

## Installing conda

Conda is a package manager for python. The official install site:

<https://docs.anaconda.com/anaconda/install/>

Anaconda comes with a lot of tools for all kinds of python development projects, which makes it harder to see exactly what we need. Using the alternative **miniconda** installer gives us a bare-bones installation that is simpler to use once we get it set up.

Download it from the archive

<https://repo.anaconda.com/miniconda/>

Latest Version 2023-04-24 Note: this is also where to find the Mac M1 build

[Miniconda3-py38\\_23.3.1-0-Windows-x86\\_64.exe](#)

(python v3.8 is a little bit “safer” than v3.9 and v3.10; v3.7 is minimum required for our code)

After downloading, it is recommended to

1. Right-Click the installer icon and select **Run as Administrator**
2. Select **Install for All Users**
3. **Do not** use the default install folder C:\Program Files, create a new folder **c:\conda**

When installation is finished, find the *Anaconda Prompt* in the Start menu, Right-Click the installer icon and select **Run as Administrator**. This opens a command prompt (powershell) window, which we will need just for a few commands to get things set up.

To test your installation, run the command `conda list`

A list of installed packages appears if it has been installed correctly.

### 1. Installing the packages

The bare-bones installation has python, but not a lot more. We need to install our development environment - *JupyterLab* - and a handful of other packages for Machine Learning. For each one, conda will spin a little bit while it checks for related packages (dependencies), and then show you a list of what needs to be installed.

It is recommended to **install these packages one-by-one in this order**; just use the UpArrow key to get the command back when the first one finishes, and change the package name.

- o `conda install -c conda-forge jupyterlab`
- o `conda install -c conda-forge scikit-learn`
- o `conda install -c conda-forge pandas`
- o `conda install -c conda-forge "tensorflow>=2.3"`
- o `conda install -c conda-forge pydot`

- o `conda install -c conda-forge mlxtend`
- o `conda install -c conda-forge seaborn`
- o `conda install -c conda-forge matplotlib`
- o `conda install -c conda-forge scikit-plot`
- o `conda install -c conda-forge yellowbrick`

When the packages are installed, close the command prompt window by typing `exit`

## 2. Automating Startup

To avoid all of this command line in the future, download CondaStart.zip and extract the StartMenu folder from the zip file to the folder where Conda is installed (the path now is `c:\conda`)

Right-click the JupyterLab shortcut file and select

Properties > Advanced > select the checkbox **Run as Administrator**

If you did not install to `c:\conda`

Right-click the JupyterLab shortcut file and select

Properties > Check that the path to `startJupyterLab.bat` is correct

Properties > Change Icon > Browse > select the corresponding ico file

Now you can Right-click and click the JupyterLab shortcut file and select Send to > Desktop (create shortcut), then Right-click in Start menu and select 'Pin to Start'

## 3. JupyterLab Default Folder

The default folder for code files in `startJupyterLab.bat` is

`C:\Users\Public\Documents\jupyter`

So this is where you should extract the sample notebooks after you download them from Moodle. If you like, you can edit `startJupyterLab.bat` for your preferred path, this will set the new default directory for your Jupyter notebooks. Then right-click this folder and select "Pin to Quick Access" to make it easy to get to.

## 4. Normal Use

Selecting JupyterLab in the Start Menu will open a command prompt window to start the server. A few moments later your browser will open a JupyterLab tab.

For Clean Shutdown (Important!) choose File > Shutdown from the JupyterLab menu [this will close the command prompt window], then just close the JupyterLab tab in the browser.

## Common Install Problems

People have reported that sometimes the Chrome icon disappears. To restore the Chrome icon:

- Open IE and make it your default browser.
- Close IE.
- Open Chrome and make your default browser.
- >> All Icons are back <<

Anaconda is built on and for Linux, sometimes the config file has a different location for the python interpreter (careless packaging ...).

If this is the case, JupyterLab will keep putting up a message asking you to **Select a Kernel**

To fix this, start the Anaconda Command Prompt from the StartMenu and run the command

```
jupyter kernelspec list
```

It will return something like

```
c:\conda\share\jupyter\kernels\python3
```

Go to that folder and edit the file

```
kernel.json
```

Change the first **argv** line from

```
"C:/conda/bin/python",
```

To (no /bin!!)

```
"C:/conda/python",
```

Sometimes it won't work until the file path syntax is changed to windows style

```
"C:\\conda\\python",
```

For general troubleshooting advice see

<https://jupyter-notebook.readthedocs.io/en/stable/troubleshooting.html>