



What is  
Generative AI  
and how it is  
connected to AI  
& Data World?



# Generative AI could boost India's economy by \$1.2-1.5 trillion in the next seven years: EY study

The Maine secretary of state ruled that Trump should be taken off the ballot. Would this save democracy from a dangerous threat — or imperil it further?

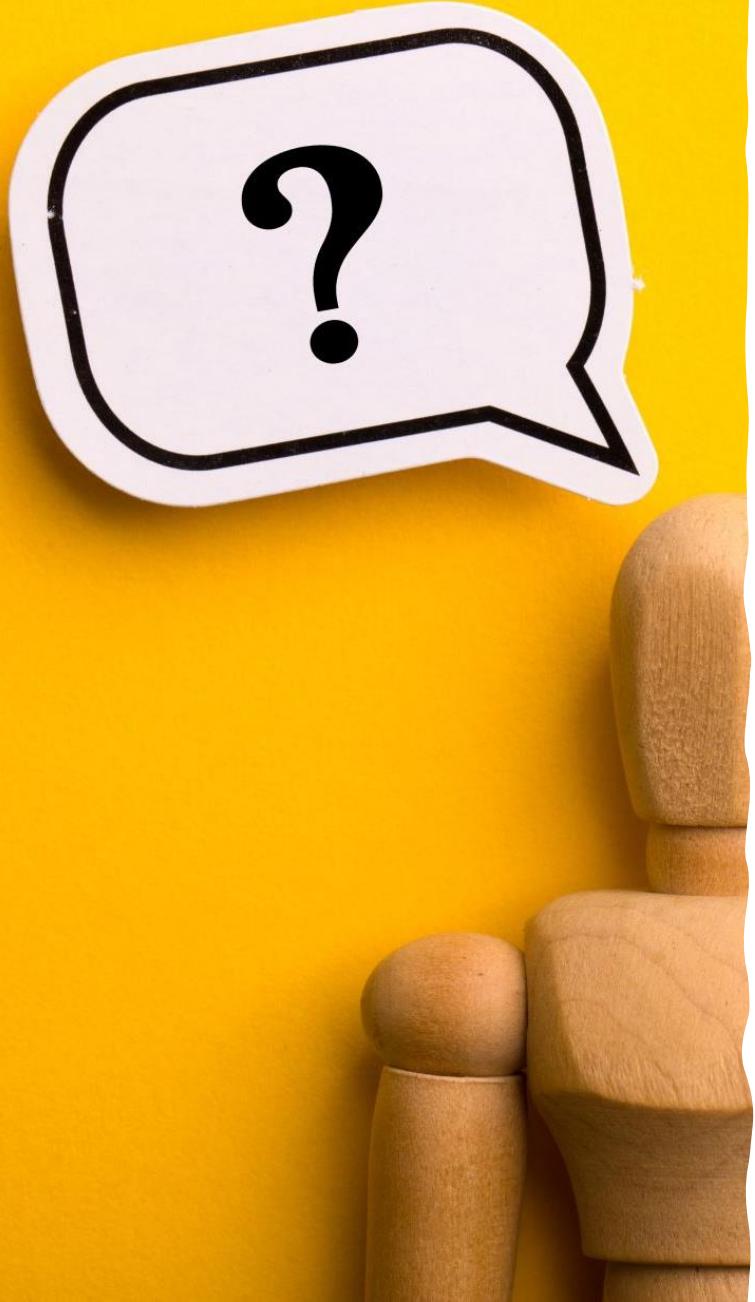
By Andrew Prokop | andrew@vox.com | Updated Dec 19, 2023, 7:08pm EST

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# GENAI

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# What is Gen-AI?

