

MSc Research Project

PGDCYB_Jan 2024- Aug 2024

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Configuration Manual

1 x Tower

- Dell Power Edge T110 II
- Processor Intel Xeon E3-1230 V2 x 8
- Memory 8gb
- 64bit
- HD SSD 2TB
- OS: Ubuntu 24.04 LTS

Install:

Anaconda (www.anaconda.org)

Create the Anaconda Environment and then install libraries Via PIP:

Pytorch:

www.pytorch.com

(There are numerous options here. I have used PIP with no Cuda).

(Verify the installation)

Python #Opens a python shell in the command line

```
import torch
x = torch.rand(5, 3)
print(x)
```

(Output should be something like)

```
tensor([[0.3380, 0.3845, 0.3217],
        [0.8337, 0.9050, 0.2650],
        [0.2979, 0.7141, 0.9069],
        [0.1449, 0.1132, 0.1375],
        [0.4675, 0.3947, 0.1426]])
```

```
root@kali: /home/kali
File Actions Edit View Help
(204.1 MB)
204.1/204.1 MB 9.3 MB/s eta 0:00:00
Collecting nvidia-nccl-cu11==2.20.5 (from torch)
  Downloading https://download.pytorch.org/whl/cu118/nvidia_nccl_cu11-2.20.5-py3-none-manylinux2014_x86_64.whl (142.9 MB)
142.9/142.9 MB 11.9 MB/s eta 0:00:00
Collecting nvidia-nvtx-cu11==11.8.86 (from torch)
  Downloading https://download.pytorch.org/whl/cu118/nvidia_nvtx_cu11-11.8.86-py3-none-manylinux1_x86_64.whl (99 kB)
99.1/99.1 kB 8.6 MB/s eta 0:00:00
Collecting triton==3.0.0 (from torch)
  Downloading https://download.pytorch.org/whl/triton-3.0.0-1-cp311-cp311-manylinux2014_x86_64.whl (209.4 MB)
209.4/209.4 MB 7.6 MB/s eta 0:00:00
Requirement already satisfied: numpy in /usr/lib/python3/dist-packages (from torchvision) (1.26.4)
Requirement already satisfied: pillow<8.3.0, >=5.3.0 in /usr/lib/python3/dist-packages (from torchvision) (10.3.0)
Installing collected packages: triton, nvidia-nvtx-cu11, nvidia-nccl-cu11, nvidia-cuspars-cu11, nvidia-curand-cu11, nvidia-cufft-cu11, nvidia-cuda-runtime-cu11, nvidia-cuda-nvrtc-cu11, nvidia-cuda-cupti-cu11, nvidia-cublas-cu11, fsspec, nvidia-cusolver-cu11, nvidia-cudnn-cu11, torch, torchvision, torchaudio
Successfully installed fsspec-2024.2.0 nvidia-cublas-cu11-11.11.3.6 nvidia-cuda-cupti-cu11-11.8.87 nvidia-cuda-nvrtc-cu11-11.8.89 nvidia-cuda-runtime-cu11-11.8.89 nvidia-cudnn-cu11-9.1.0.70 nvidia-cufft-cu11-10.9.0.58 nvidia-curand-cu11-10.3.0.86 nvidia-cusolver-cu11-11.4.1.48 nvidia-cuspars-cu11-11.7.5.86 nvidia-nccl-cu11-2.20.5 nvidia-nvtx-cu11-11.8.86 torch-2.4.0+cu118 torchaudio-2.4.0+cu118 torchvision-0.19.0+cu118 triton-3.0.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager, possibly rendering your system unusable. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv. Use the --root-user-action option if you know what you are doing and want to suppress this warning.

(root@kali)-[/home/kali]
# python
Python 3.11.9 (main, Apr 10 2024, 13:16:36) [GCC 13.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import torch
>>> x = torch.rand(5, 3)
>>> print(x)
tensor([[0.3451, 0.5856, 0.5613],
        [0.7710, 0.6059, 0.5762],
        [0.0293, 0.8008, 0.4356],
        [0.9025, 0.2977, 0.9816],
        [0.1764, 0.5720, 0.4718]])
>>> 
```

```
pip install seaborn
python -m pip install -U pip
python -m pip install -U matplotlib
pip install numpy
python -m venv sklearn-env
sklearn-env\Scripts\activate # activate
pip install -U scikit-learn
pip install python-math
```

