

# MLG

## Installation of the Python environment

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The purpose of this document is to guide you through the installation of the tools associated to Python (packages) that are needed for the practical works during the current semester.

To follow this tutorial you'll need:

- An internet connection
- A **requirements.txt** file provided by the teacher or assistant

We recommend you to install Miniconda and use a virtual environment to set up your tools, but you are free to install Python and its packages in the whole system. If you use virtual environments you can install the Python packages of each practical work in a separate folder without interfering with the Python installation of your system.

In any case, the essential packages are listed in the requirements file. You must install these packages to cope with the goals of the practical works during the current semester.

### **Install Miniconda**

**Anaconda** is a freemium open source distribution of the Python and R programming languages for large-scale data processing, predictive analytics, and scientific computing, that aims to simplify package management and deployment (from Wikipedia). **Miniconda** is a lightweight version of Anaconda that includes all the package administration tools needed, but not the packages: you only install the packages you need.

Head to <https://conda.io/miniconda.html>, download an installer for your operative system and install it. Choose whether to use 32 or 64 bits version, and choose whether to use Python 2.X or Python 3.X. We encourage you to select the 64 bits version with Python 3.

### **Create a virtual environment with the tools you need**

A virtual environment will set up a local Python environment with specific requirements without polluting the whole installation (system-wide or local)<sup>1</sup>. You are free to create a virtual environment per practical work, or to create a single virtual environment for the whole course.

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<sup>1</sup> <http://docs.python-guide.org/en/latest/dev/virtualenvs/>

At each practical work, you will be provided with a file called **requirements.txt** which contains a list of all the packages you have to install. You have to use this file at this point:

```
:~$ mkdir pw_folder
:~$ cd pw_folder
:~$ conda create --name my_pw python=3.X
:~$ source activate my_pw
:~$ pip install -r requirements.txt
:~$ ipython kernel install --user --name=my_pw
:~$ source deactivate
```

You can install additional packages to your virtual environment by doing:

```
:~$ source activate my_pw
:~$ pip install package_name
:~$ source deactivate
```

Windows users should use `activate my_pw` instead of `source activate my_pw`.

### Explore the notebooks

Once your virtual environment is set up, you can access the notebook server by opening a terminal and executing:

```
:~$ jupyter notebook
```

Then, use your browser to access the notebook server at <https://localhost:8888>

Select the appropriate kernel. Each virtual environment should have a kernel with the same name