Generative AI

Large language models

- **ChatGPT**
- **Google Gemini**
- **Meta Llama**

What is Generative AI?

Generative AI generate new data based on training sample.Generative model can generate Image,Text, Audio, Videos etc. data as output.

So generative AI is a very huge topics,
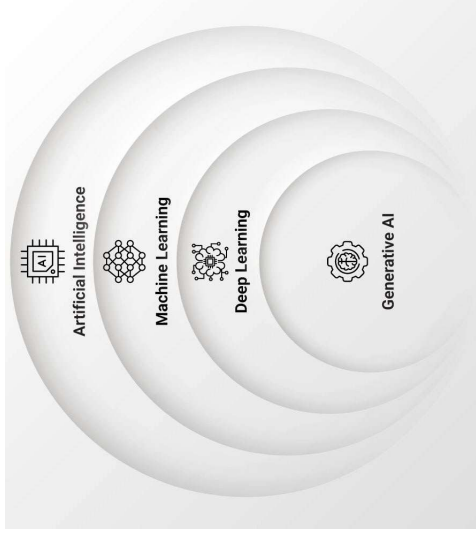
- Generative Image model
- Generative Language model

Generative Model:

Questions →

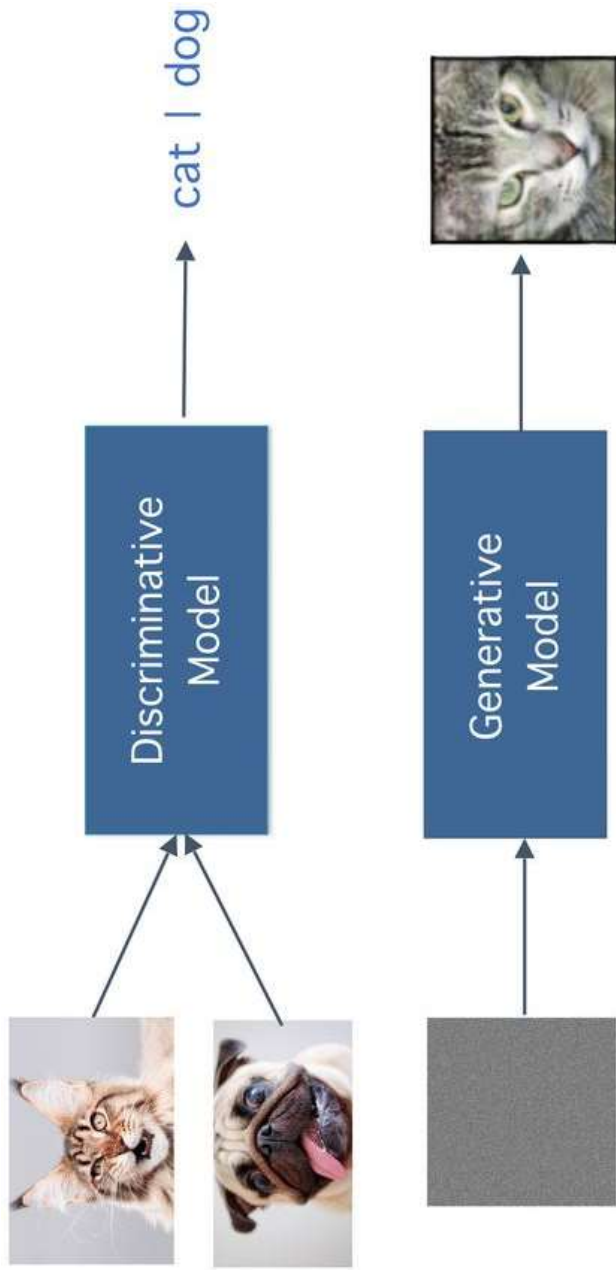Responses →

Why are generative models required?

