
COMP411/511: PyTorch Tutorial

Official PyTorch Tutorial

PyTorch is a framework for developing deep-learning models in Python. You will use this library in your assignments throughout the course. The official PyTorch website provides a great tutorial. You should follow the official tutorial here: <https://pytorch.org/tutorials/beginner/basics/intro.html>

Please follow all the chapters:

- [Learn the Basics](#)
- [Quickstart](#)
- [Tensors](#)
- [Datasets & DataLoaders](#)
- [Transforms](#)
- [Build Model](#)
- [Autograd](#)
- [Optimization](#)
- [Save & Load Model](#)

Each chapter has some codes that you need to run. To be able to run the code, you need to set up PyTorch. You have 2 options:

- **Run in the cloud:** This method is very easy. Each section has a “Run in Google Colab” link at the top, which opens an integrated notebook in Google Colab with the code in a fully-hosted environment. PyTorch is already installed in these environments and you can directly start running the code. However, make sure that you have allocated a GPU, by going into Runtime > Change runtime type and selecting a GPU (T4 GPU), so that your code runs on GPU instead of CPU.
- **Run Locally:** In this method, you will run the code on your own computer. So, you need to install PyTorch yourself. We recommend using conda environments for installing PyTorch and its dependencies. You can refer to the instructions of Exercise 0 for creating a conda environment. Please follow the instructions at <https://pytorch.org> to install PyTorch. You need to select CUDA to be able to run your code on your GPU. (Note that CUDA **is not available** for Mac computers, and they only support running on CPU). You can use **pip** or **conda** to install any dependencies that you may need. For example, to install matplotlib library:

```
$ pip install matplotlib jupyterlab
```

You need to install jupyter to be able to run the notebooks. Please follow <https://jupyter.org/install> to install jupyter lab, and then download the notebooks in the tutorial by selecting “Download Notebook”.