

Become a Data Scientist: Learn Python, Maths and Statistics for Data Science

Data Science is not only for engineers. It doesn't matter whether you are a developer, banking professional or a marketing hero.

Opportunities for people well versed with data - [Data Scientist is one of today's hottest jobs](#) and the demand is exploding in response to the large amounts of data being captured and analyzed by companies all over the world.

We consulted data scientists and few companies that employ Data Scientists to identify the core skills they need to be successful.

These suggestions are derived from conversations with Data Scientists, Data Engineers, Researchers, and Educators, as well as my own experiences in both Data Science and industry roles.



Data Flair 7 Reasons Why You Should Learn  Python

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I am a Data Science consultant with progressive experience in Marketing. I've put a tremendous amount of efforts trying to extract key bits of information from my colleagues to create a review-driven guide for beginners to learn various intricacies of data science.

So without further ado, let's get started.

Python for Data Science

I love Python! Even those R Nerds and Java coffee lovers like Python



Python is easy to use and quick to learn. It is powerful and versatile, making a great choice for beginners and experts in Data Science.



Don't waste time selecting the best [Python IDEs \(Development Environment\)](#) for data science that make data analysis and machine learning easier.

You can download [idle](#) or use python directly through your Terminal/ Command prompt for the start - coz time is precious and you should make every effort to slay the perfectionist instinct in yourself.

— start with the basics

Get an introduction to Python with focus on data science.

Learn how [Jupyter Notebooks](#) work, and understand all the basics of programming concepts including [data structures](#), [data operations](#), [if else statements](#), for and [while loops](#), and [logical operations](#).

Spend a week or two learning the basics and make sure that you actually understand all the basic concepts before starting advanced topics.

— double double Toil !!!

Once you can write small programs, learn the advanced functionality in Python, including [functions](#), [debugging](#), [error handling and exceptions](#), [string manipulations](#), and understand how to write like a good python programmer.

“These skills are taught excellently in [Data Scientist with Python Track](#) by DataCamp”

— learn from your peers !!!

You must start learning from other people’s code from sites like [Github](#), [PySlackers](#) and if you ever get stuck while learning, go to [stackoverflow](#) or use [Python Subreddit](#) for answers.

Python has an excellent community support and you will always find the resources

to help you solve exceedingly challenging, real-world problems for almost any programming related issue, including but not limited to Mathematics.

Learn Math for Data Science

Mathematics is important for Data Science and you will also need it for building Machine Learning Products or ML Research.

It's not entirely clear what level of mathematics is necessary to get started in machine learning, especially for those who don't have a solid background in Mathematics.

In this section, my goal is to suggest the mathematical background necessary to build products or conduct academic research in Data Science.

I encourage you to embrace Mathematics as a way to solidify your Python learning. The truth is, people who are good at math have lots of practice doing math.

So, if you devote an hour or two to practice Maths, then it will become easier to learn and understand Mathematical Libraries in Python faster.

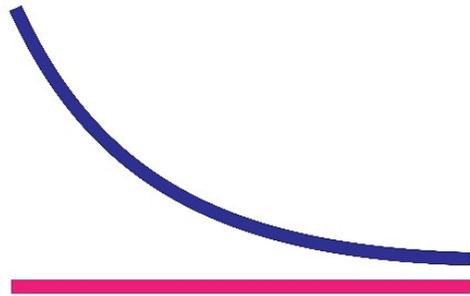
MATH LOVE STORIES

PARALLEL



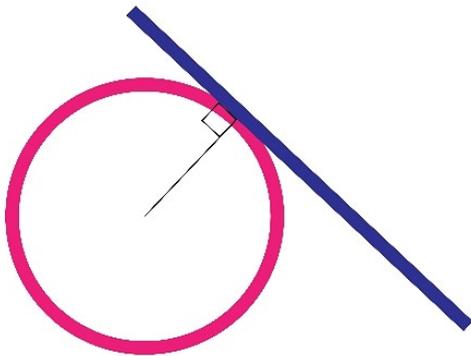
Soulmates who are never meant to meet each other

ASYMPTOTE



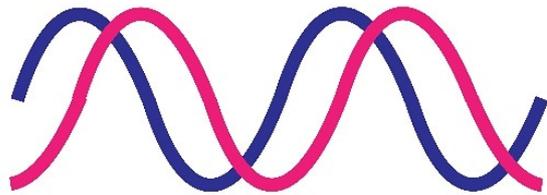
Always getting closer, but will never be together

TANGENT & CIRCLE



To be together once, then drift apart forever

SINE & COSINE



Keep falling in and out of love, forever out of step

@theroundpanda

If you don't have the knowledge of basic maths, then you will need to start with high-school level Mathematics. Most importantly, you have to learn how to think like mathematicians.

If you want to learn Mathematics on your own, I've got you covered with this article about Learning [Math for Data Science](#) and Machine Learning.

— Learn Python Mathematical Libraries

Once you have acquired some basic understanding of maths, Start learning about Mathematical libraries in Python that are useful for data manipulation and visualization like [NumPy](#), [Pandas](#), and [Matplotlib](#).

These libraries will allow you to load and save data, manipulate data such as aggregating, filtering, detecting outliers, and visualizing.

You can learn these advanced topics in [Applied Data Science with Python Specialization](#) by the University of Michigan on Coursera.

If you take this specialization, it will be hard to finish but not impossible. Some concepts will be foreign or straight up weird, just take it again and again.

— Understand Linear Algebra

Basic understanding of linear [algebra](#) is necessary to learn the fundamental important topics like vectors, and vector manipulations, matrices and [matrix manipulations](#), [linear equations](#) and solutions, [eigenvalues](#) and [eigenvectors](#).