- Understand Complex Pattern from Data
- Content generation
- Build Powerful Application
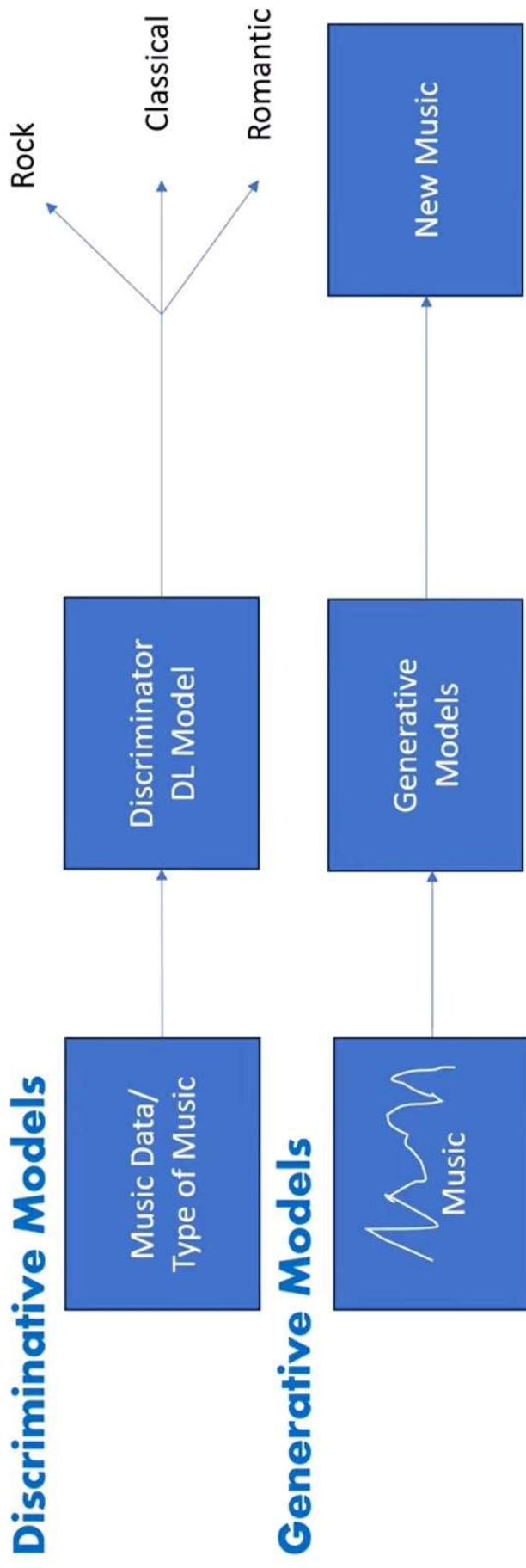
Where Generative AI Exists.

- Machine Learning is the subset of Artificial Intelligence

- Deep Learning is the subset of Machine Learning

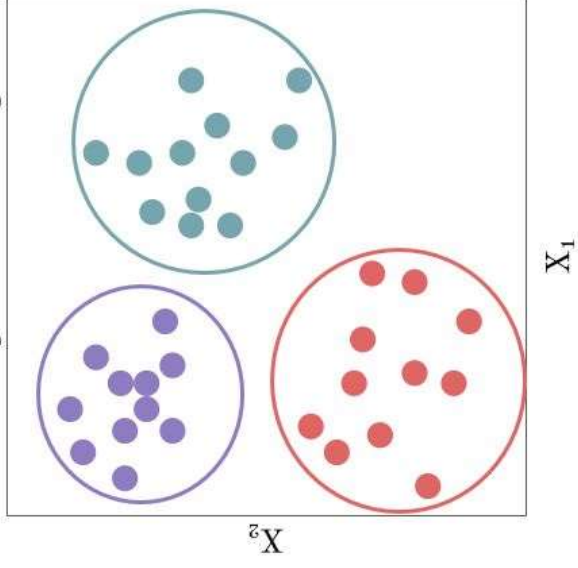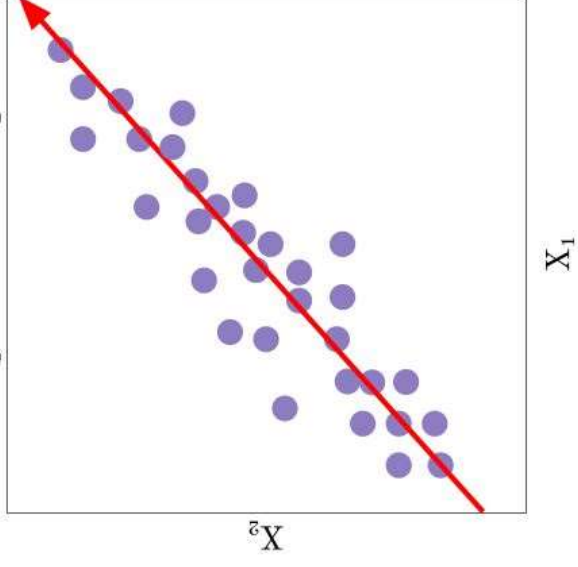- Generative AI is the subset of Deep Learning

