Cluster 5 (Biophysics) Home Computer Set-up and Installation Instructions (2023)

Overview

The biophysics section of Cosmos Cluster 5 will use the Python programming language in a Jupyter notebook environment to do our work. Don‘t worry, we will explain how to use these as we go along in the class. Before the class starts,however, we would like you to set up a python environment on the laptop or computer you plan to use for the class. Below we provide instructions for how to do this.

Your computer should meet the following requirements for a successful installation:

1. 64-bit CPU with at least 4 MB of main memory and two GB of free disk space.
2. One of the following operating systems installed: Windows 10, MacOS, or a version of Linux.
3. An Internet connection with reasonable speed.

Some of you may already have a working python and Jupyter notebook environment installed on your system. If so, great, you don‘t have to do anything. But you do need to confirm that you have the following versions and packages on your system:

1. Python version at 3.6 or higher.
2. Python packages for numpy, matplotlib, and random installed and working.
3. You can launch and interact with a Jupyter notebook.

If you do not have python or Jupyter notebooks installed, it is a fairly straight-forward process to install everything as described below.

For a new installation we highly recommend that you use the full Anaconda distribution described below. It contains all of the programs and packages you will need (and a few extra). While this software does require a lot of disk space (2GB), it will ensure that the right versions of all the packages and libraries that we will use are installed correctly.

Simplified Installation Instructions

- Go to the website for the Anaconda Individual Edition (it's free!):

  https://www.anaconda.com/products/individual

- Scroll almost to the bottom of this long page and find "Anaconda Installers".

  There should be three operating systems choices listed: Windows, MacOS, Linux.

  It shows the latest version of Python as 3.8 which is fine for us. For your computer's operating system, select the 64-bit installer and the download process will start. About 500MB of data is downloaded ,so it may take a while depending on your internet connection.

- Locate your downloaded file and double click it to start the installation.

- Most of the process is automated but here are some good websites with detailed step-by-step instructions for each operating system environment:

  More Detailed Installation Instructions:For MacOS

  https://www.datacamp.com/community/tutorials/installing-anaconda-mac-os-x

  More Detailed Installation Instructions:For Windows 10

  https://www.datacamp.com/community/tutorials/installing-anaconda-windows

  Anaconda website documentation

  Also, here is the Anaconda website documentation with detailed instructions. These are a little more technical and I think not as clear as the instructions in the website reference above.

  Visit https://docs.anaconda.com/anaconda/install/ and select your operating system for detailed instructions.

Attached Display or Monitor

For learning programming, it can be helpful to follow along with the instructor on your own jupyter notebook copy at home. If you have access to a separate monitor or tv screen, you can attach it to your laptop and configure dual or multiple displays. This will give you more room to follow Zoom instruction and enter along with your own interactive notebook. This is a convenience and **not** a requirement, so don't worry if you are using a single display laptop

Additional Help

If you get stuck installing Anaconda on your computer, first try searching the web for solutions. There are a lot of tutorials and problem solving sites online for this process. If you don't succeed before the first class, don't worry. Once class starts, you'll get additional help to get you running.