Developer Student Clubs

Kalyani Government Engineering College

Hello World in ML

Stepping into Machine Learning in the right way !!

What is Machine Learning?

Machine learning (ML) is the study of computer algorithms that improve automatically through experience. It is seen as a subset of artificial intelligence. Machine learning algorithms build a mathematical model based on sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to do so.

It involves computers learning from data provided so that they carry out certain tasks. For simple tasks assigned to computers, it is possible to program algorithms telling the machine how to execute all steps required to solve the problem at hand; on the computer's part, no learning is needed. For more advanced tasks, it can be challenging for a human to manually create the needed algorithms. In practice, it can turn out to be more effective to help the machine develop its own algorithm, rather than having human programmers specify every needed step.

Machine Learning Approaches:

Supervised Learning: The computer is presented with inputs and outputs and the goal is to learn a general rule to connect input to output.

Unsupervised Learning: The computer is provided with no output. The computer has to learn on its own how to structure input.

Reinforcement Learning: A computer program interacts with a dynamic environment in which it must perform a certain task. It is provided with rewards, and it tries to maximize it.

Types of problem we solve:

Classification: It is an instance of supervised learning where given an input we have to give it a class label. E.g. Dog-cat classifier, spam classifier.

Regression: It is also an instance of supervised learning where given an input we have to predict an real number. E.g. Price prediction etc.

Clustering: It is an instance of unsupervised learning where given an input we have to make clusters or group by interpreting the input.


amazon


Microsoft


NVIDIA

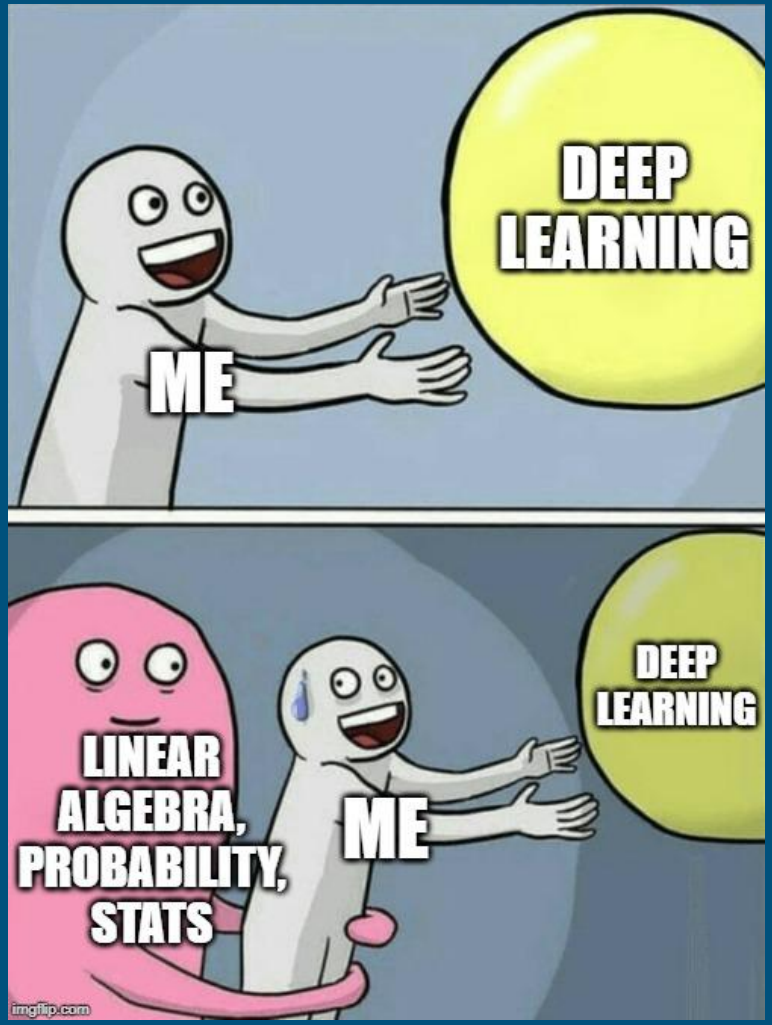

DeepMind


NETFLIX

Steps in Machine Learning

1. Data Collection and EDA
2. Data Cleaning/Preparation
3. Choose a model
4. Train the model
5. Evaluate the model
6. Parameter tuning
7. Make Predictions

When you move on to Deep Learning



So why “Hello World in ML” ?

Iris dataset

Iris dataset is often known as the hello world in ML as it is the simplest dataset to apply ML techniques.

In this live session we will be focusing on Exploratory Data Analysis i.e. EDA. As we need to understand what are the parameters, how many datapoints we have in our dataset. Basically to get a brief idea about it.

ASSIGNMENT !!!

Q: To perform Exploratory Data Analysis on iris dataset by making pdf,cdf, box-plots and violin-plots on different species of iris. Do share it on your social media accounts tagging us.