Training Day-18 Report:

<u>Applications of Machine Learning:-</u>

Machine learning is one of the most exciting technologies that one would have ever come across. As is evident from the name, it gives the computer that which makes it more similar to humans: The ability to learn. Machine learning is actively being used today, perhaps in many more places than one would expect. Some of the most common applications are:

Image Recognition

Image Recognition is one of the reasons behind the boom one could have experienced in the field of Deep Learning. The task which started from classification between cats and dog images has now evolved up to the level of Face Recognition and real-world use cases based on that like employee attendance tracking.

Also, image recognition has helped revolutionized the healthcare industry by employing smart systems in disease recognition and diagnosis methodologies.

Speech Recognition

Speech Recognition based smart systems like Alexa and Siri have certainly come across and used to communicate with them. In the backend, these systems are based basically on Speech Recognition systems. These systems are designed such that they can convert voice instructions into text.

One more application of the Speech recognition that we can encounter in our day-to-day life is that of performing Google searches just by speaking to it.

Recommender Systems

As our world has digitalized more and more approximately every tech giants try to provide customized services to its users. This application is possible just because of the recommender systems which can analyze a user's preferences and search history and based on that they can recommend content or services to them.

An example of these services is very common for example youtube. It recommends new videos and content based on the user's past search patterns. Netflix

recommends movies and series based on the interest provided by users when someone creates an account for the very first time.

Fraud Detection

In today's world, most things have been digitalized varying from buying toothbrushes or making transactions of millions of dollars everything is accessible and easy to use. But with this process of digitization cases of fraudulent transactions and fraudulent activities have increased. Identifying them is not that easy but machine learning systems are very efficient in these tasks.

Due to these applications only whenever the system detects red flags in a user's activity than a suitable notification be provided to the administrator so, that these cases can be monitored properly for any spam or fraud activities.

Self Driving Cars

It would have been assumed that there is certainly some ghost who is driving a car if we ever saw a car being driven without a driver but all thanks to machine learning and deep learning that in today's world, this is possible and not a story from some fictional book. Even though the algorithms and tech stack behind these technologies are highly advanced but at the core it is machine learning which has made these applications possible.

The most common example of this use case is that of the Tesla cars which are well-tested and proven for autonomous driving.

Medical Diagnosis

If you are a machine learning practitioner or even if you are a student then you must have heard about projects like breast cancer Classification, Parkinson's Disease Classification, Pneumonia detection, and many more health-related tasks which are performed by machine learning models with more than 90% of accuracy.

Not even in the field of disease diagnosis in human beings but they work perfectly fine for plant disease-related tasks whether it is to predict the type of disease it is or to detect whether some disease is going to occur in the future.