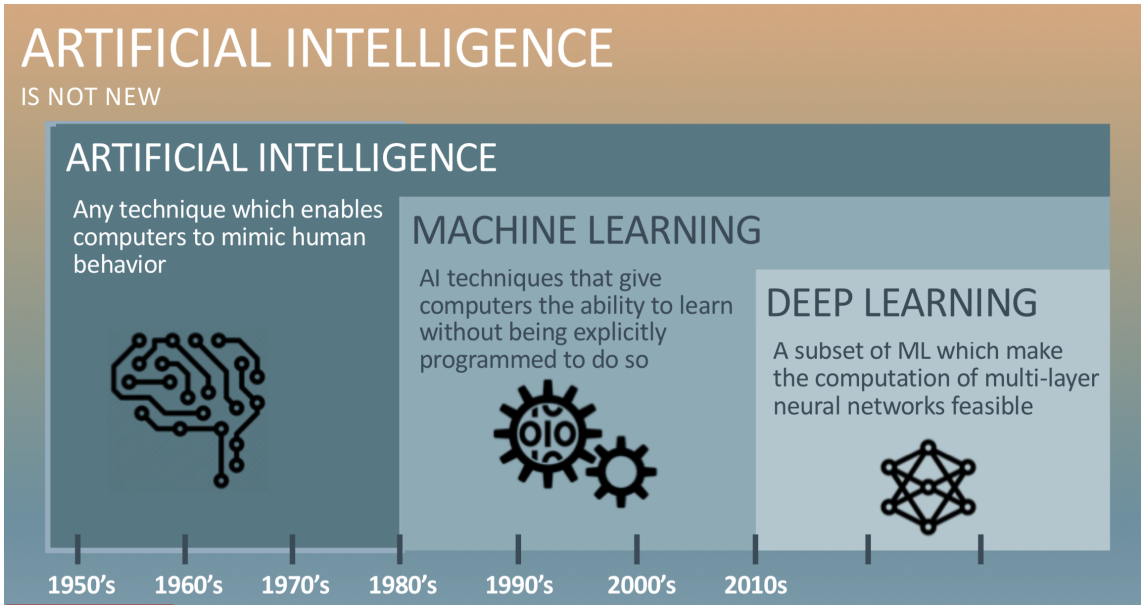

Deep Learning Introduction

- Deep learning is a branch of machine learning which is completely based on artificial neural networks, as neural network is going to mimic the human brain so deep learning is also a kind of mimic of human brain.
- it is an artificial intelligence (AI) function that imitates the workings of the human brain in processing data and creating patterns for use in decision making.

KEY TAKEAWAYS

- Deep learning is an AI function that mimics the workings of the human brain in processing data for use in detecting objects, recognizing speech, translating languages, and making decisions.
- Deep learning AI is able to learn without human supervision, drawing from data that is both unstructured and unlabeled.
- Deep learning, a form of machine learning, can be used to help detect fraud or money laundering, among other functions.

Key Difference between Machine Learning and Deep Learning :

S.No.	Machine Learning	Deep Learning
1.	Machine Learning is a superset of Deep Learning	Deep Learning is a subset of Machine Learning
2.	The data represented in Machine Learning is quite different as compared to Deep Learning as it uses structured data	The data representation is used in Deep Learning is quite different as it uses neural networks(ANN).
3.	Machine Learning is an evolution of AI	Deep Learning is an evolution to Machine Learning. Basically it is how deep is the machine learning.
4.	Machine learning consists of thousands of data points.	Big Data: Millions of data points.
5.	Outputs: Numerical Value, like classification of score	Anything from numerical values to free-form elements, such as free text and sound.
6.	Uses various types of automated algorithms that turn to model functions and predict future action from data.	Uses neural network that passes data through processing layers to the interpret data features and relations.
7.	Algorithms are detected by data analysts to examine specific variables in data sets.	Algorithms are largely self-depicted on data analysis once they're put into production.
8.	Machine Learning is highly used to stay in the competition and learn new things.	Deep Learning solves complex machine learning issues.

Types of Deep Learning Algorithms That I Coverd In Notebook

1. Multilayer Perceptrons (MLPs)
2. Convolutional Neural Networks (CNNs)
3. Recurrent Neural Networks (RNNs)
4. Long Short Term Memory Networks (LSTMs)
5. Generative Adversarial Networks (GANs)
6. Restricted Boltzmann Machines(RBMs)
7. Autoencoders
8. Self Organizing Maps (SOMs)

There are so many techniques but in my note book i will focus on this 8 topic.