Data Science Roadmap

DATA SCIENCE

Data Science

Data science is an interdisciplinary field that uses scientific methods, processes, algorithms, and systems to extract knowledge and insights from noisy, structured, and unstructured data, and apply knowledge from data across a broad range of application domains.

Note: All resources are **free** of cost.

Mathematics

Data science is heavily dependent on mathematical concepts that you need to learn like **Linear Algebra**, **Calculus**, **Statistics,** and **Probability.**

Resources:

- **Khan Academy** YouTube channel is the best place to learn about these subjects.

Links:

- https://www.youtube.com/watch?v=xyAuNHPsq-g&list=PLFD0EB975BA0CC1E0
- https://www.youtube.com/watch?v=EKvHQc3QEow&list=PL19E79A0638C8D449
- https://www.youtube.com/watch?v=uhxtUt_-GyM&list=PL1328115D3D8A2566
- https://www.youtube.com/watch?v=uzkc-qNVoOk&list=PLC58778F28211FA19

You need to take a brief idea of Calculus and Linear Algebra. And get a good understanding of Statistics and Probability.

Programming Language

There are many programming languages that you can use for Data Science like **Python**, **R**, **Scala**, etc.

I shall suggest using **Python**. Because it has a lot of **built-in libraries** to use and a greater **community**.

Resources:

- **Freecodecamp** YouTube channel has a good course for basic Python.

Link:

https://www.youtube.com/watch?v=rfscVS0vtbw&t=109s

Data Analysis

Data analysis is a core thing to learn in Data science. If you are using Python then you need to learn **NumPy**, **Pandas**, **Matplotlib**, and **Seaborn** libraries for data analysis.
Following are two courses that will give a good understanding of these libraries.

Resources:

- Data Analysis with Python: Zero to Pandas by Jovian.ai (course)
- Data Analysis with Python by freecodecamp (course)

Links:

- https://jovian.ai/learn/data-analysis-with-python-zero-to-pandas
- https://www.freecodecamp.org/learn/data-analysis-with-python/

Machine Learning

After Data Analysis you need to learn Machine learning. For that, I have two great courses. One from **Udacity** where you will learn about the basics of machine learning and some algorithms. The other is from **freecodecamp.**

Resources:

- Introduction to machine learning course by Udacity.
- Machine Learning with Python by freecodecamp

Links:

- https://www.udacity.com/course/intro-to-machine-learning--ud120
- https://www.freecodecamp.org/learn/machine-learning-with-python/

Deep Learning

Deep learning is a sub-field of machine learning which has some advanced algorithms to deal with different problems. Udacity has a good course for this subject.

Resources:

- Intro to TensorFlow for Deep Learning by Udacity

Links:

- https://www.udacity.com/course/intro-to-tensorflow-for-deep-learning--ud187

If you find it helpful like and share it with your peers.

If you need any **help** in this feel free to **contact** me..