

MACHINE LEARNING

(R16 IV-II SEM)



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DEFINITION



Arthur Samuel, a pioneer in the field of artificial intelligence and computer gaming, coined the term “**Machine Learning**”. He defined machine learning as –

“**Field of study that gives computers the capability to learn without being explicitly programmed**”.

- Machine Learning is an application of Artificial Intelligence.
- It allows software applications to become accurate in predicting outcomes.
- It focuses on the development of computer programs, and the primary aim is to allow computers to learn automatically without human intervention.

Applications of Machine Learning



Image & Speech
Recognition

Medical Diagnosis

Statistical Arbitrage

Learning Associations

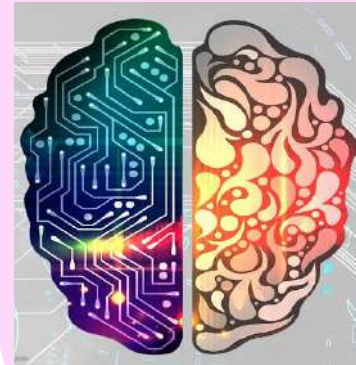


Classification

Prediction

Extraction

Regression



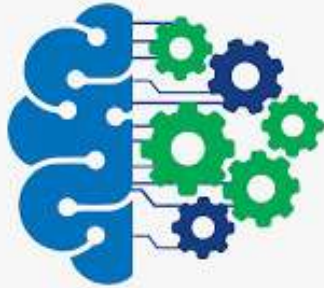
COURSE OBJECTIVES

- Familiarity with a set of well-known supervised, unsupervised and semi-supervised learning algorithms.
- Understanding different models in machine learning algorithms.
- The ability to implement some basic machine learning algorithms.
- Understanding of how machine learning algorithms are evaluated

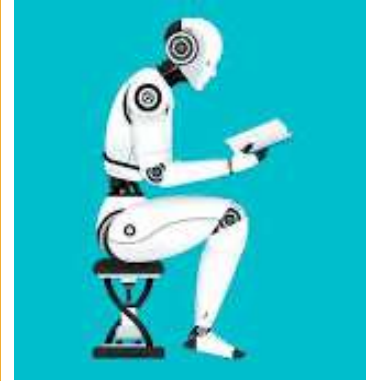


COURSE OUTCOMES

CO1:
Recall the role of machine learning in real time applications.



CO2:
Illustrate the problems in machine learning.



CO3:
List various models in machine learning.

CO4:
Construct various models in machine learning.



CO5:
Outline the probabilistic models & features in machine learning.



CO6:
Analyze the dimensionality reduction & **Recall** artificial neural networks

Why am I Teaching

1

- The purpose of machine learning is to discover patterns in your data and then make predictions based on often complex patterns to answer business questions, detect and analyse trends and help solve problems.

2

- The objective of machine learning in business is not only for effective data collection, but to make use of the ever increasing amounts being gathered by manipulating and analysing it without heavy human input.

3

- Machine intelligence enables complex and larger data to be processed and analysed along with the desired results being achieved such as determining customer trends, detecting fraud, spotting buying trends and other primary objectives.

4

- Machine learning in business therefore offers an important commercial benefit in being able to make the best use of your data.

Why am I Learning

1

- Machine learning helps increase your efficiency.

2

- You can understand your customers better.

3

- You can personalize your marketing campaigns.

4

- Machine learning recommends products to your customers.

5

- Learning machine learning brings in better career opportunities.

6

- Machine Learning Jobs on the rise



What I am Teaching

1

Illustrate the problems in machine learning.

3

Construct various models in machine learning.

5

Analyze the dimensionality reduction & **Recall** artificial neural networks

2

Recall the role of machine learning in real time applications.

List various models in machine learning.