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**GEN AI**

# GEN

ChatGPT ●

5 year-old keeps |



blonde girl in a candy shop, g



# **ARTIFICIAL INTELLIGENCE**

**A BRANCH OF COMPUTER SCIENCE THAT DEALS WITH  
MAKING COMPUTERS AND MACHINES SMART ENOUGH  
SO THAT THEY CAN BEHAVE LIKE HUMANS.**

# **ARTIFICIAL INTELLIGENCE**

**EX. UNDERSTANDING LANGUAGE,  
RECOGNIZING OBJECTS  
AND PATTERNS.**



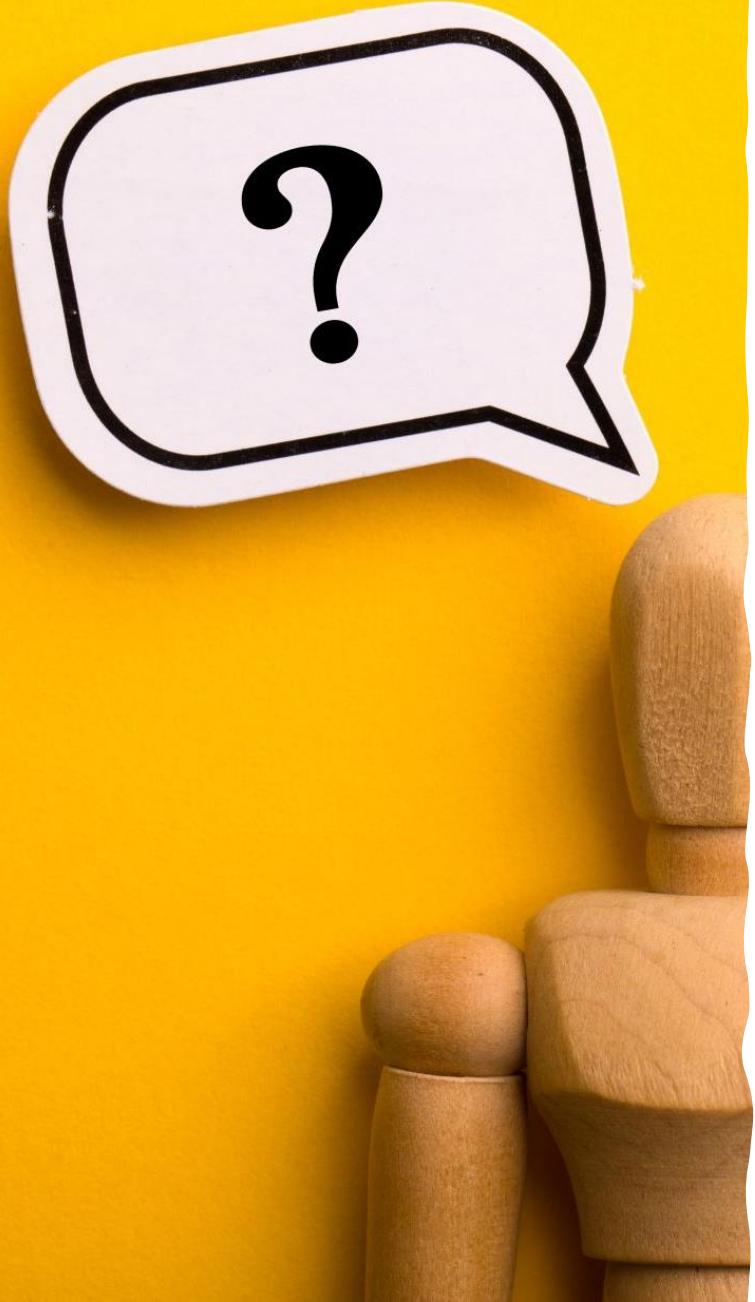
Why is everybody  
talking about this  
now?



**HARDWARE**

**SOFTWARE**

**DATA**



# What is GPU?

**GPU**

**GRAPHICS PROCESSING UNIT**

# GPU



# CPU



# CPU

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- GENERALIST
- GOOD AT PERFORMINH COMPLEX TASK & DECISION MAKING
- WORKS ON A JOB ONE AT A TIME

# GPU

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- GREAT AT SIMPLER REPETITIVE TASKS
- CAN WORK ON MANY TASKS AT SAME TIME

