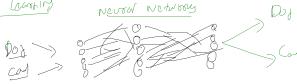


Data modeling

AI vs ML vs DL



Deep Learning



Artificial Intelligence, or AI, refers to any technique that makes computers to mimic human intelligence. The Artificial machine think logically and decide what they have been told for intelligent.

- gives the ability to machines
- To recognize a human's face.
- To move & manipulate objects.
- To understand the voice commands by humans, and also do various tasks.

Machine learning, or ML, is another technique to implement AI with experience. The machine learns from its mistakes and takes them into consideration for the next prediction. It improves itself using the experience.

Subs of AI

Deep learning, or DL, makes software to learn itself to perform tasks with less amount of data. In deep learning, the machine is trained with huge amounts of data which helps it to learn the patterns and trends in the data. Such methods are commonly used for image recognition for automation.

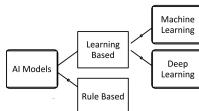
↳ basically a term used for the use of machine. Also:

Modeling

✓ AS Modelling refers to developing algorithms also called models, which can be trained to get intelligent outputs

✓ That is, writing codes to make a machine artificially intelligent

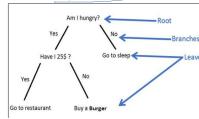
In the previous module of Data orientation, we have seen various forms of graphical representations which can be used for representing different parameters of data. The graphical representation of data is a visual way of displaying data. It helps us to observe trends and patterns out of it. And when it comes to machine learning and analyzing data, it must follow the graphical representation of data. This is because when it comes to discovering patterns and trends in data, the machine goes for mathematical computation. So, the graphical representation of data is the base for all the mathematical parameters in the heart of every AI model. Thus, whenever we talk about developing AI models, it is the graphical approach that is involved and which we need to.



Rule Based Approach

Rule Based Approach Refers to the AI modelling where the relationship or patterns in data are defined by the developer. The machine follows the rules or instructions mentioned by the developer, and performs its task accordingly.

Decision Tree



So,

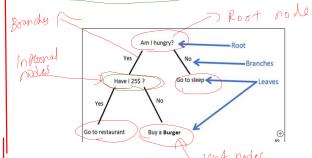
Learning Based Approach

Refers to the AI modelling where the relationship or patterns in data are not defined by the developer. Instead, the machine is given a set of training data, and it tries to figure out patterns and trends out of it. Generally this approach is followed when the data is unlabeled and too random for a human to make sense out of it. Thus, the machine looks at the data, tries to extract similar features out of it and clusters same datasets together. In the end as output, the machine tells us about the trends which it observed in the training data.

Decision Tree

↳ It is the most powerful & popular tool for classification & prediction.

↳ A decision tree is a flowchart like tree structure, where each internal node denotes a test on an attribute, each branch represents an outcome of the test, and each leaf node (terminal node) holds a class label.



↳ Root node.

↳ Branches

↳ Leaf nodes