Q-1 Do you think DL is going to replace ML in the near future? Why?

Ans-First of all deep learning is a subset of machine learning.Yes, I think DL is going to replace ML in the near future because deep learning is inspired by the functionality of our brain cells leading to concept of artificial neuron network just like our brain thereby to learn complex function mapping without any specific algorithm.DL performs better as the amount of data increases than ML because deep learning alogrithm needs large amount of data to understand it perfectly.As the hardware like GPU specification incresaes DL performance increases beacuse the GPU capability to perform matrix operation increases.Problem Solving Approach is simpler in DL than ML.Execution time is less in DL than ML.

Q-2 Pros and cons of various types of learning.

Ans-Pros of Supervised learning:

1)It is very helpful in classification problems.

2)It is very helpful in problems having continuous value as their output.

3)After the entire training is completed, you don’t necessarily need to keep the training data in your memory. Instead, you can keep the decision boundary as a mathematical formula.

4)Another typical task of supervised machine learning is to predict a target numerical value from some given data and labels.

Cons of Supervised learning:

1)It is limited in sense that it can't handle some of the complex tasks in machine learning.

2)It cannot classify data by discovering its features on its own, unlike unsupervised learning.

3)In the case of classification, if we give an input that is not from any of the classes in the training data, then the output may be a wrong class label. For example, let’s say you trained an image classifier with cats and dogs data. Then if you give the image of a giraffe, the output may be either cat or dog, which is not correct.

Pros of Unsupervised learning:

1)It is very useful for clustering of data to cluster clients having similarities in some parameters.

2)It is used for anomaly detection like credit card frauds.

3)It is used in associating relationship between problems like there is relation between bread and jam i.e. whenever we go to market to buy bread we also buy jam.

Cons of Unsupervised learning:

1)It is harder as compared to supervised learning.

2)We have doubt on the usefulness of the results as no answer labels are available.

3)It can be costly affair.

Pros of Reinforcement learning:

1)We learn on our own by following different paths and making a memory of that.There is no input and no output available.Training is of also not same level as compared to supervised and unsupervised learning.Best training is in supervised learning.

2)It is preferred to achieve long-term results which are very difficult to achieve.

3)It is very similar to the learning of human beings. Hence, it is close to achieving perfection.

Cons of Reinforcement learning:

1)It is not preferable to use for solving simple problems.

2)Another disadvantage is the curse of real-world samples. For example, consider the case of learning by robots. The robot hardware is usually very expensive, suffers from wear and tear, and requires careful maintenance. Repairing a robot system is costs a lot.