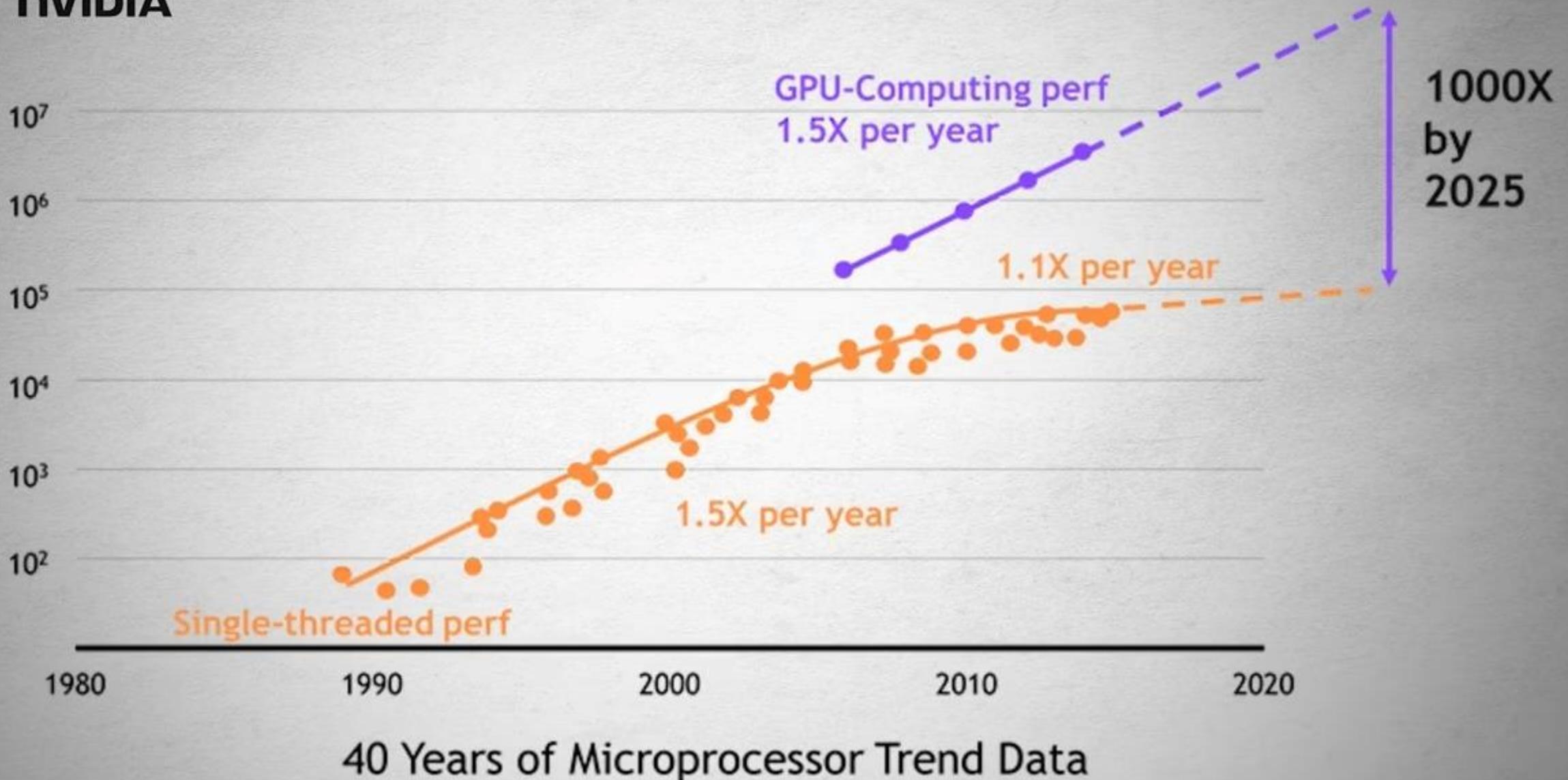


- ARTIFICIAL INTELLIGENCE
- MACHINE LEARNING









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# Attention Is All You Need

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News / Technology / ChatGPT becomes fastest application to hit 100 million users, overtaking Facebook and Google

# ChatGPT becomes fastest application to hit 100 million users, overtaking Facebook and Google

ChatGPT is the fastest-growing consumer application in the history of internet applications.

