Analytics Vidhya | DATAHACK SUMMIT

Workshop

NLP using Generative Models:: Module 01

Speaker

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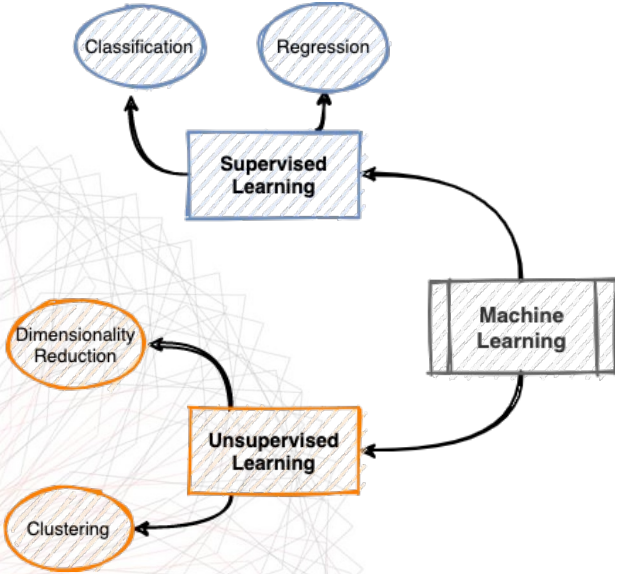
Agenda :: Module 01

- What is Generative AI?
- Key Domains
- The NLP Journey

Image Sources:

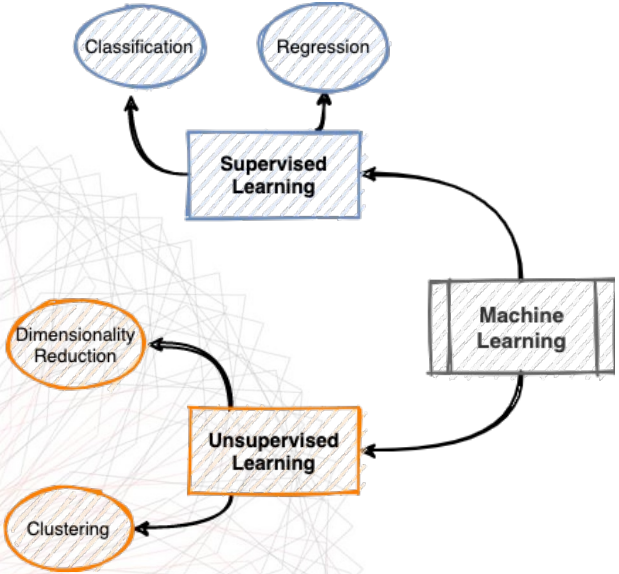
- https://thisartworkdoesnotexist .com/

Machine Learning Landscape



- **Supervised**
  - Regression
  - Classification
- **Unsupervised**
  - Clustering
  - Dimensionality Reduction

Machine Learning Landscape



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Discriminative Modeling

What is Generative AI?

- Generative models are a class of models in the unsupervised machine learning space
- These help us model the underlying distributions responsible for generating the dataset under consideration

> “There is tremendous amount of data easily accessible in most cases. Generative models analyze and understand such datasets”

Key Domains

- NLP
  - Text Completion
  - Code Generation
- Computer Vision
  - Image Generation (text to image, image to image)
  - Style Transfer
  - Super-Resolution
  - Image Out-Painting
- Audio
  - Audio Generation (text to audio, audio to audio)
  - Music Generation
- Video
- Multi-Modal

Image Sources:

- https://stability.ai/stablediffusion [prompt: Vintage hot rod with custom flame paint job]

The NLP Journey

- NLP
  - TF-IDF
  - RNNs
  - LSTMs
  - Word2Vec
  - Attention/Transformers
  - BERT / GPT
  - GPT2
  - InstructNet/InstructGPT
  - GPT3.5
  - GPT4

Image Sources:

- Neural.love [prompt: retro poster, programmer, laptop, music]