

Python: Download, Install, and Run

Installing Python via Anaconda	1
Running Python	2
Environments	2
Creating an environment	2
Sharing an environment	3
Exporting an environment via the environment file environment.yml	3
Creating a new environment via the environment file environment.yml	4
Listing all environments	4
Removing an environment	4
Activate/deactivate an environment	4
Installing Python libraries	4
Installing libraries via requirements.txt	5
Checking a library version	5
Listing libraries	6
Running a Python script	6

Installing Python via Anaconda

Many NLP routines are written in Python. You will need to download and install the latest Python.

The easiest way to download and install Python is through Anaconda at <https://www.anaconda.com/distribution/> Make sure you download version 3 of Python graphical installer.

Anaconda is a great way of installing python, especially for data science. Anaconda for python comes with most (if not all) of the python libraries you are likely to need for data science. Anaconda makes it easy to install python on to a windows system and gives consistency if you work on different platforms.

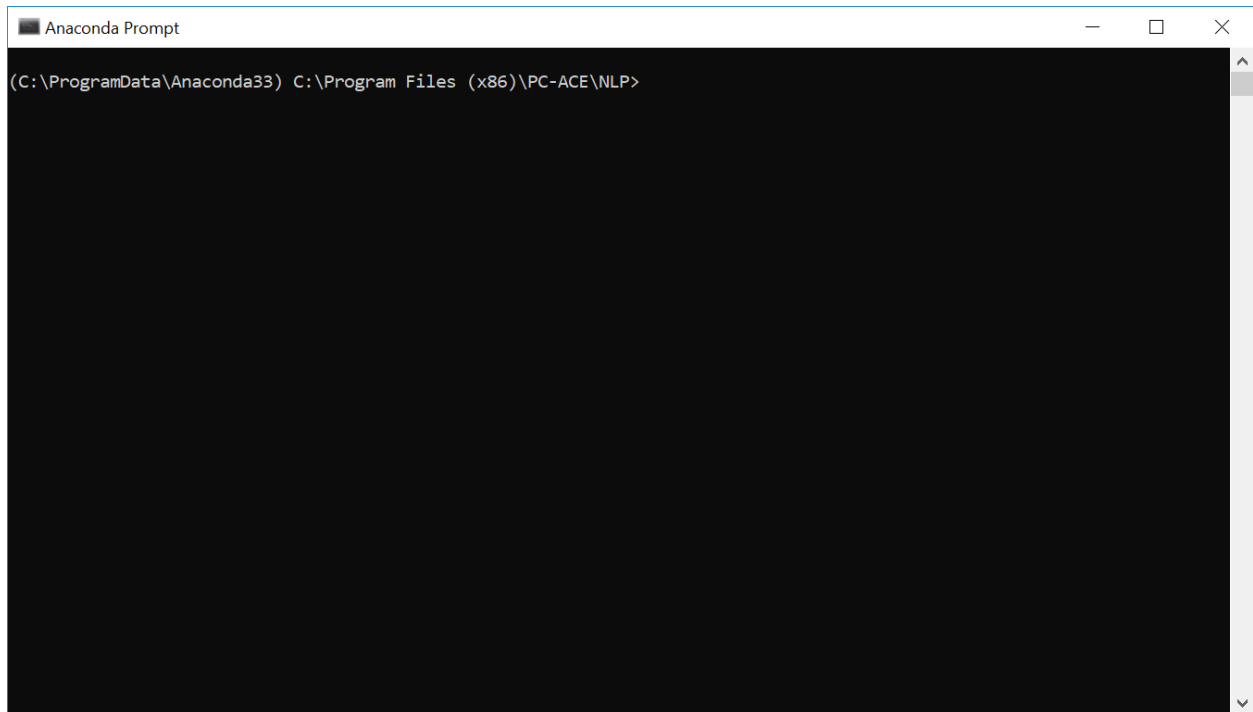
Watch the installation video <https://www.youtube.com/watch?reload=9&v=RzMYjN6fa9c>

You don't need to install Python if you installed Anaconda. You may need to set your path for python and conda if you are on a windows. You can learn more about that here. If you are in a Mac, you may need to configure your .bash_profile (but it was probably done for you when you installed anaconda.

If you need a different version of Python or module then the one you started with use a conda environment to separate that from your main install (I use different environments for all my projects)

Running Python

Once Anaconda is installed, you will need to run Python through Anaconda by running Anaconda Prompt (it will take a while to load). Do not run Python at regular cmd prompt.



Environments

<https://conda.io/projects/conda/en/latest/user-guide/tasks/manage-environments.html#using-pip-in-an-environment>

Creating an environment

myenv below can be any name you want, e.g., NLP

conda create -n myenv python=3.7

Use the flag python=3.7 otherwise, with the standard command conda create -n myenv, the pip command is not recognized.

After creating an environment you will need to activate the environment.

activate NLP

to exit

deactivate NLP

Install all the libraries that you need in this environment at the same time. Installing one library at a time can lead to dependency conflicts.

You can install all libraries via the requirements.txt

pip install -r requirements.txt

Sharing an environment

You may want to share your environment with someone else, so they can re-create a test that you have done. To allow them to quickly reproduce your environment, with all of its packages and versions, give them a copy of your environment.yml file.

