ML learning path:

A big trap in data science education is:
- learning DS libraries before learning coding basics
- learning ML algorithms before learning how to pre-process your data
- learning Deep Learning before Machine Learning
- Learning data viz before understanding the basics of statistical inference

This is where most people get diverted due to noises available while pursuing Data science.

Anytime you're learning a new concept you can't neglect the fundamentals & always keep the big picture in mind because:

1. You have to know coding basics before you can even debug the implementations of your DS/ML Libraries.

2. You have to know how to pre-process your data before applying machine-learning methods accurately.

3. You have to know statistical inference before you make sense of your visualization.

Remember to don't just jump into a course without taking the time to ask yourself "why" and "how" is this being used.

It's only when you start asking yourself questions about the problems where you begin to connect the dots more.

And by having a good foundation of the basics, those dots that you connect with new concepts will be retained a lot longer.

So the mostly followed and proven to be successful order of studying goes here:

- Conceptual understanding of Algorithm
- Deep dive using Practical examples with more technical details
- Understanding the Performance metrics specific for the algorithm
- Understanding dataset and code involved
- Practising example use cases
- Solving complex and unseen use cases
- Building end to solutions using Algorithms as part of a solution

Order of topics to learn:
- Python (3.X) fundamentals
- List, set, tuples and dictionary
- Pickling, Flask, JSON etc
- Numpy, Pandas, scipy
- Statistics (Basic mean, median, mode, SD, inferential, regression etc)
- Probability, permutations & combinations
- Understanding the Big picture of Datasciene and it's importance etc
- Data Analytics and its methodologies
- Data mining and its techniques
- Role of ML in analytics (predictions)
- Classifications of ML
- Understanding supervised models
- Start with Simple Linear Regression and the to Multiple Linear Regression
- Understanding various ways to plot a line (most importantly Gradient Descent)
- How to use Logistic Regression for classifications problems ? Understand the usage of Sigmoid function to convert the Linear Regression results into YES/NO etc.
- learning more advanced classifications algo like Decisions Tree, Random Forest, SVM etc
- Understanding need for unsupervised learning methods
- Use cases for clustering and segmentation.
- KMean & Kmeans++
- Steps to pickle a predicted model and converting it as a REST service using FLASK.