By: [Tech Desk](#)

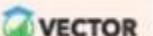
New Delhi | Updated: February 6, 2023 08:15 IST

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months to reach 100 million monthly users, and Instagram



# GPT-4 Passes the Bar Exam: What That Means for Artificial Intelligence Tools in the Legal Profession

April 19, 2023 | By Pablo Arredondo, Q&A with Sharon Driscoll and Monica Schreiber

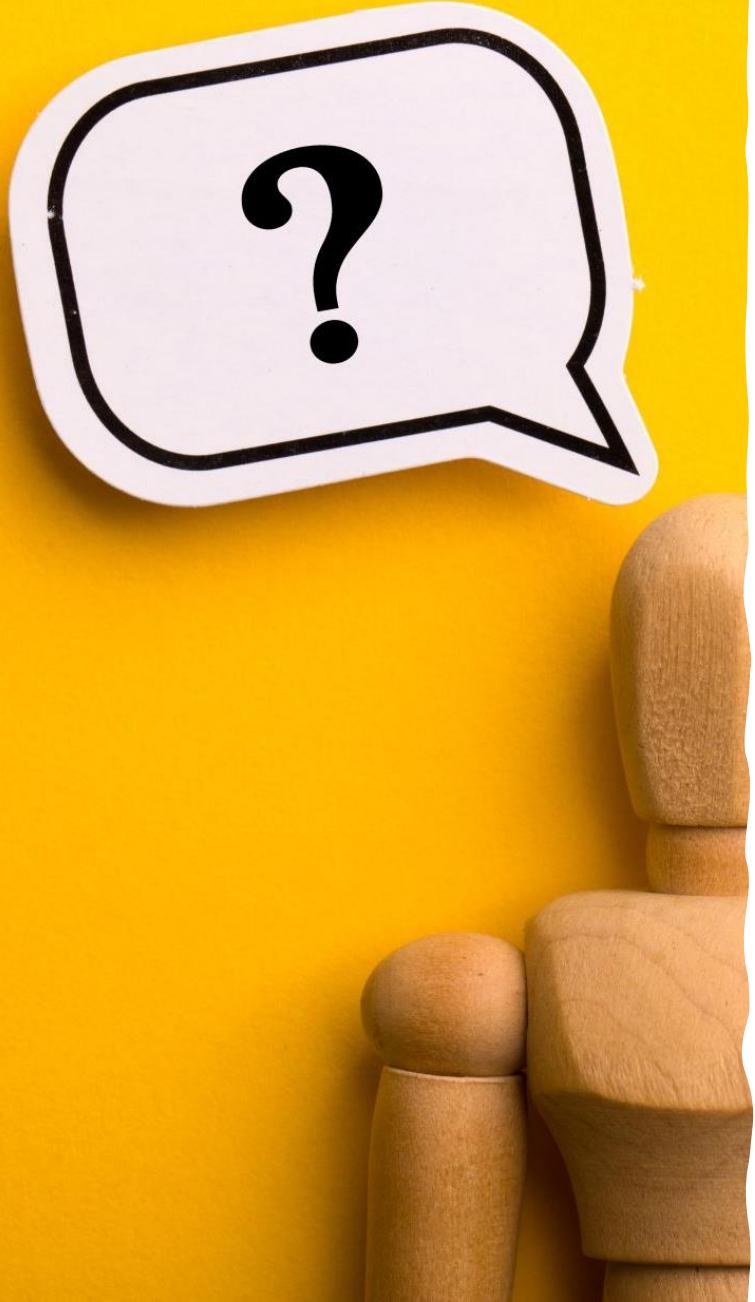
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CodeX—The Stanford Center for Legal Informatics and the legal technology company Casetext recently announced what they called “a watershed moment.” Research collaborators had deployed GPT-4, the latest generation Large Language Model (LLM), to take—and pass—the Uniform Bar Exam (UBE). GPT-4 didn’t just squeak by. It passed the multiple-choice portion of the exam and both components of the written portion, exceeding not only all prior LLM’s scores, but also the average score of real-life bar exam takers, scoring in the 90th percentile.

