

Twitter Thread by Pratham Prasoon



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Are you planning to learn Python for machine learning this year?

Here's everything you need to get started.



In this thread, we'll look at all the concepts in Python you need to know for machine learning along with free resources to help you out.

All of this is based on my experience of successfully teaching 300+ students how to code using Python.

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You can use many languages for machine learning, why Python?

Because of 2 reasons:

- Comparatively easier to learn than other languages
- Has the biggest and most mature community

This makes Python a no-brainer to learn for machine learning as a beginner.

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These are the absolute basics which you must know about:

- Basic terminal commands
- Basic arithmetic (+, -, /, *)
- Accepting user input
- For & While loops
- Exception handling
- If-Else statements
- Functions, modules & Imports

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Then comes the more tougher concepts which you must know about:

- Object oriented programming in Python:Classes, Objects, Methods
- PIP (Pypi)
- List slicing
- String formatting
- Dictionaries & Tuples
- Managing environments
- Dunder methods like `__init__`

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This are even more advanced concepts but you do not need then to start machine learning:

- Lambda functions
- Built in libraries like CSV, requests, Sqlite
- Map and Filter
- `*args` and `**kwargs`
- Async
- Decorators

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From what I've observed, most beginners just find it really difficult just to get the Python environment setup and then using the terminal becomes an even bigger nightmare for them.

Let's tackle this issue.

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You need to install:

- Anaconda for managing environments (different versions of Python)
- Python3
- Machine learning packages like Sckit learn and TensorFlow using pip when needed

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Anaconda installation guide for ■

MacOS: ■docs.■anaconda.■com/anaconda/install/mac-os/

Windows: ■docs.■anaconda.■com/anaconda/install/windows/

Linux: ■docs.■anaconda.■com/anaconda/install/linux/

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Anaconda Individual Edition

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Note

Using Anaconda in a commercial setting? You may need to use [Anaconda Commercial Edition](#). If you have purchased Commercial Edition, please proceed to the [Authenticating Commercial Edition](#) section for installation here.

Haven't purchased Commercial Edition yet? Visit <https://anaconda.cloud/register> to get started.

You can install Anaconda using either the graphical installer ("wizard") or the command line ("mar"). If you are unsure, choose the graphical install.

macOS graphical install

1. Download the graphical [macOS installer](#) for your version of Python.
2. RECOMMENDED: [Verify data integrity with SHA-256](#). For more information on hashes, see [Why hash verification?](#)

MacOS and Linux have Python pre-installed, for windows you'll have to install it yourself and it is really easy to mess up the install.

Here's a guide with step by step instructions which will help you.

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3. Using Python on Windows

This document aims to give an overview of Windows-specific behaviour you should know about when using Python on Microsoft Windows.

Unlike most Unix systems and services, Windows does not include a system supported installation of Python. To make Python available, the CPython team has compiled Windows installers (MSI packages) with every [release](#) for many years. These installers are primarily intended to add a per-user installation of Python, with the core interpreter and library being used by a single user. The installer is also able to install for all users of a single machine, and a separate ZIP file is available for application-local distributions.

As specified in [PEP 11](#), a Python release only supports a Windows platform while Microsoft considers the platform under extended support. This means that Python 3.9 supports Windows 8.1 and newer. If you require Windows 7 support, please install Python 3.8.

There are a number of different installers available for Windows, each with certain benefits and downsides.

[The full installer](#) contains all components and is the best option for developers using Python for any kind of project.

[The Microsoft Store package](#) is a simple installation of Python that is suitable for running scripts and packages, and using IDLE or other development environments. It requires Windows 10, but can be safely installed without corrupting other programs. It also provides many convenient commands for launching Python and its tools.

After you do all of that, you need a place to write your code which is called a "code editor".

Here are some popular ones

- VS Code: Feature-rich
- Sublime: Light and simple
- Jupyter: Useful for prototyping
- Pycharm: Full-blown IDE i.e. it has loads of features.

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If all of that seems complicated to you, I suggest you use Google colab, Kaggle notebooks or repl.it. These are online editors which have everything set up for you.

Not to mention colab and kaggle notebooks give you a free GPU for your machine learning workloads.