Sklearn:

<https://scikit-learn.org>

Following Linux Command Line code is used:

Sudo su

Sudo apt-get update

Sudo apt-get upgrade

(Do you want to continue yes)

Anaconda

apt-get install libgl1-mesa-glx libegl1-mesa libxrandr2 libxrandr2 libxss1 libxcursor1

libxcomposite1 libasound2 libxi6 libxtst6

curl -O https://repo.anaconda.com/archive/Anaconda3-<INSTALLER_VERSION>-Linux-x86_64.sh

bash ~/Downloads/Anaconda3-<INSTALLER_VERSION>-Linux-x86_64.sh

(Anaconda recommends you accept the default install location. Do not choose the path as /usr for the Anaconda/Miniconda installation.)

source ~/.bashrc

1 x Laptop

OS Windows 11:

Virtual Box:

<https://www.virtualbox.org/wiki/Downloads>

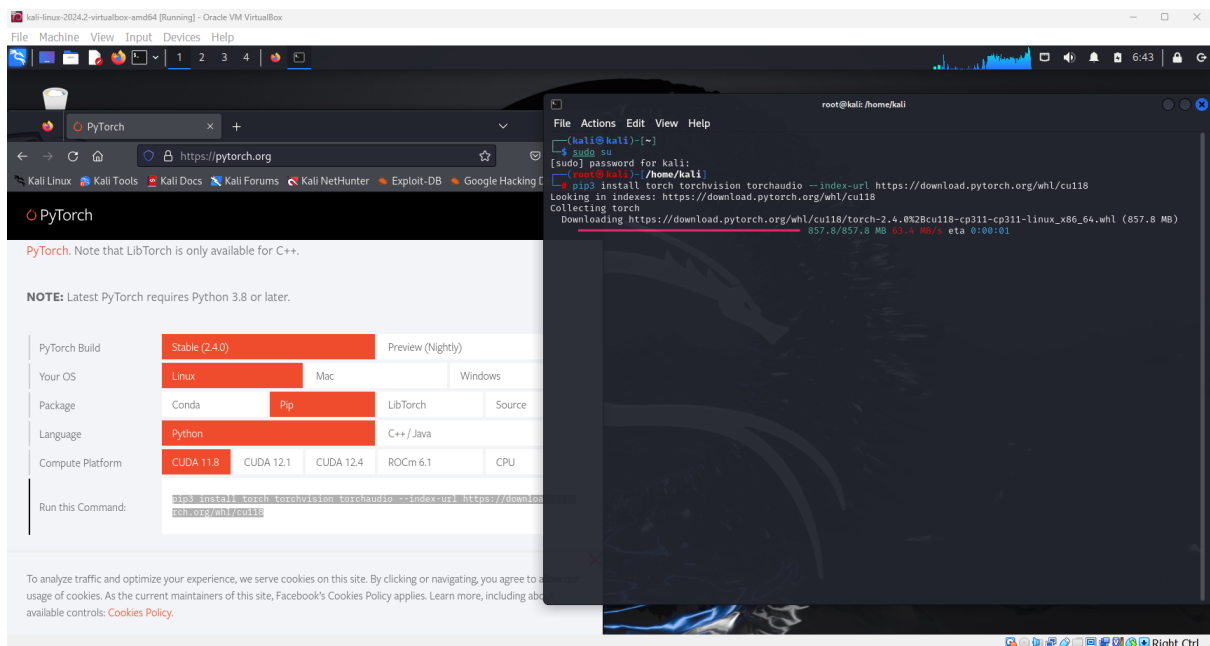
Kali (VirtualBox instance):

<https://www.kali.org/get-kali/#kali-virtual-machines>



Install Pytorch:

Go to <https://pytorch.org> and use the install command:



(There are numerous options here. I have used PIP with no Cuda).

