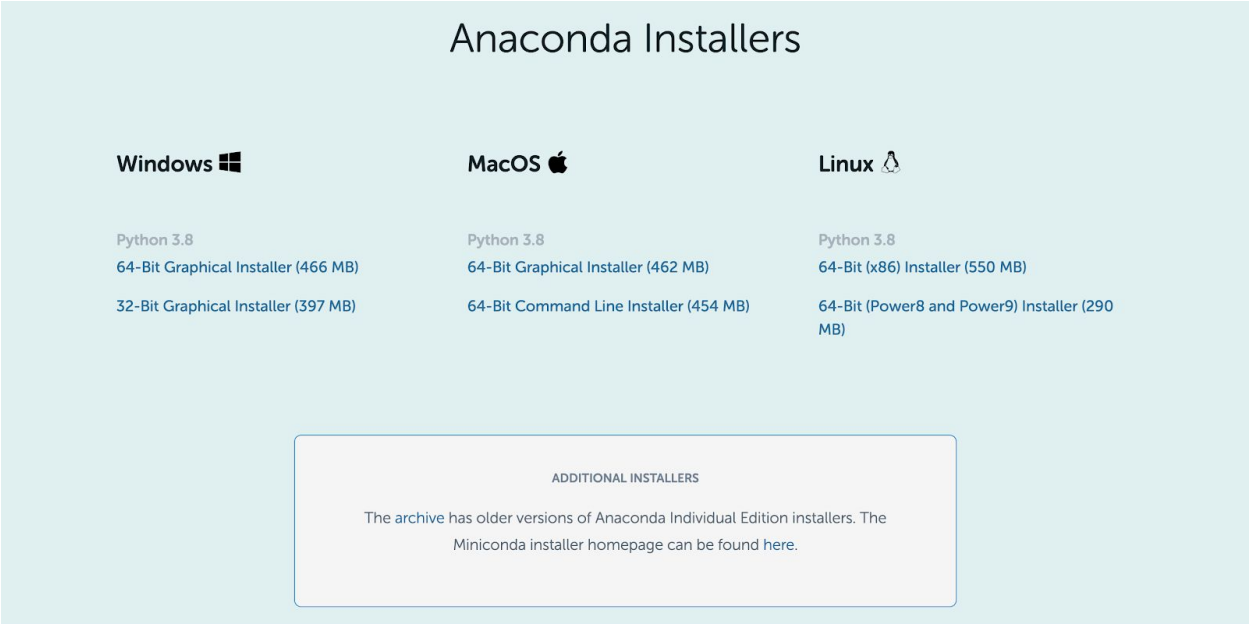
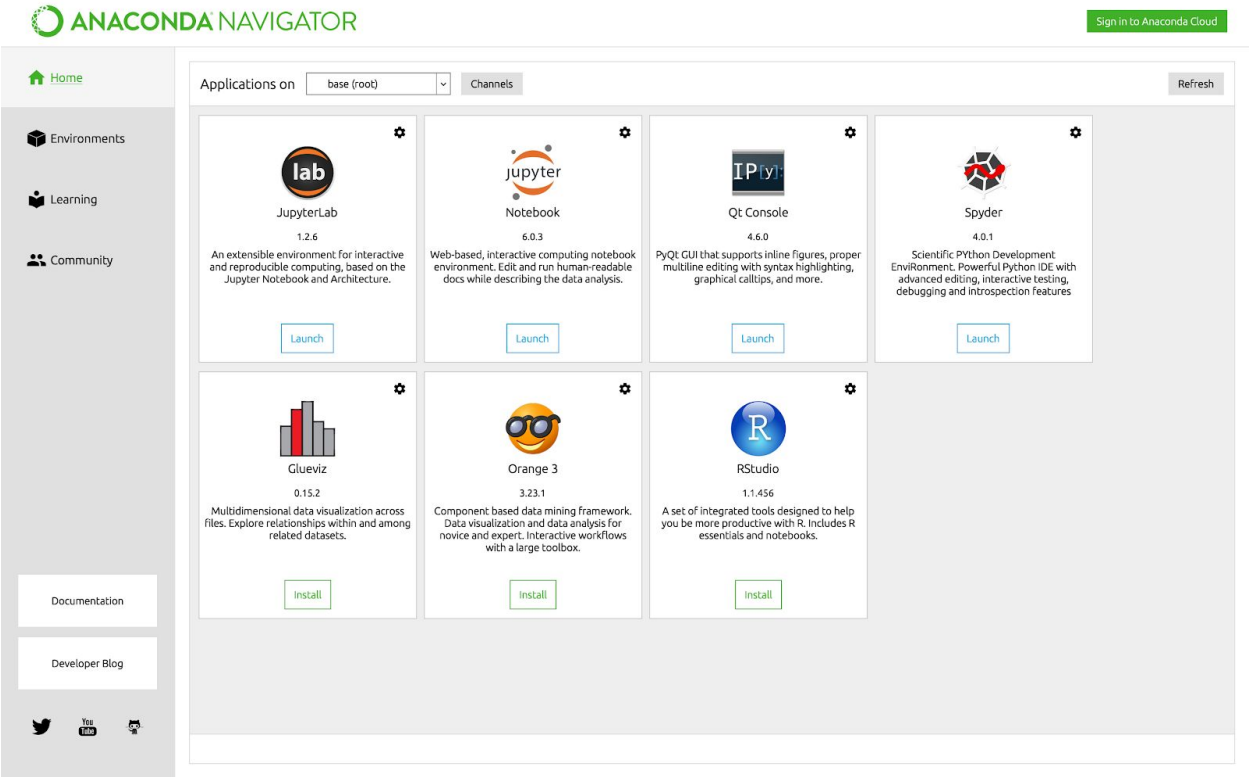
Setup your local environment