Whether you like it or not, Algebra is actually needed in your everyday life. The numbers and equations are used in almost anywhere in the world and remain very integral to data science and machine learning.

— Understand Calculus

If you want have a more successful career in data science, then you'll need to learn [calculus](#) to gain an intuition for derivatives, integrals, determining local maximum and minimum, and limits.

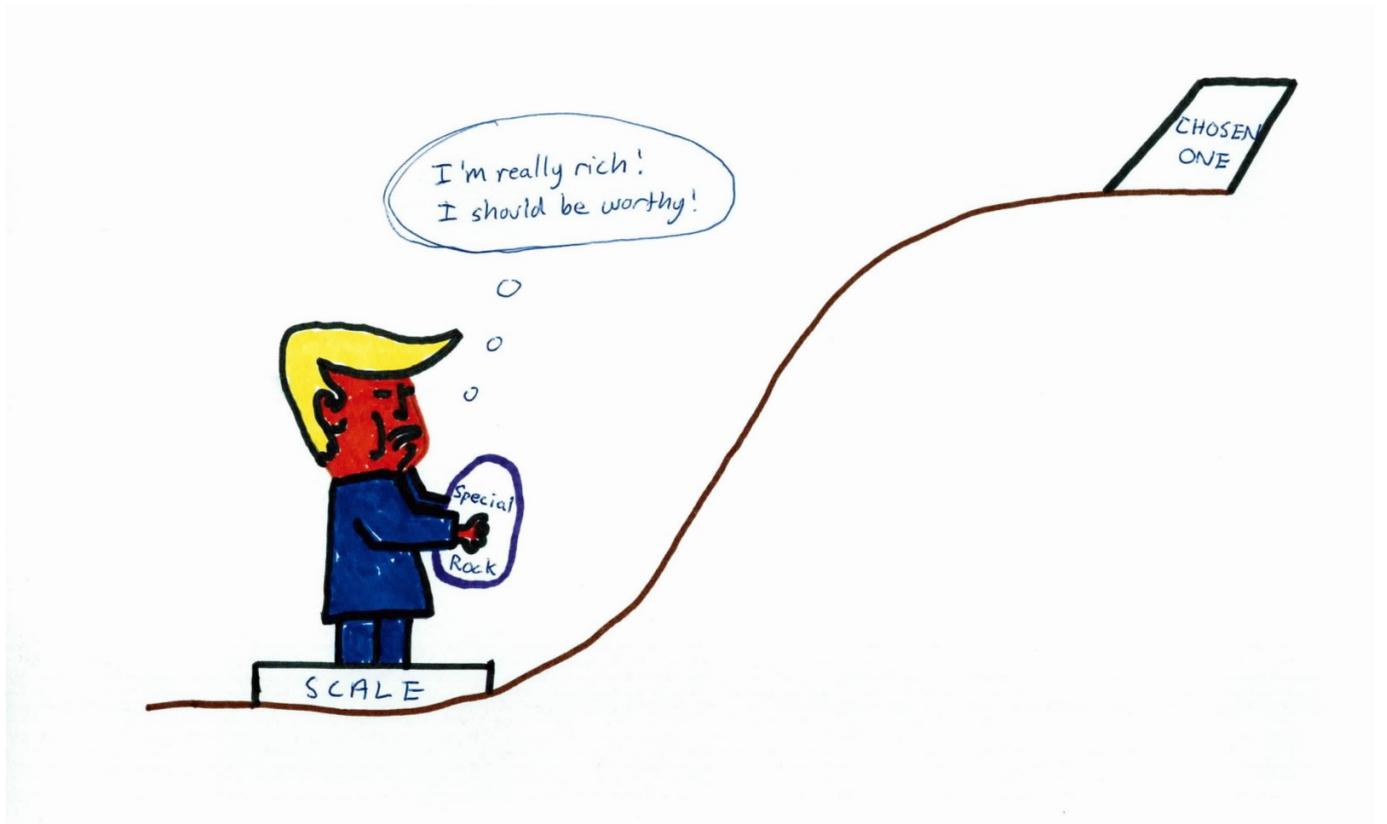
If you have some knowledge of Maths, then this course; [Mathematics for Machine Learning](#) by Imperial College London is very suitable for you.

It is one of the highly recommended Course for Data Scientists and Machine Learning Engineers to master the vocabulary, notation, concepts, and algebra rules.”

Moreover, you might want to consider taking a good course. Check this piece on [Math for Data Science](#) and Machine Learning – These online classes are offered by the World-Class Educators.

Learn Statistics for Data Science

Statistics can be a powerful tool when performing the art of Data Science. The foundations of [statistical thinking](#) took decades upon decades to build, but they can be grasped much faster today with the help of computers.



Source: Medium

Get an introduction to probability and learn about random variables, mean, variance, probability mass and density functions, and also cumulative distribution functions.

You have to start building the foundation you need to think statistically, to speak the language of your data, to understand what the Data is telling you.

If you want to to tighten your grips on Statistics, i've got you covered in this piece about Learning Probability and [Statistics for Data Science](#).

With Statistics, you can gain deeper and more fine grained insights into how exactly your data is structured and based on that structure you can optimally apply other data science techniques to get even more information.

Thanks for making it to the end 😊

If you liked this article, I've got a practical reads for you. One about the [Data Science Skills](#) that companies are actively seeking and one about the [Best Data Science Courses](#) from World-Class Educators.

I've also got this [Data Science Newsletter](#) that you might be into. I send a tiny email once or twice every quarter with some useful resource I've found.

Don't worry, I hate spam as much as you. 🙏