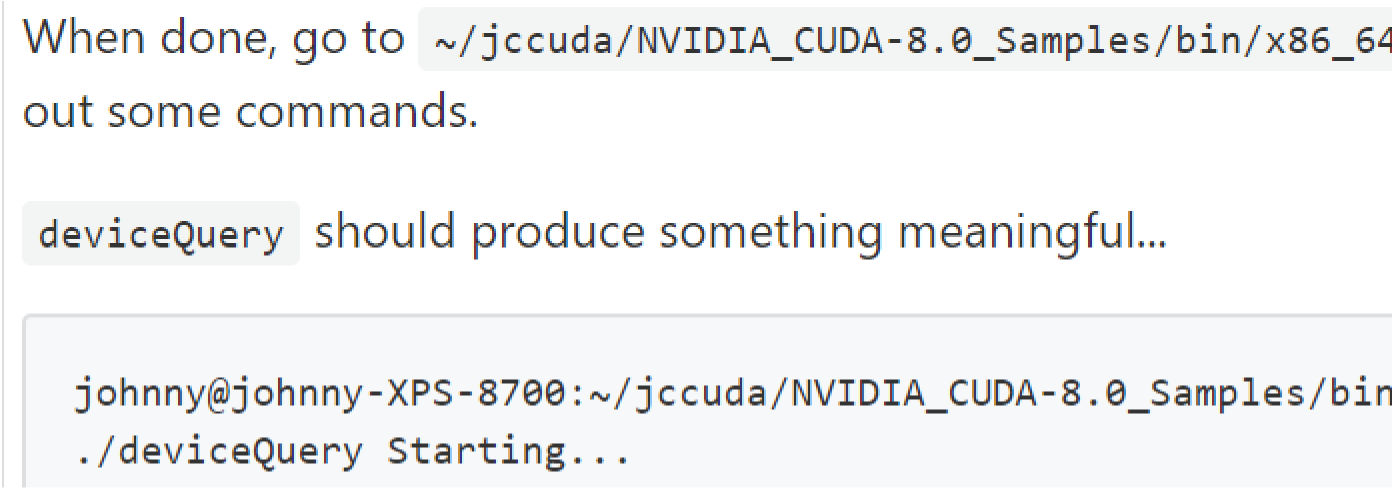
```
nvcc --version
```

```
nvcc -V

lspci -v

cat /proc/driver/nvidia/version
```

```
cuda-install-samples-9.0.sh ~/rogerCUDA
```

# ir al directorio

make



When done, go to `~/jccuda/NVIDIA_CUDA-8.0_Samples/bin/x86_64`
out some commands.

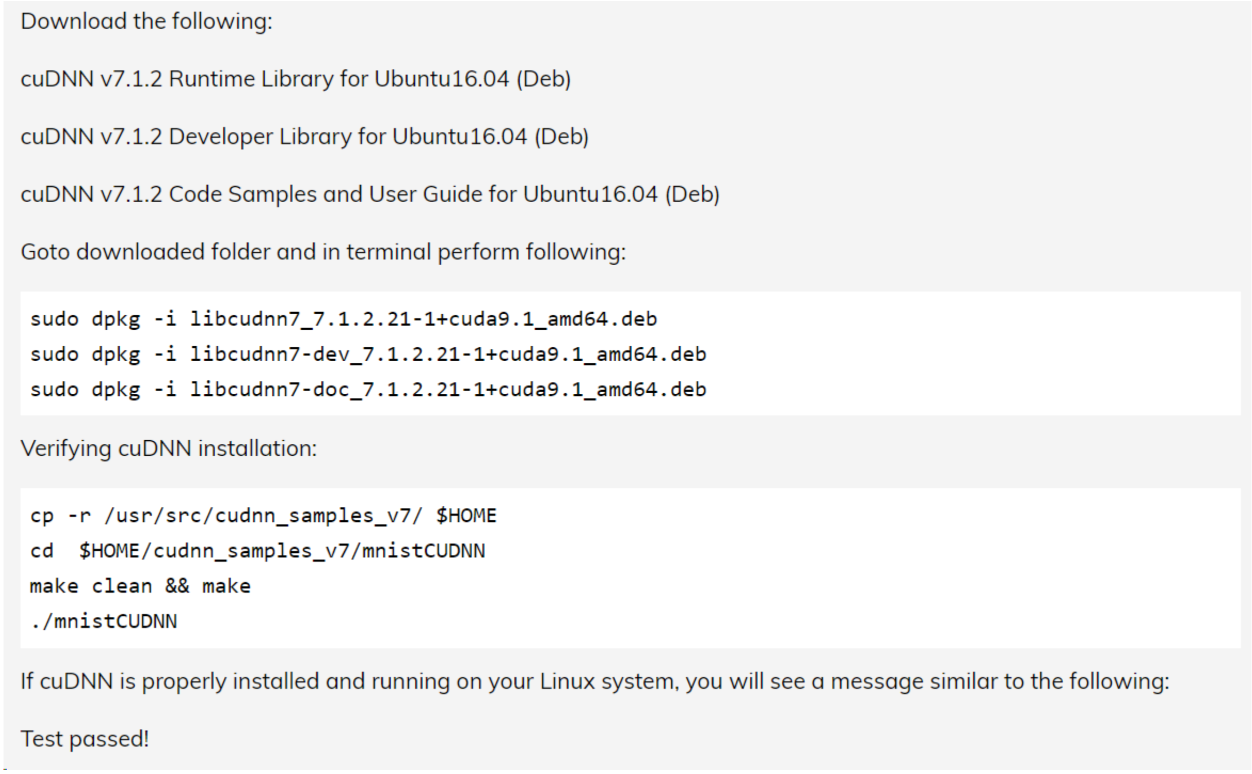
`deviceQuery` should produce something meaningful...

```
johnny@johnny-XPS-8700:~/jccuda/NVIDIA_CUDA-8.0_Samples/bin
./deviceQuery Starting...
```

