**I am familiar and had good expertise in core, advanced python**

* Data types, conditional statements, loops
* Collections (list, tuple, dictionary, set), regular and lambda expressions
* Oops concepts
* For performing data cleaning and analysis – pandas
* for data visualization – matplotlib, seaborn
* familiar with basic statistical tools – numpy, scipy

<https://developers.google.com/edu/python/strings>

**Comprehensive learning path – Data Science in Python**

1. **Regular expressions:**

[**https://developers.google.com/edu/python/regular-expressions**](https://developers.google.com/edu/python/regular-expressions)

python regex cheat sheet:[**https://www.debuggex.com/cheatsheet/regex/python**](https://www.debuggex.com/cheatsheet/regex/python)

Baby names python exercise:[**https://developers.google.com/edu/python/exercises/baby-names**](https://developers.google.com/edu/python/exercises/baby-names)

Data cleaning**:** [**https://www.analyticsvidhya.com/blog/2014/11/text-data-cleaning-steps-python/?utm\_source=blog&utm\_medium=Comprehensive-learning-path-ds-python-page**](https://www.analyticsvidhya.com/blog/2014/11/text-data-cleaning-steps-python/?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page)

1. **Learn Scientific libraries in Python – NumPy, SciPy, Matplotlib and Pandas**

**Numpy:** [**http://wiki.scipy.org/Tentative\_NumPy\_Tutorial**](http://wiki.scipy.org/Tentative_NumPy_Tutorial)

**Scipy:** <https://docs.scipy.org/doc/scipy/reference/tutorial/>

**I-python notebook:** <https://nbviewer.jupyter.org/github/jrjohansson/scientific-python-lectures/blob/master/Lecture-4-Matplotlib.ipynb>

**Pandas:** <https://pandas.pydata.org/pandas-docs/stable/user_guide/10min.html>

[**http://www.gregreda.com/2013/10/26/intro-to-pandas-data-structures/**](http://www.gregreda.com/2013/10/26/intro-to-pandas-data-structures/)

[**https://www.analyticsvidhya.com/blog/2014/08/baby-steps-python-performing-exploratory-analysis-python/?utm\_source=blog&utm\_medium=Comprehensive-learning-path-ds-python-page**](https://www.analyticsvidhya.com/blog/2014/08/baby-steps-python-performing-exploratory-analysis-python/?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page)

[**https://www.analyticsvidhya.com/blog/2014/09/data-munging-python-using-pandas-baby-steps-python/?utm\_source=blog&utm\_medium=Comprehensive-learning-path-ds-python-page**](https://www.analyticsvidhya.com/blog/2014/09/data-munging-python-using-pandas-baby-steps-python/?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page)

[**https://pandas.pydata.org/pandas-docs/stable/getting\_started/tutorials.html**](https://pandas.pydata.org/pandas-docs/stable/getting_started/tutorials.html)

**Assignment:** [**https://nbviewer.jupyter.org/github/cs109/2014/blob/master/homework/HW1.ipynb**](https://nbviewer.jupyter.org/github/cs109/2014/blob/master/homework/HW1.ipynb)

1. **Effective Data Visualization**

Go through this [lecture form CS109](http://cm.dce.harvard.edu/2015/01/14328/L03/screen_H264LargeTalkingHead-16x9.shtml). You can ignore the initial 2 minutes, but what follows after that is awesome! Follow this lecture up with [this assignment](http://nbviewer.ipython.org/github/cs109/2014/blob/master/homework/HW2.ipynb).

1. **Learn Scikit-learn and Machine Learning**

Now, we come to the meat of this entire process. Scikit-learn is the most useful library on python for machine learning. Here is a [brief overview of the library](https://www.analyticsvidhya.com/blog/2015/01/scikit-learn-python-machine-learning-tool/?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page). Go through lecture 10 to lecture 18 from [CS109 course from Harvard](http://cs109.github.io/2014/pages/schedule.html). You will go through an overview of machine learning, Supervised learning algorithms like regressions, decision trees, ensemble modeling and non-supervised learning algorithms like clustering. Follow individual lectures with the [assignments](http://cs109.github.io/2014/pages/homework.html) from those lectures.

You should also check out the ‘[Introduction to Data Science](https://courses.analyticsvidhya.com/courses/introduction-to-data-science-2?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page)‘ course to give yourself a big boost in your quest to land a data scientist role.

**Step 7: Practice, practice and Practice**

Congratulations, you made it!

You now have all what you need in technical skills. It is a matter of practice and what better place to practice than compete with fellow Data Scientists on the [DataHack platform](http://datahack.analyticsvidhya.com/?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page" \t "_blank). Go, dive into one of the live competitions currently running on [DataHack](http://datahack.analyticsvidhya.com/?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page" \t "_blank) and Kaggle and give all what you have learnt a try!

**Step 8: Deep Learning**

Now that you have learnt most of machine learning techniques, it is time to give Deep Learning a shot. There is a good chance that you already know what is Deep Learning, but if you still need a brief intro, [here](https://www.analyticsvidhya.com/blog/2014/06/deep-learning-attention/?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page) it is.

I am myself new to deep learning, so please take these suggestions with a pinch of salt. The most comprehensive resource is [deeplearning.net](http://deeplearning.net/). You will find everything here – lectures, datasets, challenges, tutorials. You can also try the [course from Geoff Hinton](https://www.coursera.org/course/neuralnets) a try in a bid to understand the basics of Neural Networks.

**Get Started with Python:** [A Complete Tutorial To Learn Data Science with Python From Scratch](https://www.analyticsvidhya.com/blog/2016/01/complete-tutorial-learn-data-science-python-scratch-2/?utm_source=blog&utm_medium=Comprehensive-learning-path-ds-python-page)