Exporting an environment via the environment file environment.yml

activate myenv

conda env export > environment.yml

The environment.yml will be placed in the current directory. Email or copy the exported environment.yml file to the other person.

name: nlp

channels:

- defaults

dependencies:

- certifi=2018.8.24=py35_1

- pip=10.0.1=py35_0

- python=3.5.6=he025d50_0

- setuptools=40.2.0=py35_0

- vc=14.1=h0510ff6_4

- vs2015_runtime=14.15.26706=h3a45250_4

- wheel=0.31.1=py35_0

- wincertstore=0.2=py35hfebbdb8_0

prefix: C:\Users\rfranzo\AppData\Local\conda\conda\envs\nlp

change

name: myenv to new envname

prefix: path to a new envname path

Note

If you already have an environment.yml file in your current directory, it will be overwritten during this task.

Creating a new environment via the environment file environment.yml

Use the terminal or an Anaconda Prompt for the following steps

```
conda env create -f environment.yml
```

The first line of the yml file sets the new environment's name.

Activate the new environment: conda activate myenv

Listing all environments

To see a **list of all of your environments**, in your terminal window or an Anaconda Prompt, run:

```
conda env list
```

Removing an environment

To **remove an environment**, in your terminal window or an Anaconda Prompt, run:

```
conda env remove --name myenv
```

You cannot be in the environment you are trying to remove. Must deactivate first then remove.

Activate/deactivate an environment

Activating environments is essential to making the software in the environments work well. Activation entails two primary functions: adding entries to PATH for the environment, and running any activation scripts that the environment may contain. These activation scripts are how packages can set arbitrary environment variables that may be necessary for their operation.

To **activate** an environment: conda activate myenv

To **deactivate** an environment: conda deactivate myenv

If conda gives an error in the activate or deactivate commands, simply type **activate myenv** or **deactivate myenv**

Installing Python libraries

Different NLP Python routines will require the following specialized libraries.

1. conllu
2. nltk
3. numpy
4. openpyxl
5. pandas
6. pycorenlp
7. stanfordcorenlp
8. unidecode
9. csv
10. gensim
11. spacy
12. pyLDAvis
13. matplotlib
14. simplekml
15. geopy
16. tkinter
17. pprint

Most of these libraries are automatically available in Anaconda. Individual libraries can be installed via the command `pip install` at the anaconda prompt, for instance

`pip install unidecode`

You will also need the nltk stopwords. These are available through Anaconda but they can also be imported in the anaconda prompt:

1. Type `python` then click enter
2. Type `import nltk` then click enter
3. Type `nltk.download('stopwords')` then click enter
4. Type `exit()` then click enter

Installing libraries via requirements.txt

Python scripts are VERY sensitive to the library version used to create the script. To ensure that the library will work on your computer, use the following command to install the required library version.

`pip install -r requirements.txt`

Checking a library version

You can check the version of any library (e.g., unidecode) via the `pip` command

`pip show unidecode`

You can install these libraries from command line using the command. But you can also use the script **NLP_pip_install.py** and all libraries will be automatically installed.

pip install numpy (or any of the required libraries)

Listing libraries

Listing all libraries installed in an environment

The following command will list all libraries installed in the active environment:

conda list

The command conda list run from the anaconda prompt, rather than from a specific environment, will list all installed libraries.

Running a Python script

THREE STEPS:

1. At the Anaconda prompt first enter the command

activate myenv

2. then change directory CD to where you store your python script to run


cd C:\Program Files (x86)\PC-ACE\NLP

3. Then enter the command

Python [filename]

where filename is any Python script, for instance, the main GUI of the suite of NLP tools: nlp.py

This command will open the following GUI

 Select Anaconda Prompt

```
(C:\ProgramData\Anaconda33) C:\Program Files (x86)\NLP>python nlp.py
```

When you run Python in an active environment the command Python may not be recognized. Use py instead of python.

Graphical User Interface (GUI) for a suite of tools of Natural Language Processing (NLP) & Data Visualization

—□×

Welcome to this Python 3 script.
For brief general information about this script, click on the "Read Me" button.
For brief information on specific lines click on any of the "?HELP" buttons.
For longer information on various aspects of the script, click on the "Open TIPS files" button and select the pdf help file to view.
To run the script, click on "RUN" (the RUN button is disabled until all I/O information has been entered). To exit the script, click on "QUIT".

? HELP

Select INPUT file

C:/Program Files (x86)/NLP_backup/Output/city_freq_2019nov5.csv

? HELP

Select INPUT files directory

? HELP

Select OUTPUT files directory

C:/Users/rfranzo/Desktop/CORPUS DATA/Yumeng

? HELP

Data & Files Handling Tools

? HELP

Pre-Processing Tools

? HELP

Statistical Tools

? HELP

☐ Run Stanford CoreNLP

? HELP

CoNLL Table Tools

? HELP

Language Analysis Tools

? HELP

Visualization Tools

? HELP

Topic Modeling Tools

? HELP

☐ Sentiment & Concreteness Analysis

Read Me

Open TIPS files

RUN

QUIT