

# CSE4820/5819 - Tool Installation Tutorial

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## 1 Contact

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## 2 Anaconda

What is Anaconda?

- Data science toolkit
- Jupyter Notebook, Tensorflow, Keras, Scikit-Learn, Numpy, Scipy, etc.

### 2.1 Download



Figure 1: Anaconda Installers

Follow the link, hit the "Download" button which will bring you to the portion of the page resembling Figure 1. Select the appropriate **Graphical Installer** according to your OS.

## 2.2 Installation (Mac)

### 2.2.1 Check Installation Status

1. Open terminal: See Figure 2:

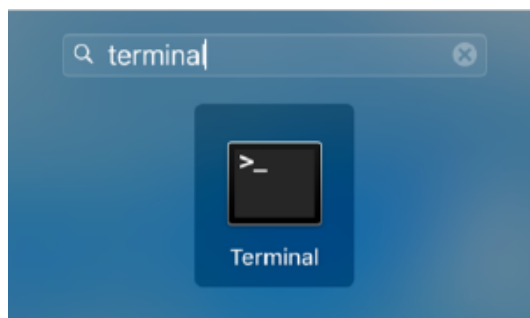


Figure 2: Anaconda Installers

2. Type "python" in terminal (\$ xx means type xx in terminal): See Figure 3
- 3 \$ python

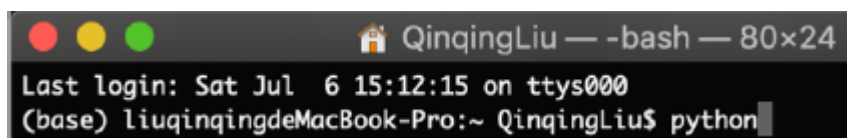


Figure 3: Type python in terminal

3. The terminal would show something like Figure 4:

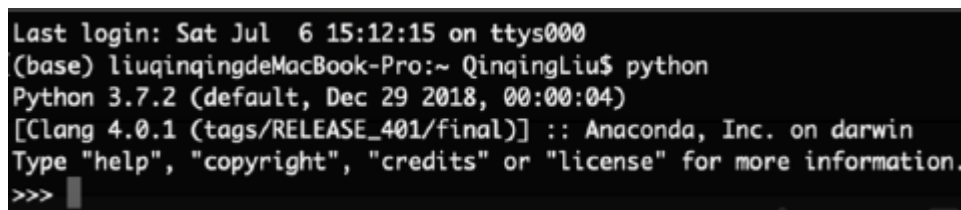
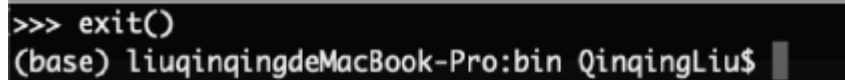


Figure 4: Terminal Output

"Anaconda, Inc" will show in output.  
(You can then type `exit()` after `>>>` to exit python.)

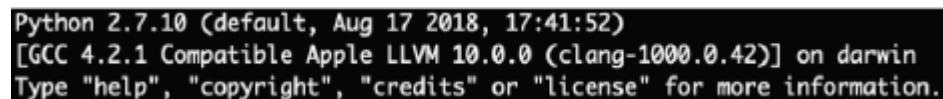


```
>>> exit()
(base) liuqingdeMacBook-Pro:bin QinqingLiu$
```

Figure 5: Type `exit()` to exit Python

### 2.2.2 Potential Problem

No Anaconda Info shows in output. For example, Figure 6

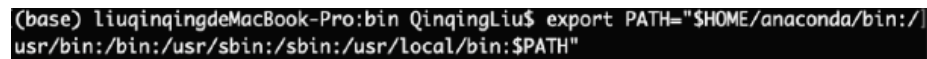


```
Python 2.7.10 (default, Aug 17 2018, 17:41:52)
[GCC 4.2.1 Compatible Apple LLVM 10.0.0 (clang-1000.0.42)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
```

Figure 6: Terminal output does not include Anaconda

This is due to your Mac is using the python pre-installed by Apple as default python. Solution: Open a new terminal (or exit python. first),

`$ export PATH="$HOME/anaconda/bin:/usr/bin:/bin:/usr/sbin:/sbin:/usr/local/bin:$PATH"`  
e.g: Figure 7



```
(base) liuqingdeMacBook-Pro:bin QinqingLiu$ export PATH="$HOME/anaconda/bin:/usr/bin:/bin:/usr/sbin:/sbin:/usr/local/bin:$PATH"
```

Figure 7: Input for terminal to revise the PATH

Try `$ python` again and you probably would get the correct output  
Or search "set anaconda as default python Mac" in Google for more solutions.  
I do not own a Mac, but would happy to help if you email me.

