1 Overview

For this course we will use Python for the programming assignments. Supporting code and template .py files will be given for most assignments. Jupyter hand ins are accepted and encouraged. To properly setup a working environment for this course, a number of packages are required; instructions are listed below.

We will need the following packages:

1. Pip packages manager
2. numpy
3. matplotlib
4. scipy
5. scikit-learn Installation guide

2 Unix Installation

For Unix based systems such as Linux and Mac, Python comes already installed in the system. You should have 2 version of Python a 2.x version and a 3.x version. Depending on which one you use, install pip accordingly. If you don't know which version is your default, launch a terminal, type python, and read the output on the terminal when the environment readies. Otherwise you can invoke a specific version by typing in the terminal python3.x where x is the version number you wish to run.

Installing PiP
sudo apt install python-pip #python 2
sudo apt install python3-pip #python 3

Installing numpy
pip install numpy

Installing matplotlib
python -m pip install -U pip
python -m pip install -U matplotlib

The following commands should install scikit.

Installing scikit-learn
pip install -U scikit-learn

2.1 Installing Jupyter

Jupyter in an excellent environment for Python, which lends it matlab-like run functionality. Jupyter launches an environment and a kernel that attaches to the browser and can store all runtime variables for a python program as well as run it in a neat segments, called cells, that can help with debugging and understanding what the code does, without having to re-run everything from scratch. More can be found here.

Installing jupyter env and notebook
pip install jupyterlab
pip install notebook

3 Windows Installation

Windows unfortunately does not have a native Python installation; we need to install it. There is a very good installation guide here. Basically, you need to install the Python libraries by going to this page and selecting a Python version and an isntallation type; the executable installer works fine. Then setup the environment variables, so the system knows where Python is and can link any appropriate files easily; follow the step from the above guide. After you are done with python you need to install pip and all the required packages that are listed above, in section 1.