



SNS College of Engineering

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Redesigning Common Mind & Business Towards Excellence



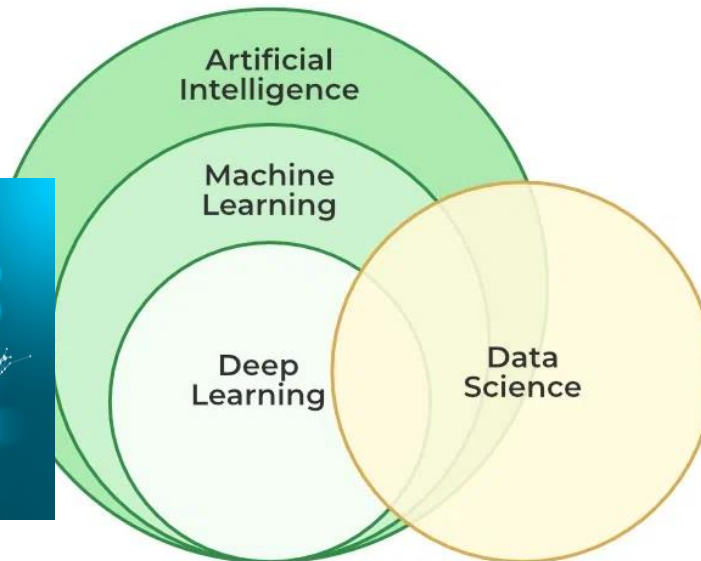
Build an Entrepreneurial Mindset Through Our Design Thinking Framework

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

UNIT - 3

UNSUPERVISED LEARNING



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Unsupervised Learning



- Unsupervised learning in artificial intelligence is a type of machine learning that **learns from data without human supervision.**
- Unsupervised machine learning models are given **unlabeled data** and allowed to discover patterns and insights **without any explicit guidance or instruction.**
- Unsupervised learning, also known as unsupervised machine learning, uses machine learning (ML) algorithms **to analyze and cluster unlabeled data sets.**
- These algorithms discover hidden patterns or data groupings **without the need for human intervention.**



Unsupervised Learning

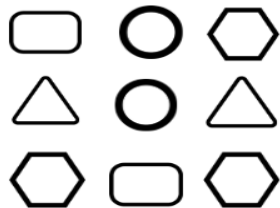


The latest advancements in deep unsupervised learning models have enhanced this capability, enabling more nuanced understanding of complex datasets.

Examples:

- Cybersecurity, Customer segmentation.
- Fraud detection, Recommendation Engines.
- Medical imaging , Genetic research
- Equipment maintenance

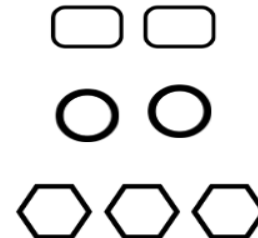
Unlabelled Data



Machine



Results





Comparison of SL & USL



Build an Entrepreneurial Mindset Through Our Design Thinking FrameWork

	Supervised Learning	Unsupervised learning
Objective	To approximate a function that maps inputs to outputs based out example input-output pairs.	To build a concise representation of the data and generate imaginative content from it.
Accuracy	Highly accurate and reliable.	Less accurate and reliable.
Complexity	Simpler method.	Computationally complex.
Classes	Number of classes is <i>known</i> .	Number of classes is <i>unknown</i> .
Output	A desired output value (also called the supervisory signal).	No corresponding output values.



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sign Thinking FrameWork

Thank
You