1- Install [Anaconda](#) (choose your system to install the correct one)



2- After installing it, open it, you will see the following packages already available like Jupyterlab, Jupyter Notebook, etc.



You can either use this interface and click on Launch for Jupyter Notebook OR you can use the terminal.

3- If you want to use the terminal (which is highly recommended and used by all the Data Scientists).

Because Anaconda is already installed in our system we can either type:

```
> jupyter notebook
```

```
mac@MBP-de-mac ~ % jupyter notebook
[I 16:17:10.658 NotebookApp] Loading IPython parallel extension
[W 16:17:10.659 NotebookApp] Error loading server extension jupyter_nbextensions_configurator
    Traceback (most recent call last):
      File "/opt/anaconda3/lib/python3.7/site-packages/notebook/notebookapp.py", line 1670, in init_server_extensions
        mod = importlib.import_module(modulename)
      File "/opt/anaconda3/lib/python3.7/importlib/__init__.py", line 127, in import_module
        return _bootstrap._gcd_import(name[level:], package, level)
      File "<frozen importlib._bootstrap>", line 1006, in _gcd_import
      File "<frozen importlib._bootstrap>", line 983, in _find_and_load
      File "<frozen importlib._bootstrap>", line 965, in _find_and_load_unlocked
    ModuleNotFoundError: No module named 'jupyter_nbextensions_configurator'
[I 16:17:12.703 NotebookApp] JupyterLab extension loaded from /opt/anaconda3/lib/python3.7/site-packages/jupyterlab
[I 16:17:12.703 NotebookApp] JupyterLab application directory is /opt/anaconda3/share/jupyter/lab
[I 16:17:12.707 NotebookApp] Serving notebooks from local directory: /Users/mac
[I 16:17:12.707 NotebookApp] The Jupyter Notebook is running at:
[I 16:17:12.707 NotebookApp] http://localhost:8888/?token=29b5b567a453458ac4b2bc1744ce496b0eb5483183bd2c7a
[I 16:17:12.707 NotebookApp]  or http://127.0.0.1:8888/?token=29b5b567a453458ac4b2bc1744ce496b0eb5483183bd2c7a
[I 16:17:12.707 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 16:17:12.756 NotebookApp]

    To access the notebook, open this file in a browser:
        file:///Users/mac/Library/Jupyter/runtime/nbserver-95084-open.html
    Or copy and paste one of these URLs:
        http://localhost:8888/?token=29b5b567a453458ac4b2bc1744ce496b0eb5483183bd2c7a
     or http://127.0.0.1:8888/?token=29b5b567a453458ac4b2bc1744ce496b0eb5483183bd2c7a
```

Then a browser onglet is going to open with direct access to your current directory where you can create your own notebooks.

Or you can create a special environment for your Data Science projects OR a special environment by project (recommended if you are going to be pushing that project to production as it will be easier to track the needed dependencies for that project).

