**CUDA Setup on GPU**

**Method 1 (Recommended):** Using Conda you can setup all dependency please refer below link for details:

Link: <https://towardsdatascience.com/tensorflow-gpu-installation-made-easy-use-conda-instead-of-pip-52e5249374bc>

**Method 2**: You need to install NVIDIA graphics drivers and CUDA 10.1 using below link:

<https://www.tensorflow.org/install/gpu>

For Tensorflow 2.3.0 is not supporting CUDA 10.1 for that you need to install CUDA 10.2 along with 10.1

Please refer below link for details:

<https://arabelatso.github.io/2020/01/08/Install%20CUDA%20Toolkit%2010.2%20on%20Ubuntu%2018.04.3/>

Also you need to build custom tensorflow 2.3.0 package using link: <https://www.tensorflow.org/install/source#gpu>

**Enable and Disable GPU while training model**

To Run code on CPU and disable GPU add below line in code

import os

os.environ["CUDA\_VISIBLE\_DEVICES"]="-1"

To Run code on GPU by default Tensorflow and Pytorch search for GPU and run code on it

If you want to use only specific GPU to run code, Example we have 2 GPU and we want to run code on 1st GPU add below lines in code

import os

os.environ["CUDA\_VISIBLE\_DEVICES"]="0"

If you want to run code on 2nd GPU then use below code

import os

os.environ["CUDA\_VISIBLE\_DEVICES"]="1"

**Observation during making & execution of Pytorch code:**

Steps to remember (high note):

1. In Tensorflow every model making up starts with graph and to initiate we call tensor sessions in Pytorch framework you have tell whether you are going to CPU or GPU

device = torch.device("cuda" if torch.cuda.is\_available() else "cpu")

1. As I have already made note that in Tensorflow every graph initiate with session here is little bit different here first you need to make model as object and then you need to tell model when to train & eval.

model.train() model.eval()

1. On more special note that when you executing model in cpu you don’t need to tell model to pass params to gpu but when you are using gpu if cuda is there then you need to tell model that pls pass params to gpu.

model.cuda()

These were basically very small fixes but takes alot time when you are new to the framework