## 2.3 Installation (Windows)

### 2.3.1 Check Installation Status

1. Search "Anaconda Prompt" in search Bar: Figure 8.

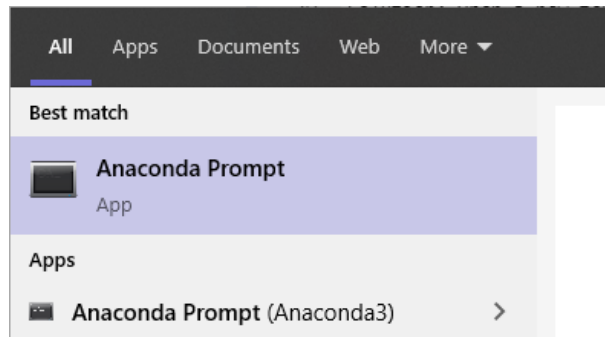


Figure 8: Search for Anaconda Prompt

2. Type python into Anaconda Prompt: See Figure 9.

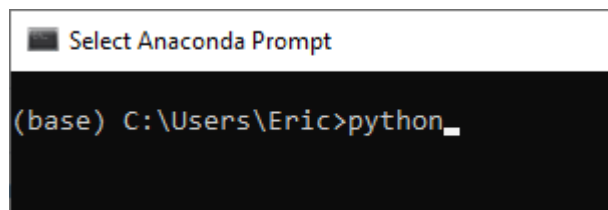


Figure 9: Type python n Anaconda Prompt

3. Anaconda Info shows in output: Figure 10.

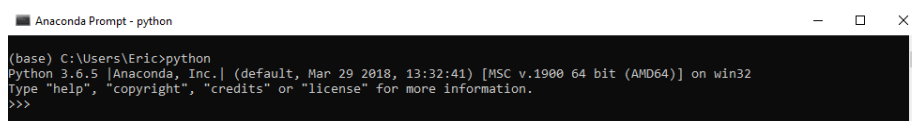


Figure 10: Info on Anaconda shows

## 2.4 More Info

Anaconda User Guide: <https://docs.anaconda.com/anaconda/user-guide/getting-started/>

## 3 Jupyter Notebook

- You can also choose to use Google GoLab (think Google Drive version of Jupyter Notebook), accessible directly through Google Drive or from <https://colab.research.google.com/notebooks/intro.ipynb#recent=true>
- Create and share documents containing live code
- Can specify the associated anaconda environment to run

### 3.1 Installing Manually

- Open Terminal for Macs, Command Prompt for Windows
- Installing with Anaconda if Jupyter Notebook is missing
  - Terminal (Mac) `$ conda install -m jupyter`
  - Anaconda Prompt (Windows) `C:\> conda install -m jupyter`
- Installing without Anaconda directly through cmd / terminal (Without the use of Anaconda Prompt)
  - Terminal (Mac) `$ pip install jupyter`
  - Anaconda Prompt (Windows) `C:\> pip install jupyter`
- If you choose to install jupyter notebook manually, you must also install many of the commonly used packages such as: Numpy, Scipy, Matplotlib, Sci-kit Learn, Tensorflow, etc. manually as well.
  - cmd (Windows) `C:\> pip install numpy`

### 3.2 Accessing Jupyter Notebook

- Terminal (Mac) `$ jupyter notebook`
- Anaconda Prompt (Windows) `C:\> jupyter notebook`
- Command Prompt (Windows) `C:\> jupyter notebook`

A browser page (<http://localhost:8888/tree>) will jump out with files in your PC at the location `C:/Users/username/` on Windows (similar location on Mac). You can navigate to the desired directory or file through this interface.