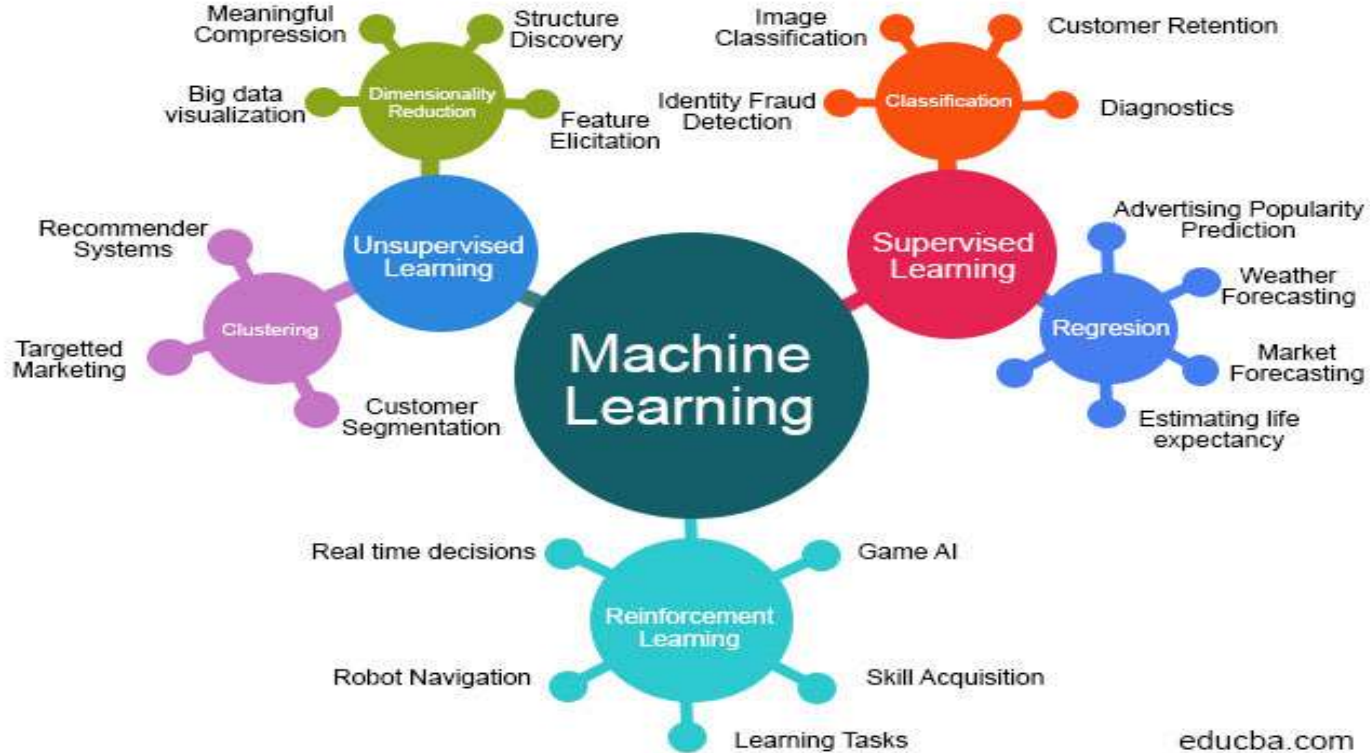
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Outline the probabilistic models & features in machine learning.

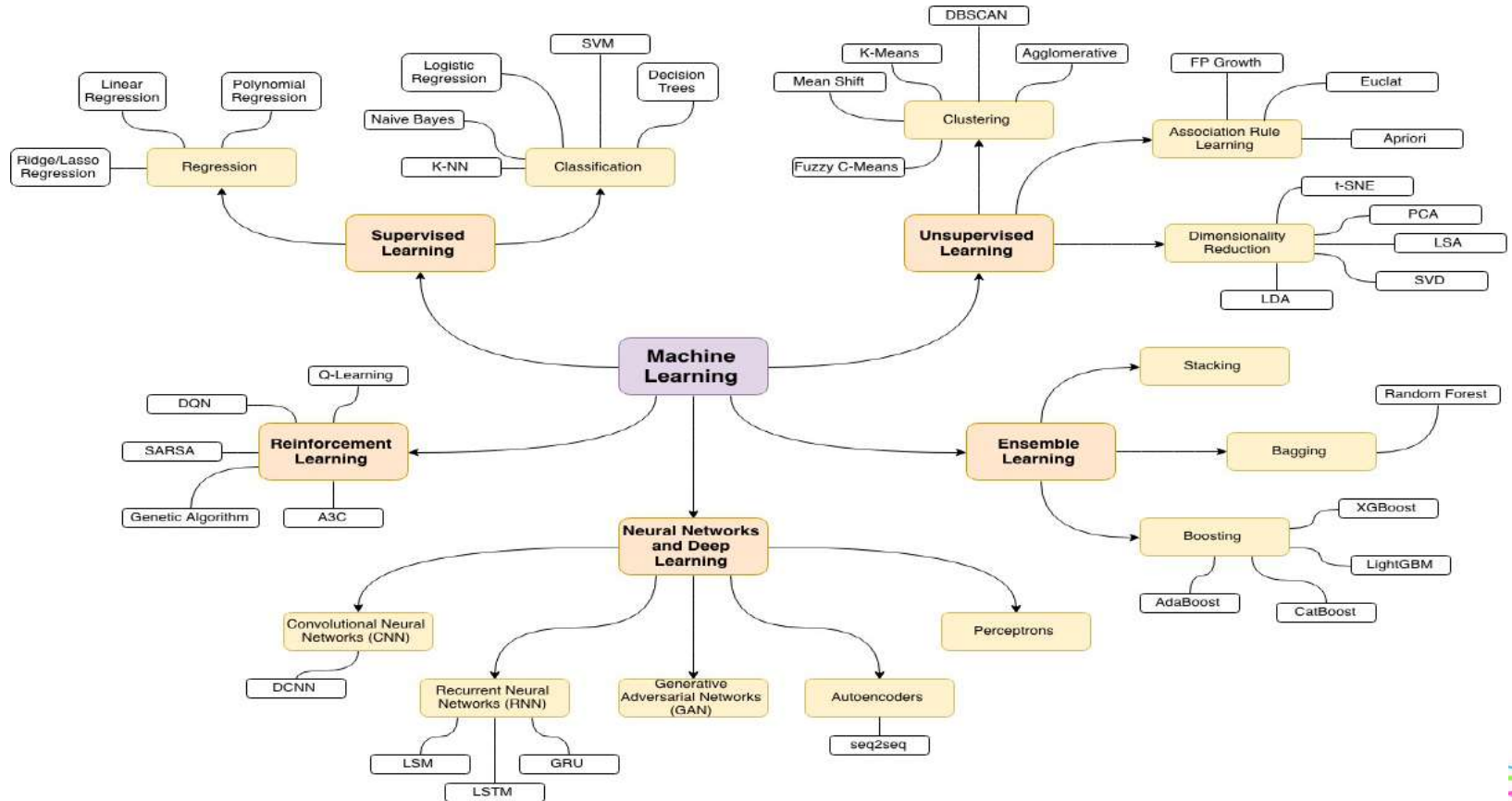
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What I am Teaching

