

Machine Learning and Data Mining

28. April, 2021

Literature

- Notes from classes
- C. Bishop: Pattern Recognition and Machine Learning
- K. Murphey: Machine Learning: A Probabilistic Perspective
- S. Shalev-Schwartz, S. Ben-David: Understanding Machine Learning: From Theory to Algorithms

Installation

- Anaconda is a distribution of the Python and R programming languages for scientific computing (data science, machine learning applications, etc.)
- <https://www.anaconda.com/>
- The Jupyter Notebook is an open-source web application that lets you easily write and iterate Python code for data analysis.
- <https://jupyter.org/>
- PyCharm
- <https://www.jetbrains.com/pycharm/>

Installation

- <https://www.python.org/downloads/>
- `pip install numpy`

If you use `pip`, you can install it with:

```
pip install notebook
```

Congratulations, you have installed Jupyter Notebook! To run the notebook, run the following command at the Terminal (Mac/Linux) or Command Prompt (Windows):

```
jupyter notebook
```

Figure 1: `pip install notebook`

Installation

<https://www.anaconda.com/distribution/>

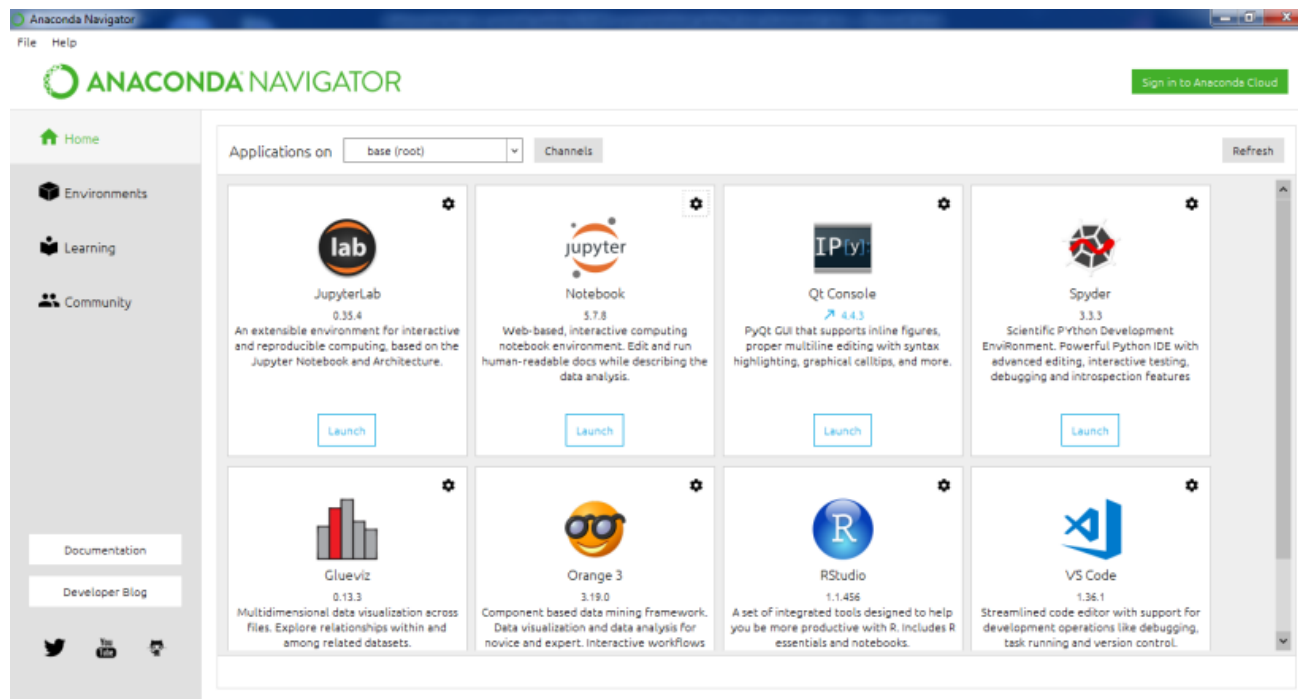


Figure 2: Programs within Anaconda Navigator

Jupyter Notebook

The screenshot shows a web browser window with the address bar at `localhost:8889/tree`. The Jupyter logo and navigation buttons (Quit, Logout) are at the top. Below the navigation bar, there are tabs for 'Files', 'Running', and 'Clusters'. The 'Files' tab is active, showing a file browser interface. At the top of the file browser, there is a text prompt 'Select items to perform actions on them.' and buttons for 'Upload', 'New', and a refresh icon. Below this is a table of files and folders in the current directory. The table has columns for 'Name', 'Last Modified', and 'File size'. The files listed are: Anaconda3 (2 months ago), Contacts (2 months ago), Desktop (3 minutes ago), Documents (2 months ago), Downloads (a day ago), Favorites (2 months ago), Links (2 months ago), Music (2 months ago), New folder (4 years ago), Pictures (2 months ago), pip (6 months ago), Saved Games (2 months ago), Searches (2 months ago), and source (a year ago).

| Name | Last Modified | File size |
|-------------|---------------|-----------|
| Anaconda3 | 2 months ago | |
| Contacts | 2 months ago | |
| Desktop | 3 minutes ago | |
| Documents | 2 months ago | |
| Downloads | a day ago | |
| Favorites | 2 months ago | |
| Links | 2 months ago | |
| Music | 2 months ago | |
| New folder | 4 years ago | |
| Pictures | 2 months ago | |
| pip | 6 months ago | |
| Saved Games | 2 months ago | |
| Searches | 2 months ago | |
| source | a year ago | |

Jupyter Notebook

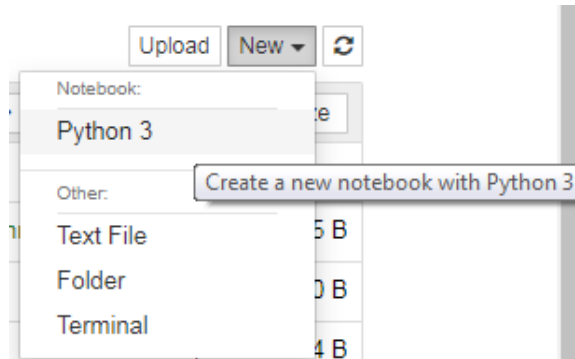


Figure 3: Creating new Jupyter notebook script

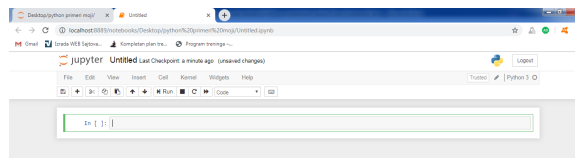


Figure 4: A blank Jupyter notebook script