4- To create a special environment, you can simply type:

```
> conda create --name your_env_name python=3.8 -y
```

```
[mac@MBP-de-mac ~ % conda create --name test python=3.8 -y
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.8.3
  latest version: 4.9.0

Please update conda by running

    $ conda update -n base -c defaults conda



## Package Plan ##

  environment location: /opt/anaconda3/envs/test

  added / updated specs:
    - python=3.8


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    ca-certificates-2020.10.14 |                0         121 KB
    certifi-2020.6.20          |           py38_0         156 KB
    openssl-1.1.1h             |       haf1e3a3_0         2.2 MB
    pip-20.2.4                 |           py38_0         1.7 MB
    python-3.8.5               |       h26836e1_1        20.6 MB
    setuptools-50.3.0          |   py38h0dc7051_1         725 KB
    sqlite-3.33.0              |       hffcf06c_0         1.3 MB
    tk-8.6.10                  |       hb0a8c7a_0         3.0 MB
    wheel-0.35.1               |           py_0            37 KB
    ------------------------------------------------------------
                                           Total:        29.9 MB

The following NEW packages will be INSTALLED:

  ca-certificates    pkgs/main/osx-64::ca-certificates-2020.10.14-0
  certifi            pkgs/main/osx-64::certifi-2020.6.20-py38_0
  libcxx             pkgs/main/osx-64::libcxx-10.0.0-1
  libedit            pkgs/main/osx-64::libedit-3.1.20191231-h1de35cc_1
  libffi             pkgs/main/osx-64::libffi-3.3-hb1e8313_2
  ncurses            pkgs/main/osx-64::ncurses-6.2-h0a44026_1
  openssl            pkgs/main/osx-64::openssl-1.1.1h-haf1e3a3_0
  pip                pkgs/main/osx-64::pip-20.2.4-py38_0
  python             pkgs/main/osx-64::python-3.8.5-h26836e1_1
  readline           pkgs/main/osx-64::readline-8.0-h1de35cc_0
  setuptools         pkgs/main/osx-64::setuptools-50.3.0-py38h0dc7051_1
  sqlite             pkgs/main/osx-64::sqlite-3.33.0-hffcf06c_0
  tk                 pkgs/main/osx-64::tk-8.6.10-hb0a8c7a_0
  wheel              pkgs/main/noarch::wheel-0.35.1-py_0
  xz                 pkgs/main/osx-64::xz-5.2.5-h1de35cc_0
  zlib               pkgs/main/osx-64::zlib-1.2.11-h1de35cc_3


Downloading and Extracting Packages
openssl-1.1.1h       | 2.2 MB    | ################################################################################################################################################################################################################################################ | 100%
sqlite-3.33.0        | 1.3 MB    | ################################################################################################################################################################################################################################################ | 100%
```

In this command, the **'python=3.8'** portion specifies which version of python you want to set up the environment in.

You can use **'-n'** instead of ' **— name**'; they mean exactly the same thing.

The **'-y'** flag essentially tells the command line to say 'yes' to all of the prompts that follow (not required but saves from having to type it each time to confirm you agree to the installation of specific packages).

5- To activate this environment, use:

> conda activate test

```
[mac@MBP-de-mac ~ % conda activate test
 (test) mac@MBP-de-mac ~ %
```

6- To deactivate an active environment, use:

> conda deactivate

```
(test) mac@MBP-de-mac ~ % conda deactivate
mac@MBP-de-mac ~ %
```

7- To list all available environments, use:

> conda env list

```
mac@MBP-de-mac ~ % conda env list
# conda environments:
#
base                  *  /opt/anaconda3
datascience_devenv       /opt/anaconda3/envs/datascience_devenv
deep-learning            /opt/anaconda3/envs/deep-learning
detectron2-pipeline      /opt/anaconda3/envs/detectron2-pipeline
face_mask                /opt/anaconda3/envs/face_mask
maskrcnn                 /opt/anaconda3/envs/maskrcnn
py36                     /opt/anaconda3/envs/py36
py38                     /opt/anaconda3/envs/py38
test                     /opt/anaconda3/envs/test
tl-proj                  /opt/anaconda3/envs/tl-proj
                         /usr/local/anaconda3
```

For a snippet of all the commands available, use this sheet cheat.