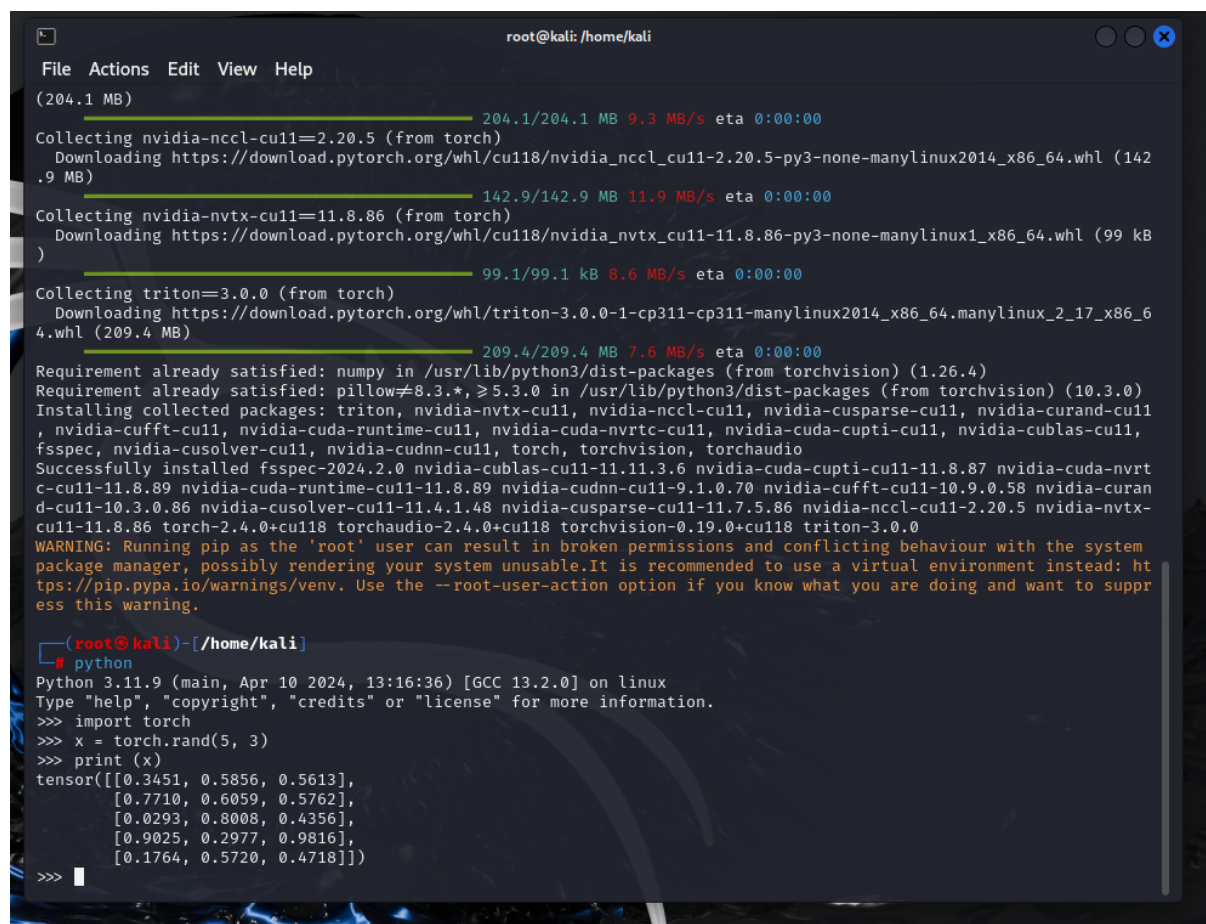
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