MACHINE LEARNING

One of the main differences between humans and computers is that humans learn from past experiences, at least they try, but computers or machines need to be told what to do. Computers are strict logic machines with zero common sense. That means if we want them to do something, we have to provide them with detailed, step-by-step instructions on exactly what to do.

**Machine learning focuses on the development of computer programs** that can access data and use it to learn for themselves.

MACHINE LEARNNG METHODS:

***Supervised Machine Learning algorithms:*** It can apply what has been learned in the past to new data using labeled examples to predict future events. Starting from the analysis of a known training dataset, the learning algorithm produces an inferred function to make predictions about the output values.

***Unsupervised Machine Learning algorithms:*** In contrast, unsupervised machine learning algorithms are used when the information used to train is neither classified nor labeled. Unsupervised learning studies how systems can infer a function to describe a hidden structure from unlabeled data.

***Semi-supervised Machine Learning algorithms:***Semi-supervisedmachine learning algorithms fall somewhere in between supervised and unsupervised learning since they use both labeled and unlabeled data for training — typically a small amount of labeled data and a large amount of unlabeled data. The systems that use this method are able to considerably improve learning accuracy.

***Reinforcement machine learning algorithms:***Reinforcementmachine learning algorithmis a learning method that interacts with its environment by producing actions and discovers errors or rewards. Trial and error search and delayed reward are the most relevant characteristics of reinforcement learning.

***WHERE CAN MACHINE LEARNING BE USED?***

***APPLICATIONS:***

**1. Social Media Services-**

From personalizing your news feed to better ads targeting, social media platforms are utilizing machine learning for their own and user benefits. Here are a few examples that you must be noticing, using, and loving in your social media accounts, without realizing that these wonderful features are nothing but the applications of ML.

**2. Online Fraud Detection**

Machine learning is proving its potential to make cyberspace a secure place and tracking monetary frauds online is one of its examples. For example: Paypal is using ML for protection against money laundering. The company uses a set of tools that helps them to compare millions of transactions taking place and distinguish between legitimate or illegitimate transactions taking place between the buyers and sellers.

**3. Virtual Personal Assistants**

Siri, Alexa, Google Now are some of the popular examples of virtual personal assistants. As the name suggests, they assist in finding information, when asked over voice. All you need to do is activate them and ask “What is my schedule for today?”, “What are the flights from Germany to London”, or similar questions. For answering, your personal assistant looks out for the information, recalls your related queries, or send a command to other resources (like phone apps) to collect info.

**4. Videos Surveillance**

Just imagine a single person monitoring multiple video cameras! Certainly, a difficult job to do and boring as well. This is why the idea of training computers to do this job makes sense.