8- If you want to install a library, you can either use `**conda**` or `**pip**`:

Example with conda:

> conda install -c pytorch pytorch

Make sure to google it as there may be some changes.

pytorch / packages / pytorch 1.6.0

59

PyTorch is an optimized tensor library for deep learning using GPUs and CPUs.

Conda | Files | Labels | Badges

License: BSD 3-Clause
Home: http://pytorch.org/
8655203 total downloads
Last upload: 2 months and 26 days ago

Installers

conda install

linux-64 v1.6.0
win-64 v1.6.0
osx-64 v1.6.0

To install this package with conda run:

```
conda install -c pytorch pytorch
```

```
(test) mac@MBP-de-mac ~ % conda install -c pytorch pytorch
Collecting package metadata (current_repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: /opt/anaconda3/envs/test

  added / updated specs:
    - pytorch


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    mkl-service-2.3.0          |   py38hfbe908c_0          42 KB
    mkl_fft-1.2.0              |   py38hc64f4ea_0         143 KB
    mkl_random-1.1.1           |   py38h959d312_0         290 KB
    ninja-1.10.1               |   py38h879752b_0         103 KB
    numpy-1.19.1               |   py38h3b9f5b6_0          21 KB
    numpy-base-1.19.1          |   py38hcfb5961_0         4.1 MB
    pytorch-1.6.0              |          py3.8_0        54.6 MB  pytorch
    ------------------------------------------------------------
                                           Total:        59.2 MB

The following NEW packages will be INSTALLED:

  blas               pkgs/main/osx-64::blas-1.0-mkl
  intel-openmp       pkgs/main/osx-64::intel-openmp-2019.4-233
  mkl                pkgs/main/osx-64::mkl-2019.4-233
  mkl-service        pkgs/main/osx-64::mkl-service-2.3.0-py38hfbe908c_0
  mkl_fft            pkgs/main/osx-64::mkl_fft-1.2.0-py38hc64f4ea_0
  mkl_random         pkgs/main/osx-64::mkl_random-1.1.1-py38h959d312_0
  ninja              pkgs/main/osx-64::ninja-1.10.1-py38h879752b_0
  numpy              pkgs/main/osx-64::numpy-1.19.1-py38h3b9f5b6_0
  numpy-base         pkgs/main/osx-64::numpy-base-1.19.1-py38hcfb5961_0
  pytorch            pytorch/osx-64::pytorch-1.6.0-py3.8_0
  six                pkgs/main/noarch::six-1.15.0-py_0


Proceed ([y]/n)? y


Downloading and Extracting Packages
mkl-service-2.3.0    | 42 KB     | ##########################################
mkl_fft-1.2.0        | 143 KB    | ##########################################
numpy-base-1.19.1    | 4.1 MB    | ##########################################
pytorch-1.6.0        | 54.6 MB   | ##########################################
mkl_random-1.1.1     | 290 KB    | ##########################################
ninja-1.10.1         | 103 KB    | ##########################################
numpy-1.19.1         | 21 KB     | ##########################################
```

Example with pip:

> pip install torch

You can use `**pip**` or `**pip3**` according to the python version you have installed in your system. It is better to install using conda as they sometimes provide some better versions.

After installing, check if the installation works correctly.

For example in this case you can type:

> python
> import torch

```
(test) mac@MBP-de-mac ~ % python
Python 3.8.5 (default, Sep  4 2020, 02:22:02)
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> import torch
>>> 
```

If everything is alright then you won't get an error otherwise you will.

9- If you want to export the configurations in your environment into a text file, use:

> conda env export > my_environment.text

```
(test) mac@MBP-de-mac ~ % conda env export > my_environment.text
(test) mac@MBP-de-mac ~ % cat my_environment.text
name: test
channels:
  - pytorch
  - defaults
dependencies:
  - blas=1.0=mkl
  - ca-certificates=2020.10.14=0
  - certifi=2020.6.20=py38_0
  - intel-openmp=2019.4=233
  - libcxx=10.0.0=1
  - libedit=3.1.20191231=h1de35cc_1
  - libffi=3.3=hb1e8313_2
  - mkl=2019.4=233
  - mkl-service=2.3.0=py38hfbe908c_0
  - mkl_fft=1.2.0=py38hc64f4ea_0
  - mkl_random=1.1.1=py38h959d312_0
  - ncurses=6.2=h0a44026_1
  - ninja=1.10.1=py38h879752b_0
  - numpy=1.19.1=py38h3b9f5b6_0
  - numpy-base=1.19.1=py38hcfb5961_0
  - openssl=1.1.1h=haf1e3a3_0
  - pip=20.2.4=py38_0
  - python=3.8.5=h26836e1_1
  - pytorch=1.6.0=py3.8_0
  - readline=8.0=h1de35cc_0
  - setuptools=50.3.0=py38h0dc7051_1
  - six=1.15.0=py_0
  - sqlite=3.33.0=hffcf06c_0
  - tk=8.6.10=hb0a8c7a_0
  - wheel=0.35.1=py_0
  - xz=5.2.5=h1de35cc_0
  - zlib=1.2.11=h1de35cc_3
prefix: /opt/anaconda3/envs/test
```

