Setting up your python environment

Download and install anaconda from https://www.anaconda.com/products/individual#Downloads. This is a package manager that will make life easier for us.

On Mac, to check that anaconda is installed correctly go to your terminal and type “conda list”. If it doesn't work it'll tell you the command "conda" is unknown, otherwise it'll print a bunch of things to the terminal.

On Windows you should have a new application called anaconda prompt, which is the equivalent to a terminal for anaconda. Whenever I refer to the terminal or running commands in anaconda this is what I refer too.

Once we have this working, we can install the libraries we need. One library that's very commonly used for machine learning is tensorflow. It can also be a bit annoying to install so it'll be easier if we install it first. To do this, go to your terminal and run:

conda create -n tfEnv tensorflow==2.1.0

tfEnv is the name of the environment your creating, you can rename it however you want. It might ask you to confirm by typing in "y". We’re requiring the version 2.1.0 of tensorflow, you can remove “==2.1.0” to have the latest version but it might cause compatibility issues with other libraries. You can also request another version by changing “2.1.0”.

We then need to activate your environment with

conda activate tfEnv

Then we'll start installing more librairies, for example jupyter to use jupyter notebooks. If you go to https://anaconda.org/anaconda/jupyter you'll find the command needed to install jupyter:

conda install -c anaconda jupyter

I've copied in below the commands required for a bunch of libraries that I think will be useful along with a description of what they are.

conda install -c anaconda scikit-learn - scikit-learn is a library often you used for data preprocessing and machine learning
conda install -c anaconda matplotlib - a nice plotting library
conda install -c anaconda seaborn - another nice plotting library
conda install -c conda-forge uproot - uproot reads the .root files which I gave you.

To check these are installed just open a jupyter notebook and try the line "import uproot", or any other library name (except scikit-learn which is imported with import sklearn). On

Mac you'll need to have your environment active before opening the jupyter notebooks. On Windows you should now have a new jupyter notebook executable called Jupyter Notebook (tfEnv).

In the future, if you need to install other libraries all you need to do is activate your environment before running the relevant conda install command, which you can find on the anaconda.org website by googling anaconda and the name of your library.

If you want to remove an environment for whatever reason you can do

conda env remove -n tfEnv

(or whatever your environment name is instead of tfEnv). One of the good things about creating separate environments is that they are self-contained, and so you don't have to worry about "messing something up".