5-Steps and 10-Steps, to Learn Machine Learning.

Maher

There is a 5-Step shortcut that you can do to be able to solve machine learning problems right away, As a beginner, you can take this path at first if you want to get something done with machine learning.

And then you can take the 10-steps path to be a data scientist or a more advanced machine learning engineer.

Just keep this in mind,

> *— Improve your mindset and your way of thinking, This is much more important than learning how to use the tools.*

> *— There is no fixed track to achieve your goal and become a data scientist, So you're free to change any step or do what you think would be right for you.*

Read The Catalog

Path 1: Read the Catalog path (5-Steps Plan)

This path is like reading the catalog of the new device you just bought, you'll learn how to use it effectively, it will turn you from a *beginner* to a *beginner that can get a job done!* you'll be able to solve limited problems with limited accuracy. I recommend taking this path at some point to be able to solve less important problems quickly.

I use these tools a lot when I start solving any machine learning problem, this gives me a baseline accuracy to try to improve upon, It helps me get more familiar with the dataset I have and give me some insights.

1. Master **python** or any other language like R but I recommend you start

with Python, there're a lot of resources for you on the web that is free, I'd suggest you go with a trial and error approach along with some reading.

2. Learn how to use **Numpy** and **Scipy** for math, **Pandas** and **Matplotlib** and **seaborn.**
   Numpy *and* ***Scipy,*** *are Mathematical libraries.*
   Pandas *is a python library for data manipulation and analysis.*
   Matplotlib *and* ***Seaborn*** *are libraries that help you visualize the Data.*
3. Read the article **Introduction to Machine learning: Top-down approach,** It'll give you a smooth introduction to the machine learning world.
4. Read about **Scikit-learn,** this step is the actual catalog reading, scikit-learn is the toolset you'll use to solve the problems, you don't have to learn everything in the library just learn to implement one or two models and read about the others.
   Scikit-learn is a python library that has a lot of already implemented models that are black boxes that you can use to train and make predictions with directly, and you can even tune the model's parameters to suit your problem and get more accuracy.
5. Read Chapter 2 in **the book Hands-On Machine Learning with Scikit-Learn & TensorFlow**

If you're not interested in data science yet then you should not continue aiming for data science, But if you ARE interested, I recommend that you take the second path.

Image for post

Now, Let’s be Professional

Path 2: Build a Career path (10-Steps Plan)

This path will actually turn you from a beginner to a data scientist, It will give you the toolset and the knowledge to solve relatively complex problems.

The most important thing that will shape how good you are as a data scientist is that you should always be up to date with the new discoveries out in the field.

I recommend that you read a lot of papers, follow a lot of publications and writers, and engage with them, reach out to me for any questions! We can benefit each other and build a caring community.

> *The other really important thing is **practicing**.*

1. Of course, choose a **programming language** to master and use in your journey.
2. Revise your **Linear Algebra** knowledge https://ocw.mit.edu/courses/mathematics/18-06-linear-algebra-spring-2010/
3. Revise your **statistics and probability** knowledge from cheat-sheets, or you can learn it from scratch on KhanAcademy https://www.khanacademy.org/math/statistics-probability
4. Revise your **Calculus** Knowledge or learn calculus from this course https://www.youtube.com/playlist?list=PLZHQObOWTQDMsr9K-rj53DwVRMYO3t5Yr
5. Then, Of course, the most popular free course out there **Andrew Ng's course** on Coursera https://www.coursera.org/learn/machine-learning ***for theoretical Knowledge***.
6. I recommend reading **the book Hands-On Machine Learning with Scikit-Learn & TensorFlow** *by Aurélien Géron***,** it's a really good book that's full of information, It's ***for technical knowledge.***
7. **Practice** a lot on Kaggle, Now you can solve problems with the Machine Learning techniques that you understood so far.
8. Data visualization from this course https://www.edx.org/course/data-visualization-a-practical-approach-for-absolute-beginners-0
9. Learn how to work with databases (SQL and no SQL)
10. Learn Hadoop & Spark, I recommend this course https://www.udemy.com/share/1000lU, and there're a lot of free courses and books out there, check them out.

11. I’m sure if you have reached this point you will be able to guide yourself forward.

Be dedicated and have faith that you can do it.

Have a good time Making your machine ***creative*.**