Module 01

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Module 01

Foundations of Generative AI
and
Language Models

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Agenda

- What is Generative AI ?

- Key Domains

- LLM Basics

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What is Generative AI?
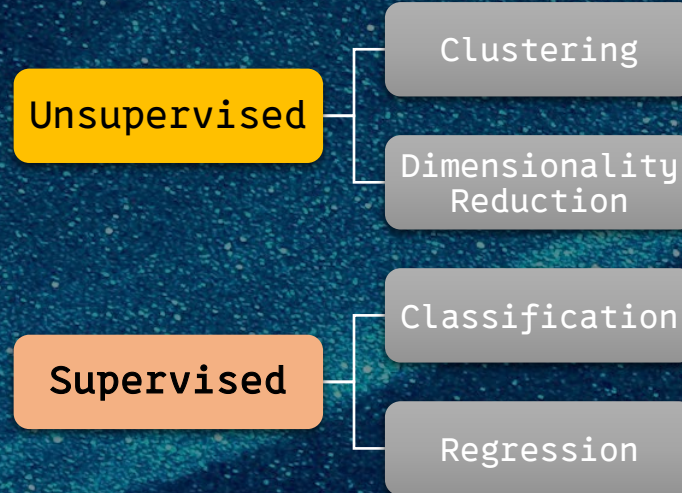
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Generative AI

is a class of models in the unsupervised machine learning space that help us model the underlying distributions responsible for generating the dataset under consideration

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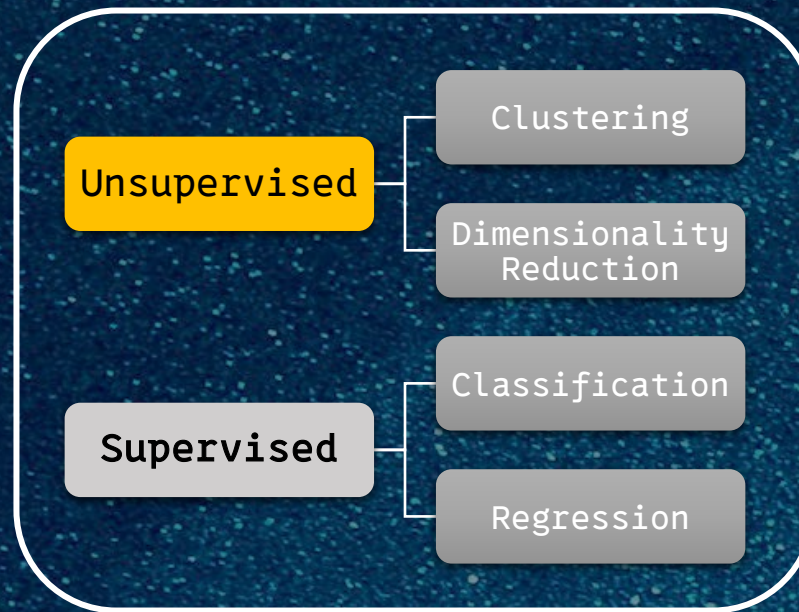
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Generative AI

A class of models in the unsupervised machine learning space that help us model the underlying distributions responsible for generating the dataset under consideration

Unsupervised
- Clustering
- Dimensionality Reduction

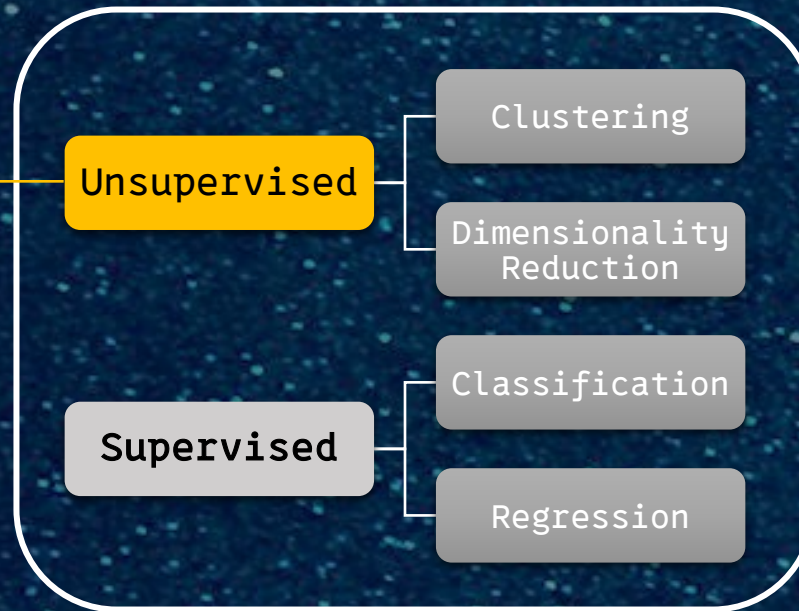Supervised
- Classification
- Regression

Generative AI

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Discriminative ML

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Key Domains

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NLP Vision Audio Video Multi-Modal

NLP Basics

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NLP Basics

Text Representation

- Requires additional steps as compared to numerical data
- Key Methods:
  - TFIDF
  - Word2Vec
  - Contextual Embeddings

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Attention Mechanism

o Helps models focus on relevant portions of input
o Improves model performance

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Transformer Architecture

- o Key breakthrough kickstarting the LM craze
- o Architectures:
  - o Encoder-Decoder
  - o Encoder Only
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NLP Basics

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NLP Tasks

- Language Modeling
- Classification
- Clustering
- Q&A
- Summarization
- Topic Modeling
- Translation
- Similarity Checks
- …