Neural Networks from scratch 1

Workshop Tokyo Python Society Club

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Installing and setting our Tools

What is Anaconda?

Anaconda is a data science ecosystem distributed by Continuum Analytics. It contains a lot of tools that make your life easier.

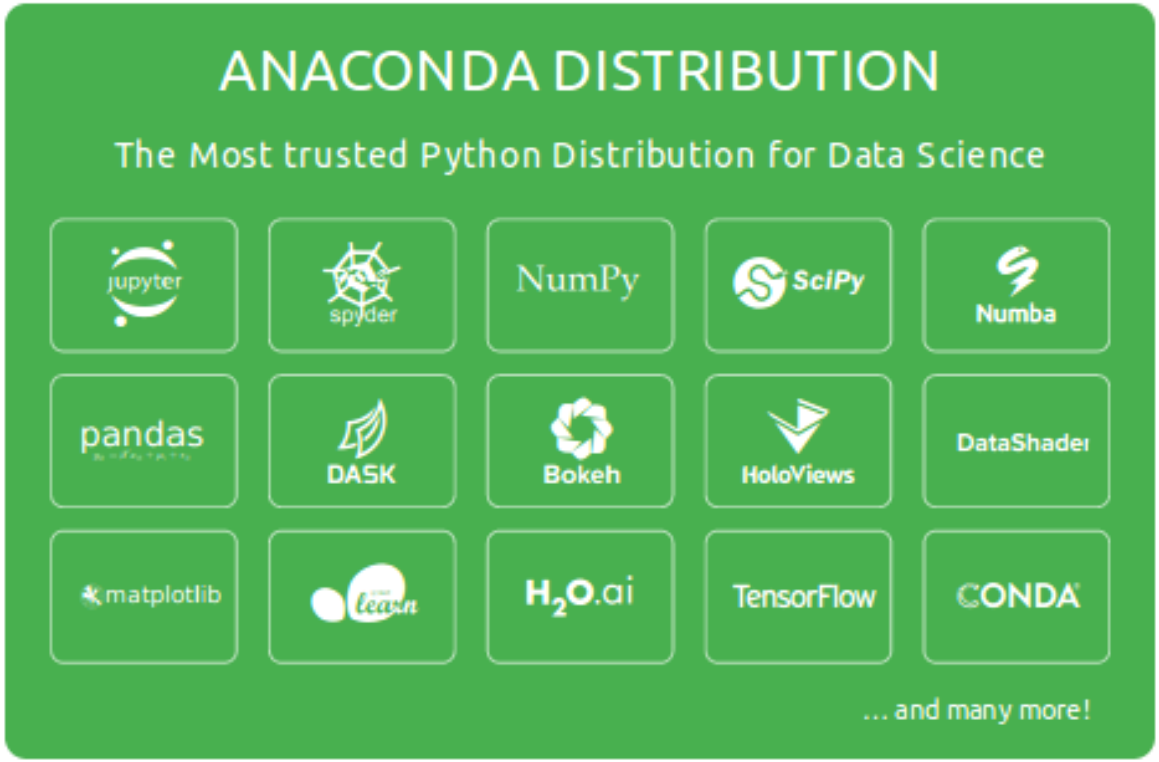


Figure: For more information: `www.continuum.io`

Downloading

For this workshop, please download the Python 3.6 version.

You can find the distribution there:

`https://www.continuum.io/downloads`.

The Anaconda distribution is compatible with Windows, MacOS and Linux.

Installation

For installing, please open your terminal, go to the right directory and type one of the below instructions (depends on your OS):

```
$ bash Anaconda3-4.4.0-Linux-x86_64.sh
```

or

```
$ bash Anaconda3-4.4.0-MacOSX-x86_64.sh
```

Or use the exe file for Windows. If you have any problem, please go there: https://docs.continuum.io/anaconda/install

Set your environment (1/2)

Virtual env: allow you to manage dependences for different project by "isolating" every environments.

```
$ conda create --name workshop_nn
Proceed ([y]/n)? y
```

Then:

```
$ source activate workshop_nn
(workshop_nn) yann@Linux:~$
```

For more information:

https://conda.io/docs/using/envs.html

Set your environment (2/2)

Now let's check if we have all the requirements.

