

# tensorflow

- description : tensorflow
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## Tensorflow

### Install

Ubuntu 18.04 (GPU version)

1. CUDA Toolkit 10.1 update2

```
https://developer.nvidia.com/cuda-toolkit-archive ( 가 )
```

tip: Tensorflow2 gpu 가

2. cuDNN v7.6.4

```
https://developer.nvidia.com/rdp/cudnn-archive ( 가 )
```

tip: CUDA Toolkit 10.1 update2

3. python3.8

```
https://linuxize.com/post/how-to-install-python-3-8-on-ubuntu-18-04/
```

4. NVIDIA driver

```
$> nvidia-smi
$> ubuntu-drivers devices
$> sudo ubuntu-drivers autoinstall
```

<https://linuxconfig.org/how-to-install-the-nvidia-drivers-on-ubuntu-18-04-bionic-beaver-linux>  
NVIDIA

### gpu code

```
from tensorflow.python.client import device_lib
```

## device\_lib.list\_local\_devices()

```
명령 프롬프트 - python
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\thons\python
Python 3.7.3 (default, Mar 27 2019, 17:13:21) [AMD64] :: Anaconda, Inc. on win32

Warning:
This Python interpreter is in a conda environment, but the environment has
not been activated. Libraries may fail to load. To activate this environment
please see https://conda.io/activation

Type "help", "copyright", "credits" or "license()" for more.
>>> from tensorflow.python.client import device_lib
2019-12-30 15:24:05.176020: I tensorflow/stream_executor/platform/default/dso_loader.cc:44] Successfully opened dynamic library cudart64_100.dll
>>> device_lib.list_local_devices()
2019-12-30 15:24:16.145105: I tensorflow/core/platform/cpu_feature_guard.cc:142] Your CPU supports instructions that this TensorFlow binary was not compiled
to use: AVX2
2019-12-30 15:24:16.152572: I tensorflow/stream_executor/platform/default/dso_loader.cc:44] Successfully opened dynamic library nvcuda.dll
2019-12-30 15:24:17.347524: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1618] Found device 0 with properties:
name: GeForce GTX 1050 with Max-Q Design major: 6 minor: 1 memoryClockRate(GHz): 1.3285
pciBusID: 0000:02:00:0
2019-12-30 15:24:17.353958: I tensorflow/stream_executor/platform/default/dlopen_checker_stub.cc:25] GPU libraries are statically linked, skip dlopen check.
2019-12-30 15:24:17.358448: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1746] Adding visible gpu devices: 0
2019-12-30 15:24:18.211620: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1159] Device interconnect StreamExecutor with strength 1 edge matrix:
2019-12-30 15:24:18.215098: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1165] 0
2019-12-30 15:24:18.217345: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1178] 0:  N
2019-12-30 15:24:18.220051: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1304] Created TensorFlow device (/device:GPU:0 with 3003 MB memory) => physical
GPU device: 0, name: GeForce GTX 1050 with Max-Q Design, pci bus id: 0000:02:00:0, compute capability: 6.1
(device:GPU:0)
name: "/device:GPU:0"
device_type: "GPU"
memory_limit: 289435456
locality {}
incarnation: 934953327975959300
name: "/device:GPU:0"
device_type: "GPU"
memory_limit: 3149044121
locality {
  bus_id: 1
  links {}
}
incarnation: 10703156756438546676
physical_device_desc: "device: 0, name: GeForce GTX 1050 with Max-Q Design, pci bus id: 0000:02:00:0, compute capability: 6.1"
>>>
```

### Ref

[tensorflow GPU](#)

### Tip

[33. TensorFlow 2.0 Release](#)    - Tf.Session & Tf.Placeholder    , @Tf.Function, Tf\_upgrade\_v2  
SyntaxError regarding async when attempting to jupyter

```
dhan@dhan-linux:~$ jupyter notebook --ip=0.0.0.0 --port=8888 --allow-root
[I 17:59:50.050 NotebookApp] Writing notebook server cookie secret to
/home/dhan/.local/share/jupyter/runtime/notebook_cookie_secret
Traceback (most recent call last):
  File "/home/dhan/.local/bin/jupyter-notebook", line 8, in <module>
    sys.exit(main())
  File "/home/dhan/.local/lib/python3.8/site-
packages/jupyter_core/application.py", line 270, in launch_instance
    return super(JupyterApp, cls).launch_instance(argv=argv, **kwargs)
  File "/home/dhan/.local/lib/python3.8/site-
packages/traitlets/config/application.py", line 663, in launch_instance
    app.initialize(argv)
  File "<decorator-gen-7>", line 2, in initialize
  File "/home/dhan/.local/lib/python3.8/site-
packages/traitlets/config/application.py", line 87, in catch_config_error
```

```
    return method(app, *args, **kwargs)
File "/home/dhan/.local/lib/python3.8/site-
packages/notebook/notebookapp.py", line 2037, in initialize
    self.init_webapp()
File "/home/dhan/.local/lib/python3.8/site-
packages/notebook/notebookapp.py", line 1675, in init_webapp
    self.web_app = NotebookWebApplication(
File "/home/dhan/.local/lib/python3.8/site-
packages/notebook/notebookapp.py", line 183, in __init__
    settings = self.init_settings(
File "/home/dhan/.local/lib/python3.8/site-
packages/notebook/notebookapp.py", line 302, in init_settings
    nbextensions_path=jupyter_app.nbextensions_path,
File "/home/dhan/.local/lib/python3.8/site-
packages/notebook/notebookapp.py", line 1292, in nbextensions_path
    from IPython.paths import get_ipython_dir
File "/home/dhan/.local/lib/python3.8/site-packages/IPython/__init__.py",
line 55, in <module>
    from .core.application import Application
File "/home/dhan/.local/lib/python3.8/site-
packages/IPython/core/application.py", line 25, in <module>
    from IPython.core import release, crashhandler
File "/home/dhan/.local/lib/python3.8/site-
packages/IPython/core/crashhandler.py", line 27, in <module>
    from IPython.core import ultratb
File "/home/dhan/.local/lib/python3.8/site-
packages/IPython/core/ultratb.py", line 116, in <module>
    from IPython.utils import path as util_path
File "/home/dhan/.local/lib/python3.8/site-
packages/IPython/utils/path.py", line 17, in <module>
    from IPython.utils.process import system
File "/home/dhan/.local/lib/python3.8/site-
packages/IPython/utils/process.py", line 19, in <module>
    from ._process_posix import system, getoutput, arg_split, check_pid
File "/home/dhan/.local/lib/python3.8/site-
packages/IPython/utils/_process_posix.py", line 23, in <module>
    import pexpect
File "/usr/lib/python3/dist-packages/pexpect/__init__.py", line 75, in
<module>
    from .pty_spawn import spawn, spawnu
File "/usr/lib/python3/dist-packages/pexpect/pty_spawn.py", line 14, in
<module>
    from .spawnbase import SpawnBase
File "/usr/lib/python3/dist-packages/pexpect/spawnbase.py", line 224
    def expect(self, pattern, timeout=-1, searchwindowsize=-1, async=False):
        ^
```

**SyntaxError:** invalid syntax

<https://askubuntu.com/questions/1106943/syntaxerror-regarding-async-when-attempting-to-run-jupyter-in-python-3-7>

# Troubleshooting

## Ref

, [tensorflow](#)

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