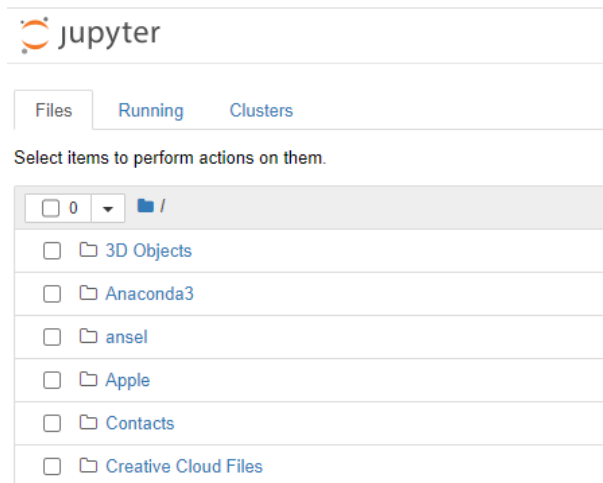


Figure 11: Jupyter Notebook Interface

2. Jupyter Notebook file formats `.ipynb` (Same on Google Colab), clicking on a file of this extension will open a new tab on Jupyter Notebook with the file's contents.

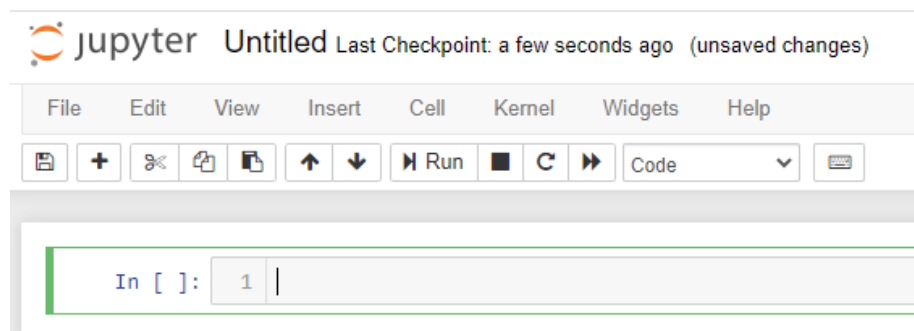


Figure 12: Example notebook

3. You can also create new files by click the "New" button on the right, and select a Kernel, in this case we can choose Python 3

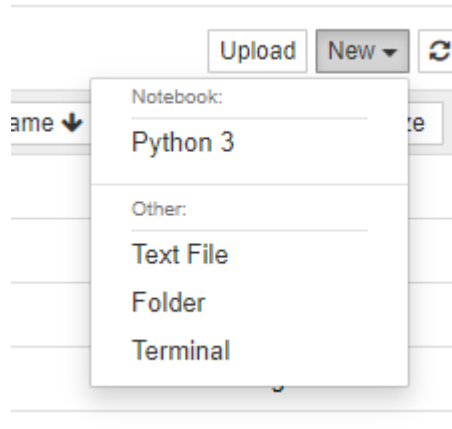


Figure 13: Creating new notebook

4. A brief look into Jupyter Notebook shows that the first box is a code box in Python, while the 2nd highlighted box is in Markdown



Figure 14: Code vs. Markdown

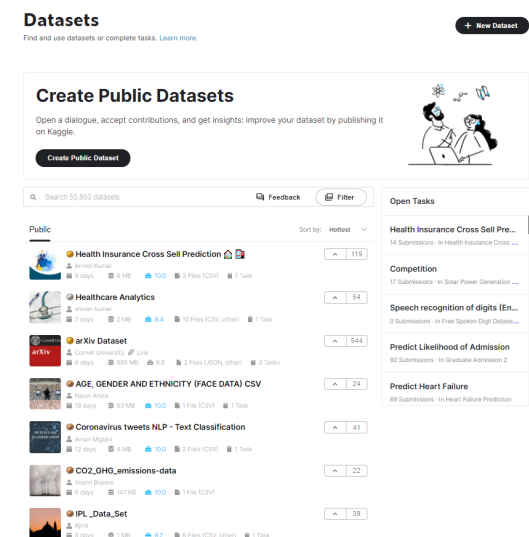
- You can also code in Matlab for the purposes of these homework using Jupyter Notebook. A matlab kernel must be installed in a similar way through Terminal / Anaconda Prompt / Command Prompt. A tutorial in Matlab will not be provided.
- Keyboard shortcuts for navigating Jupyter Notebook can be found in the "Help" tab, which can make navigating and writing code and Markdown easy, here are some basic shortcuts:
  - Shift + Enter: Run cell, select below
  - Ctrl + Enter: Run cell

- Alt + Enter: Run cell, insert below
- Y: Change cell to code
- M: Change cell to Markdown
- D, D: (Double Tap "D") Delete current cell

## 4 Question?

Enjoy coding python for data science!

Check out [www.kaggle.com](https://www.kaggle.com) to find more datasets and notebooks to work with!



If you have any question regarding coding for this course, please feel free to reach out. :)