First, check if you have the python 3.6 by default by typing:

```
$ python --version
Python 3.6.1 :: Anaconda 4.4.0 (64-bit)
```

Then, install NumPy, Scikit-learn, matplotlib, bokeh and Jupyter with pip (https://en.wikipedia.org/wiki/Pip_(package_manager)):

```
$ pip install numpy scikit-learn
$ pip install matplotlib bokeh
$ pip install jupyter ipywidgets
$ jupyter nbextension enable --py widgetsnbextension
```

Optionally, you can activate widgets with the last command line.

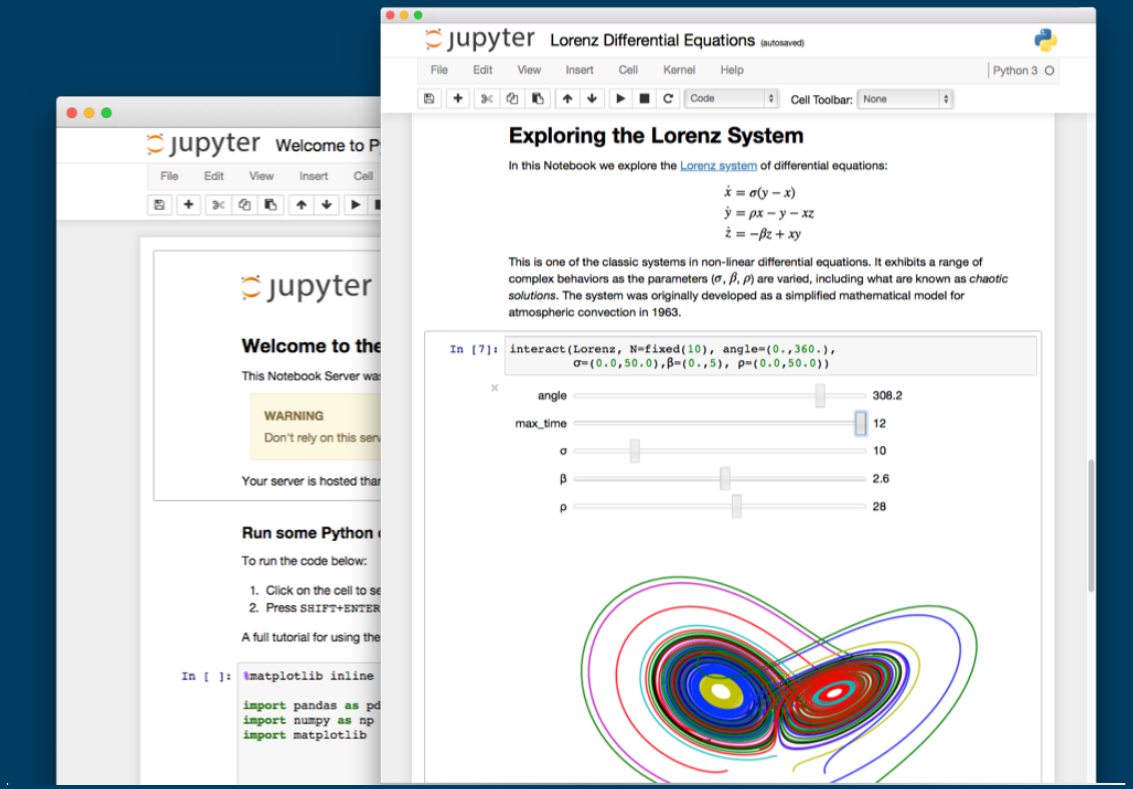
Installing and setting our Tools

What is Jupyter?

Figure: For more information: `http://jupyter.org`

It's set of tools for programming sciences. Jupyter stands for (**Ju**) Julia language, (**Pyt**) Python and (**Er**) R. Specially Jupyter Notebook is a web app that allows you to create and share documents that contain live code.

Why using Jupyter?



Allows you to share (also with yourself!) live code, equations, visualizations and explanatory text. Everything is in your browser and interactive! You can also run it remotely...

Running a notebook

For starting Jupyter Notebook, simply type:

```
$ jupyter notebook &
```

It will open a tab in your browser. The default URL of the web app is `http://localhost:8888`.
For more information, please refer to:
`https://jupyter.readthedocs.io/en/latest/running.html`.

Conclusion for this part

What we've learned so far

1. What is Anaconda and why you should use it
2. Installing all the tools you need
3. What is Jupyter and why you should use it
4. Installing and running Jupyter

Conclusion for this part

What is the next?

1. Overview of Deep learning
2. For what and why Deep learning?
3. A Neural Net by hand
4. Let’s code a Neural Net!