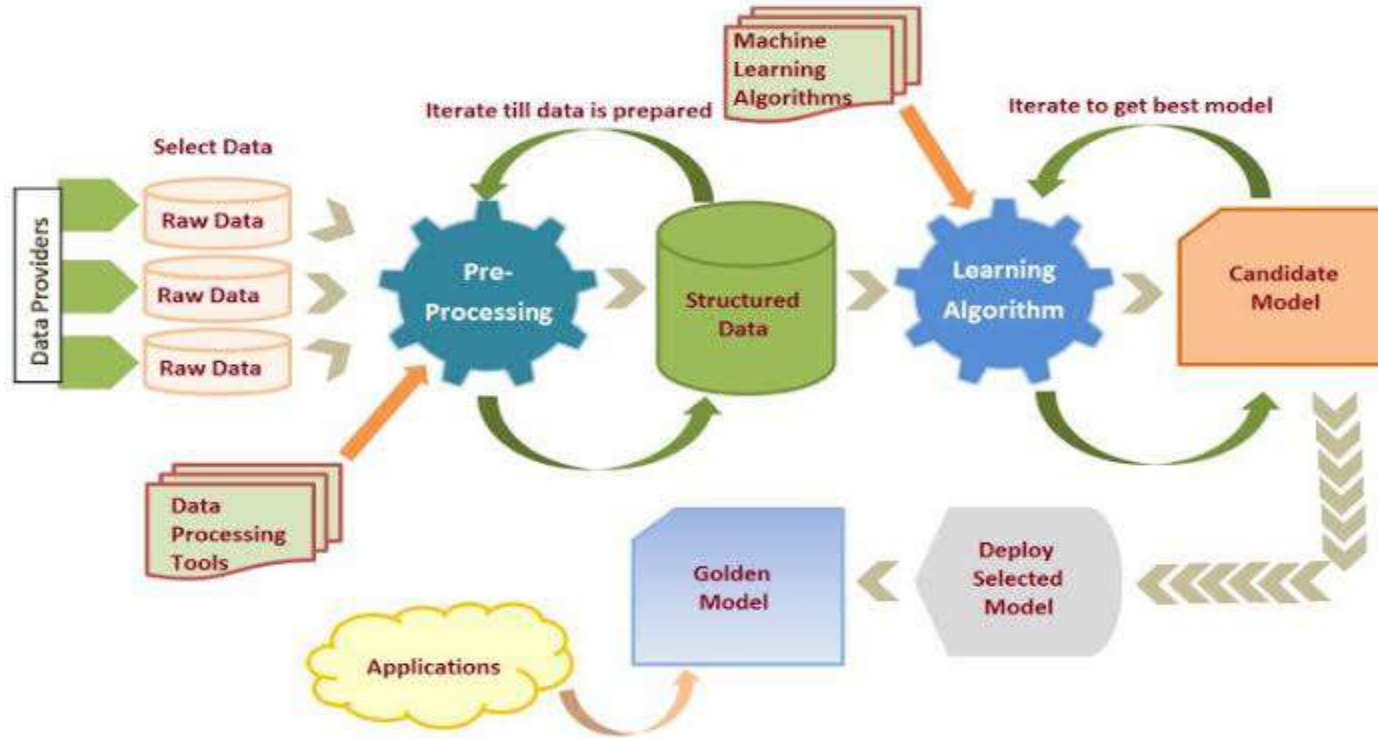
Machine Learning Algorithms



What I am Learning



Essence of Machine Learning



THANK YOU!

The image features the words 'THANK YOU!' in a vibrant, hand-painted style. Each letter is a different color: 'T' is pink, 'H' is green, 'A' is blue, 'N' is red, 'K' is yellow, 'Y' is red, 'O' is pink, 'U' is green, and the exclamation point is blue. The letters have a textured, brush-stroke appearance. The background is white and filled with small, multi-colored dots (pink, green, blue, yellow) scattered around the text. There are also faint, light gray camera icons scattered across the image, suggesting a social media or digital theme.