10- Delete an environment, use:

> conda env remove --name test

```
[mac@MBP-de-mac ~ % conda env remove --name test

Remove all packages in environment /opt/anaconda3/envs/test:
```

Troubleshooting:

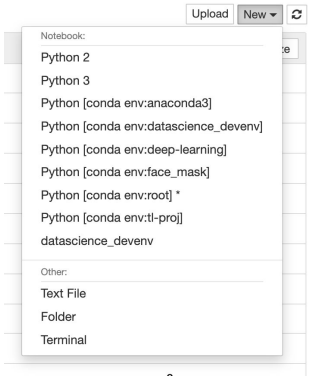
In case your environment doesn't show up in the dropdown list, use:

> conda install nb_conda

And the run:

> jupyter notebook

```
mac@MBP-de-mac ~ %  conda install nb_conda
Collecting package metadata (current_repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: /opt/anaconda3

  added / updated specs:
    - nb_conda


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    nb_conda-2.2.1             |           py37_0          32 KB
    nb_conda_kernels-2.3.0     |           py37_0          25 KB
    ------------------------------------------------------------
                                           Total:          58 KB

The following NEW packages will be INSTALLED:

  nb_conda           pkgs/main/osx-64::nb_conda-2.2.1-py37_0
  nb_conda_kernels   pkgs/main/osx-64::nb_conda_kernels-2.3.0-py37_0


Proceed ([y]/n)? y


Downloading and Extracting Packages
nb_conda-2.2.1      | 32 KB     | ################################### | 100%
nb_conda_kernels-2.3 | 25 KB     | ################################### | 100%
Preparing transaction: done
Verifying transaction: done
Executing transaction: | Enabling nb_conda_kernels...
Status: enabled

- Config option `kernel_spec_manager_class` not recognized by `EnableNBExtensionApp`.
Enabling notebook extension nb_conda/main...
      - Validating: OK
Enabling tree extension nb_conda/tree...
      - Validating: OK
Config option `kernel_spec_manager_class` not recognized by `EnableServerExtensionApp`.
Enabling: nb_conda
- Writing config: /opt/anaconda3/etc/jupyter
    - Validating...
      nb_conda 2.2.1 OK

done
mac@MBP-de-mac ~ % jupyter notebook
[I 19:03:53.097 NotebookApp] [nb_conda_kernels] enabled, 6 kernels found
[[I 19:03:54.198 NotebookApp] Loading IPython parallel extension
[W 19:03:54.199 NotebookApp] Error loading server extension jupyter_nbextensions_configurator
    Traceback (most recent call last):
      File "/opt/anaconda3/lib/python3.7/site-packages/notebook/notebookapp.py", line 1942, in init_server_extensions
        mod = importlib.import_module(modulename)
      File "/opt/anaconda3/lib/python3.7/importlib/__init__.py", line 127, in import_module
        return _bootstrap._gcd_import(name[level:], package, level)
      File "<frozen importlib._bootstrap>", line 1006, in _gcd_import
      File "<frozen importlib._bootstrap>", line 983, in _find_and_load
      File "<frozen importlib._bootstrap>", line 965, in _find_and_load_unlocked
```



References:

- https://www.anaconda.com/products/individual
- https://docs.conda.io/projects/conda/en/4.6.0/_downloads/52a95608c49671267e40c689e0bc00ca/conda-cheatsheet.pdf
- https://towardsdatascience.com/getting-started-with-python-environments-using-conda-32e9f2779307
- https://pytorch.org/get-started/locally/#mac-anaconda
- https://stackoverflow.com/questions/39604271/conda-environments-not-showing-up-in-jupyter-notebook?rq=1