Para instalar CuDNN

https://developer.nvidia.com/rdp/cudnn-archive

versión 7.0.5



Download the following:

cuDNN v7.1.2 Runtime Library for Ubuntu16.04 (Deb)

cuDNN v7.1.2 Developer Library for Ubuntu16.04 (Deb)

cuDNN v7.1.2 Code Samples and User Guide for Ubuntu16.04 (Deb)

Goto downloaded folder and in terminal perform following:

```
sudo dpkg -i libcudnn7_7.1.2.21-1+cuda9.1_amd64.deb
sudo dpkg -i libcudnn7-dev_7.1.2.21-1+cuda9.1_amd64.deb
sudo dpkg -i libcudnn7-doc_7.1.2.21-1+cuda9.1_amd64.deb
```

Verifying cuDNN installation:

```
cp -r /usr/src/cudnn_samples_v7/ $HOME
cd  $HOME/cudnn_samples_v7/mnistCUDNN
make clean && make
./mnistCUDNN
```

If cuDNN is properly installed and running on your Linux system, you will see a message similar to the following:

Test passed!

sudo apt-get install python3-venv

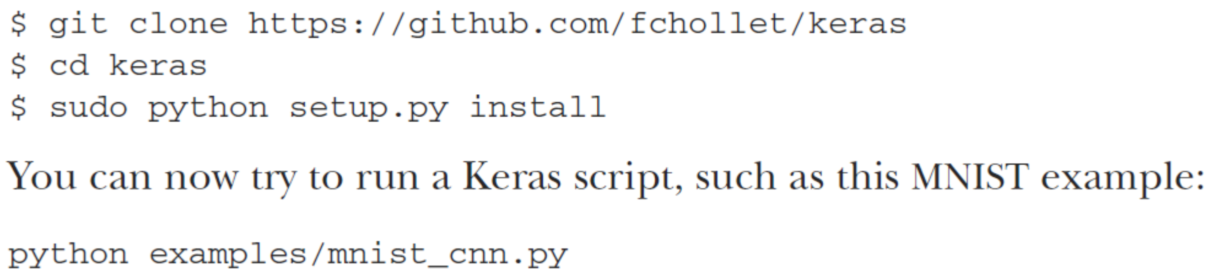
# create virtual environment for tensorflow

python3 -m venv tf_env

source tf_env /bin/activate

#deactivate para cerrar el entorno

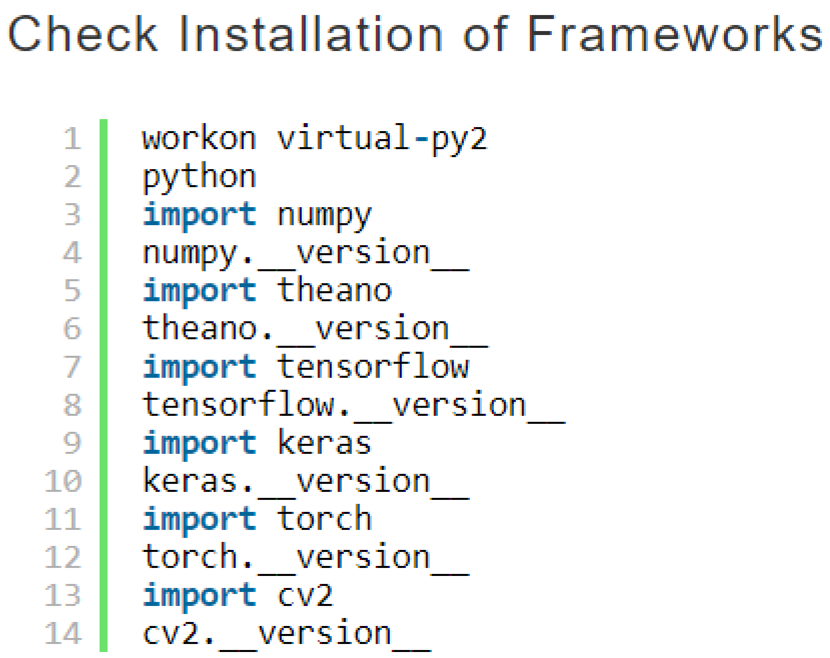
sudo pip3 install tensorflow-gpu==1.5



```
$ git clone https://github.com/fchollet/keras
$ cd keras
$ sudo python setup.py install
```

You can now try to run a Keras script, such as this MNIST example:

```
python examples/mnist_cnn.py
```



Check Installation of Frameworks

```
workon virtual-py2
python
import numpy
numpy.__version__
import theano
theano.__version__
import tensorflow
tensorflow.__version__
import keras
keras.__version__
import torch
torch.__version__
import cv2
cv2.__version__
```

```
apt-get update && apt-get install -y --allow-downgrades --no-install-recommends \
    libcudnn7=7.0.5.15-1+cuda9.0 \
    libcudnn7-dev=7.0.5.15-1+cuda9.0 && \
    rm -rf /var/lib/apt/lists/*
```