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Links for these editors

Colab : colab.research.google.com

Kaggle Notebooks : kaggle.com/notebooks/welcome

Repl : repl.it

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The screenshot displays a Google Colab notebook environment. The top bar shows the notebook title "Drive FUSE example.ipynb" and standard menu options like File, Edit, View, Insert, Runtime, Tools, and Help. On the right, there are buttons for COMMENT, SHARE, and a user profile icon. Below the menu, a status bar indicates "CONNECTED" and "EDITING".

The left sidebar contains a "Table of contents" and "Code snippets" section. The "Files" section shows a directory tree with "drive" and "My Drive" folders. Under "My Drive", there are several files and folders, including "Colab Notebooks", "07_structured_data.ipynb", "BigQuery recipes", "Copy of nima colab.ipynb", "Exported DataFrame sheet.gsheets", "Pickle + Drive FUSE example.ipynb", "Sample Excel file.gsheets", "Sample Excel file.xlsx", "TFGAN tutorial in Colab.txt", "created.txt", "foo.txt", "script.ipynb", "to_upload (1).ipynb", "to_upload (2).ipynb", "to_upload (3).ipynb", "to_upload.ipynb", "variables.pickle", and "sample_data".

The main area of the notebook shows two code cells. The first cell contains the following code:

```
[1] 1 # Load the Drive helper and mount
    2 from google.colab import drive
    3
    4 # This will prompt for authorization.
    5 drive.mount('/content/drive')
```

Below the first cell, a message indicates "Mounted at /content/drive". The second cell contains the following code:

```
1 # After executing the cell above, Drive
2 # files will be present in "/content/drive/My Drive".
3 !ls "/content/drive/My Drive"
```

Below the second cell, a list of files and folders is displayed, including "07_structured_data.ipynb", "BigQuery recipes", "Colab Notebooks", "Copy of nima colab.ipynb", "created.txt", "Exported DataFrame sheet.gsheets", "foo.txt", "Pickle + Drive FUSE example.ipynb", "Sample Excel file.gsheets", "Sample Excel file.xlsx", "TFGAN tutorial in Colab.txt", "variables.pickle", and "sample_data".

The Basic & Intermediate Python course on freecodecamp go over pretty much all Python concepts you need for machine learning which I have mentioned above.

Basics: [■youtube.■com/watch?v=rfscVS0vtbw](https://www.youtube.com/watch?v=rfscVS0vtbw)

Intermediate: [■youtube.■com/watch?v=HGOBQPFzWKo](https://www.youtube.com/watch?v=HGOBQPFzWKo)

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Another thing which most beginners skip is knowing how to use the terminal properly and the know-how of navigating around folders.

Here's a brilliant website which gives you an overview of the windows command prompt, enough for you to get started.

[■bit.■ly/34tmnGd](https://bit.ly/34tmnGd)

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A few Command Prompt commands that you will need to master to make it through COS 126. The following is a brief tutorial covering the most important

What is Command Prompt?

Command Prompt program allows you to work in an environment that looks more like a traditional operating system as opposed to the icon based Windows environment. You use your keyboard. You won't use your mouse at all. Command Prompt works at a lower level than Windows. This means that you will have more control. A disadvantage is that it is less user-friendly.

You can use command prompt in COS 126 to compile and execute your Java programs. Learning the Command Prompt also provides a gradual transition to Unix and is useful in science, engineering, and industry.

In Command Prompt select *Start -> Run* and type `cmd` in the box.

Command Prompt shows up as a black terminal window. The *command prompt* should look something like:

You type commands. The boldface type below (that follows the command prompt) is what you should type as you work through this tutorial. Windows does case-sensitive. That means that command `cd` is the same as `CD`. It also means that, in Windows, file `HelloWorld.java` is the same as `helloworld.java`. This is NOT the case on Linux and Mac. Be very careful!!!

Some Useful Commands

To compile a Java program, use the `javac` command. Your program should compile without any errors or warnings (or if there are warnings be absolutely sure you understand the warning and fix the flaw in your program).

```
>javac HelloWorld.java
```

The story is a bit different on Linux and Mac, their terminals are extremely powerful and packed to the brim with features, here's a tutorial which will help you get started with the basics ■

■■■[youtube.com/watch?v=oxuRxtrO2Ag](https://www.youtube.com/watch?v=oxuRxtrO2Ag)



Beginner's Guide to the Bash Terminal

Keep in mind that you should learn how to use the linux terminal because at some point in your machine learning journey you will have to deal with linux.

It is not important to learn it at the start but I do recommend it.

