

Gear up for the course!

- Install Miniconda or Anaconda
 - An easy-to-use programming environment manager on Windows, macOS, and Linux.
 - Download: <https://conda.io/miniconda.html>
 - Installation: <https://conda.io/docs/user-guide/install/index.html#regular-installation>
 - Check your installation by typing `conda --version` in Terminal or Anaconda Prompt.
- Create environment CS5242 and install Tensorflow + Keras

```
# open Terminal (macOS/linux) or Anaconda Prompt (Windows)
# type the things after '$':
$ conda create -n CS5242 python=3.6 numpy matplotlib
$ source activate CS5242
(CS5242)$ pip install tensorflow keras
```

- Configure Keras to use tensorflow as its backend: <https://keras.io/backend/>

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- Use the IDE you like if you already have one, or:
- VS-code:
 - Download: <https://code.visualstudio.com/download>
 - Select CS5242 environment before coding:
https://code.visualstudio.com/docs/python/environments#_select-an-environment
- PyCharm:
 - Free professional license for students: <https://www.jetbrains.com/student/>
 - Download: <https://www.jetbrains.com/pycharm/download/>
 - Select CS5242 environment before coding:
<https://www.jetbrains.com/help/pycharm/conda-support-creating-conda-virtual-environment.html>

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- More to read about Tensorflow and Keras

- <https://www.tensorflow.org/tutorials/>

- <https://keras.io/#getting-started-30-seconds-to-keras>

- Your workflow with environment CS5242:

```
# open Terminal (macOS/linux) or Anaconda Prompt (Windows)
# type the things after '$':
$ source activate CS5242
(CS5242)$ ### Do whatever you want
$ source deactivate
```

- Try out now and we will be here for 30 mins to assist you.

Use NSCC's GPU

- 100,000 free GPU hours for NUS students and staffs.
- Download files and install anaconda/miniconda:
 - Step 1: ssh eXXXXXXXX@nus.nscg.sg
 - Step 2: ssh nscg04-ib0
 - Step 3: use curl or wget to download anaconda/miniconda
 - Step 4: install tensorflow-**gpu** and keras using anaconda:

```
conda install tensorflow-gpu keras
```

- Starter Guide:

https://help.nscg.sg/wp-content/uploads/2017/06/NSCC_New_User_Starter_Guide_v0.1.pdf

- Submitting jobs: <https://help.nscg.sg/pbspro-quickstartguide/>
 - You cannot make use of GPU if you don't learn to submit jobs.
- Read the documents! <https://help.nscg.sg/user-guide/>

Use NSCC's GPU

Example NSCC job script:

```
#!/bin/bash
#PBS -q gpu
#PBS -j oe
#PBS -l select=1:ncpus=1
#PBS -l walltime=23:00:00
#PBS -N CS5242_Hello

cd ${PBS_0_WORKDIR}
source activate CS5242
python -c "import keras; print('if you see no errors, it\'s good to go.')"

```

- Use `qsub your_job_script.pbs` to submit
- See output in `<job_name>.oXXXXXXXX`