Casetext’s Chief Innovation Officer and co-founder Pablo Arredondo, JD ’05, who is a Codex fellow, collaborated with CodeX-affiliated faculty Daniel Katz and Michael Bommarito to study GPT-4’s performance on the UBE. In earlier work, Katz and Bommarito found that a LLM released in late 2022 was unable to pass the multiple-choice portion of the UBE. Their recently published paper, “[GPT-4 Passes the Bar Exam](#)” quickly caught the





How did the GPT  
passed the bar and  
SAT exam?



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DATA SCIENCE

# OpenAI GPT-3: Everything You Need to Know [Updated]

12 minute read | September 27, 2023



Written by:

Kindra Cooper

## IN THIS ARTICLE

OpenAI's latest model has gone viral again. Much like its predecessor, there is no stopping the buzz that OpenAI's latest model GPT-3 is creating around the internet. As experts praise the model for its

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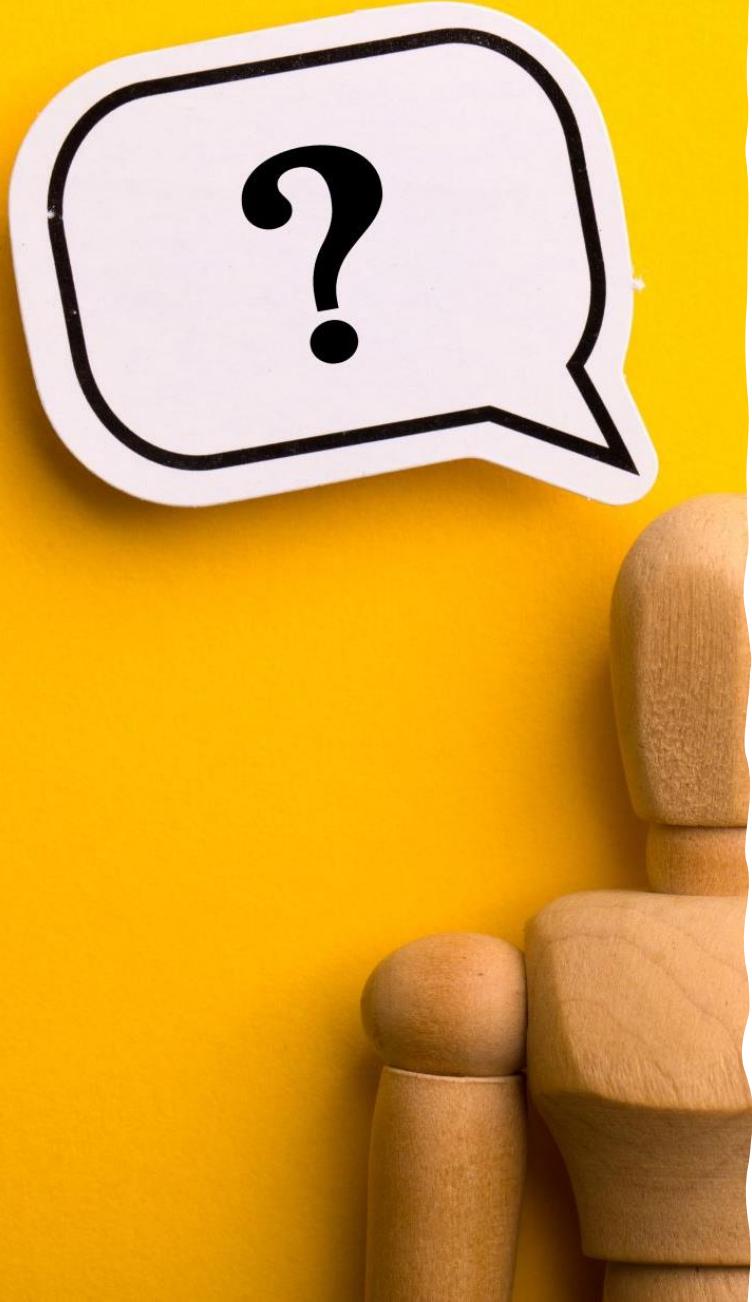
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Read Wikipedia in your language ▾



How ML and AI are  
related?