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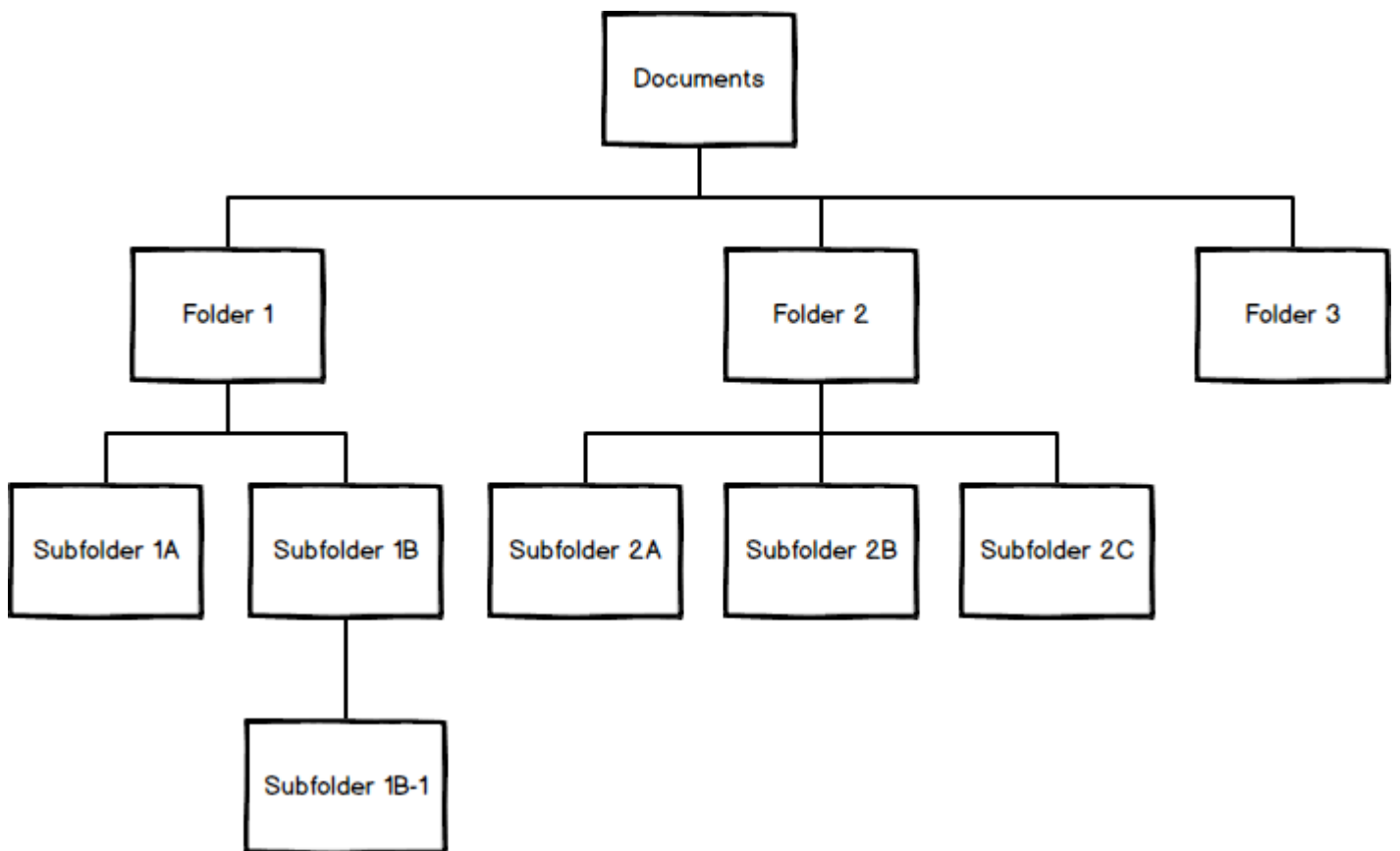
This tutorial will help you in knowing how to work with folders, this is important!

Windows: [youtube.com/watch?v=HDmwiJxzlrw](https://www.youtube.com/watch?v=HDmwiJxzlrw)

Mac: [youtube.com/watch?v=3TAEC-1YUZw](https://www.youtube.com/watch?v=3TAEC-1YUZw)

Linux: [youtube.com/watch?v=HbgzrKJvDRw](https://www.youtube.com/watch?v=HbgzrKJvDRw)

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That's the end of the thread!

Consider following me if you want to see more content like this, cheers.