Artificial Intelligence

Machine Learning

Deep Learning

Generative AI

Discriminative vs Generative Model

cat | dog

Discriminative Model

Generative Model

Discriminative vs Generative Model

Discriminative Models

Music Data/ Type of Music	→	Discriminator DL Model

→ Rock
→ Classical
→ Romantic

Generative Models

Music	→	Generative Models

→ New Music

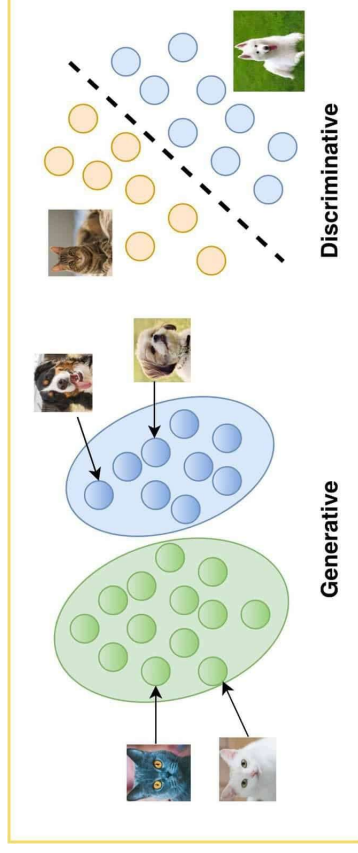Unsupervised Learning

Supervised Learning

X_2

X_1

X_2

X_1

Clustering:
- K-Means
- DBScan

Classification & Regression:

Generative AI is a subset of deep learning and Generative models are trained on huge amount of data.

While training the generative model we don't need to provide a label data, It is not possible when we have a huge amount of data, So, it's just try to see the relationship between the distribution of the data. **In Generative AI we give unstructured data to the LLM model for training purpose.**

What is LLMs?

Large Language Models (LLMs) are foundational machine learning models that use deep learning algorithms to process and understand natural language. These models are trained on massive amounts of text data to learn patterns and entity relationships in the language.

It is a language model which is responsible for performing task such as **text** to **text generation** , **text to image generation and image to text generations.**

What makes LLM so Powerful?

- In case of LLM, one model can be used for a whole variety of tasks like:-

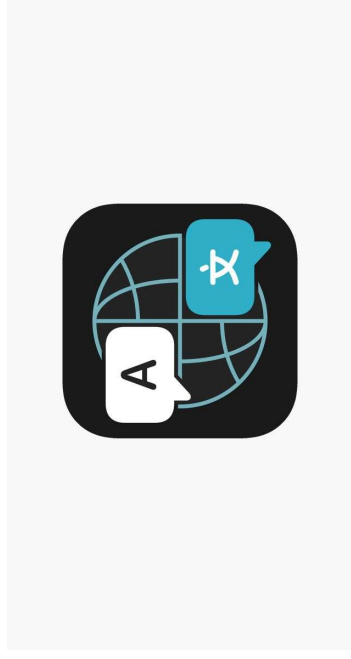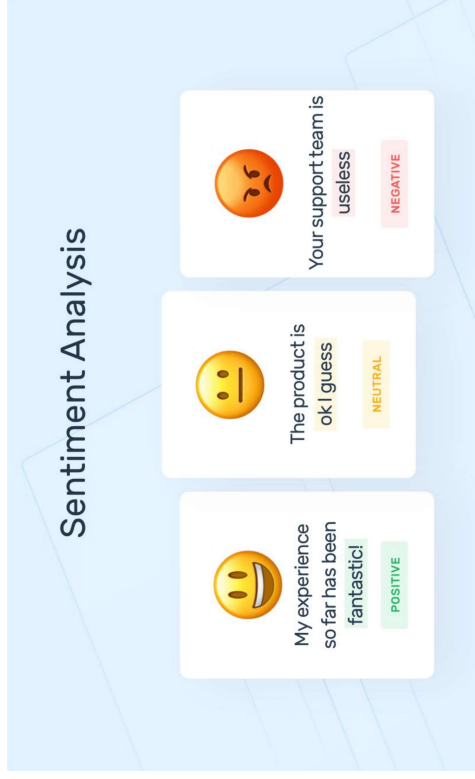**Text generation, Chatbot, summarizer, translation, code generation**

& so on ...

So, LLM is subset of Deep Learning & it has some properties merge with

Generative AI

Why LLM so Powerful?

- Train the model for a specific task

Sentiment Analysis

My experience
so far has been
fantastic!
POSITIVE

The product is
ok I guess
NEUTRAL

Your support team is
useless
NEGATIVE

Few milestone in large language model

- Gemini
- GPT
- XLM
- T5
- Llama
- Mistral
- Falcon