Machine Learning Workshop - Package installation guide

1. Install new NVIDIA graphics driver (can be skipped, if only CPU version of TensorFlow will be used)

2. Open anaconda prompt and create a named environment and install the GPU version of TensorFlow in it:

   conda create --name tf_gpu tensorflow-gpu

alternatively install TensorFlow-GPU or TensorFlow (e.g. if no compatible GPU device is available) into an environment of your choice:

conda activate yourenv

conda install tensorflow-gpu / conda install tensorflow

3. Activate the newly created environment or the environment of your choice:

   conda activate tf_gpu

4. Install Keras into the environment:

   conda install keras

5. Install Scikit-learn:

   conda install scikit-learn

   try the following if error message occurs in steps 8 or 9

   pip uninstall scipy

   pip install scipy

6. Install Pandas:

   conda install pandas

7. Open a Python console from within the Anaconda prompt:

   python

8. Import TensorFlow:

   import tensorflow as tf

9. Import Scikit-learn:

   import sklearn

If this error message ("ImportError: cannot import name '_ccallback_c'") occurs, try to execute the commands written inside the red rectangle of step 5 above

10. Check availability of GPU devices to Keras:

    from keras import backend as K

    K.tensorflow_backend._get_available_gpus()

(The output of the function above should look comparable to the screenshot below, if successful.)

```
In [21]: K.tensorflow_backend._get_available_gpus()
Out[21]: ['/job:localhost/replica:0/task:0/device:GPU:0']
```

If this error message ("ImportError: cannot import name '_ccallback_c'") occurs, try to execute the commands written inside the red rectangle of step 5 above

11. Check availability of GPU devices to TensorFlow:

    from tensorflow.python.client import device_lib

    print(device_lib.list_local_devices())

(The output of the function above should look comparable to the screenshot below, if successful.)

```
In [17]: print(device_lib.list_local_devices())
[name: "/device:CPU:0"
device_type: "CPU"
memory_limit: 268435456
locality {
}
incarnation: 4922362647225188661
, name: "/device:GPU:0"
device_type: "GPU"
memory_limit: 1214939136
locality {
  bus_id: 1
  links {
  }
}
incarnation: 7847490353494708522
physical_device_desc: "device: 0, name: GeForce GTX 750 Ti, pci bus id:
0000:03:00.0, compute capability: 5.0"
]
```

12. Check availability of Scikit-learn:

13. **print(sklearn)**