# MACHINE LEARNING

**IS A SUBSET/TYPE OF AI THAT FOCUS ON  
BUILDING SYSTEM THAT LEARN FROM DATA  
AND BEHAVES LIKE HUMANS**

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# MACHINE LEARNING

**IT IS A PROGRAMME OR SYSTEM THAT TRAINS A MODEL  
FROM INPUT DATA,  
THAT TRAINED MODEL CAN MAKE USEFULL PREDICTION  
FROM NEW OR NEVER BEFORE SEEN DATA DRAWN FROM  
THE SAME ONE USED TO TRAIN THE MODEL**

# MACHINE LEARNING

**GIVES THE COMPUTER THE ABILITY TO  
LEARN WITHOUT EXPLICIT PROGRAMMING.**

**MACHINE LEARNING**

**SUPERVISED**

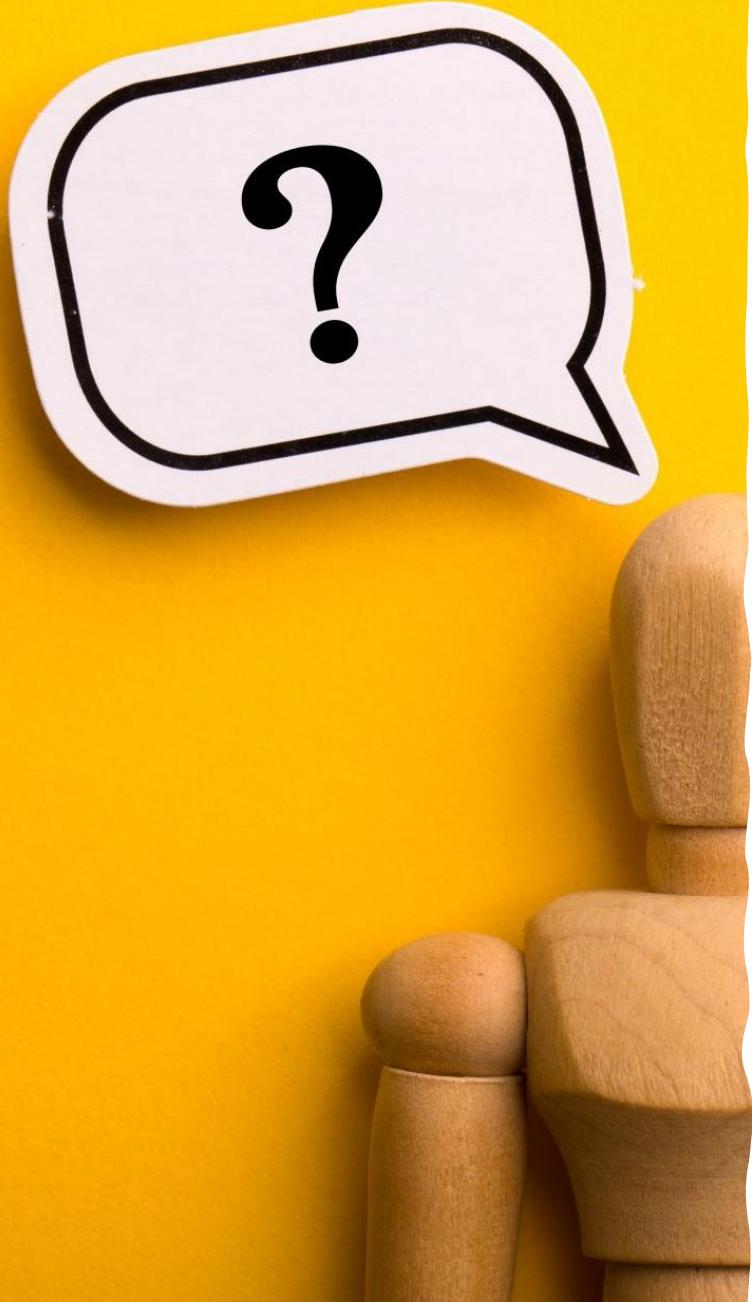
**LABELED DATA**

**COMES WITH A TAG LIKE  
NAME TYPE OR NUMBER**

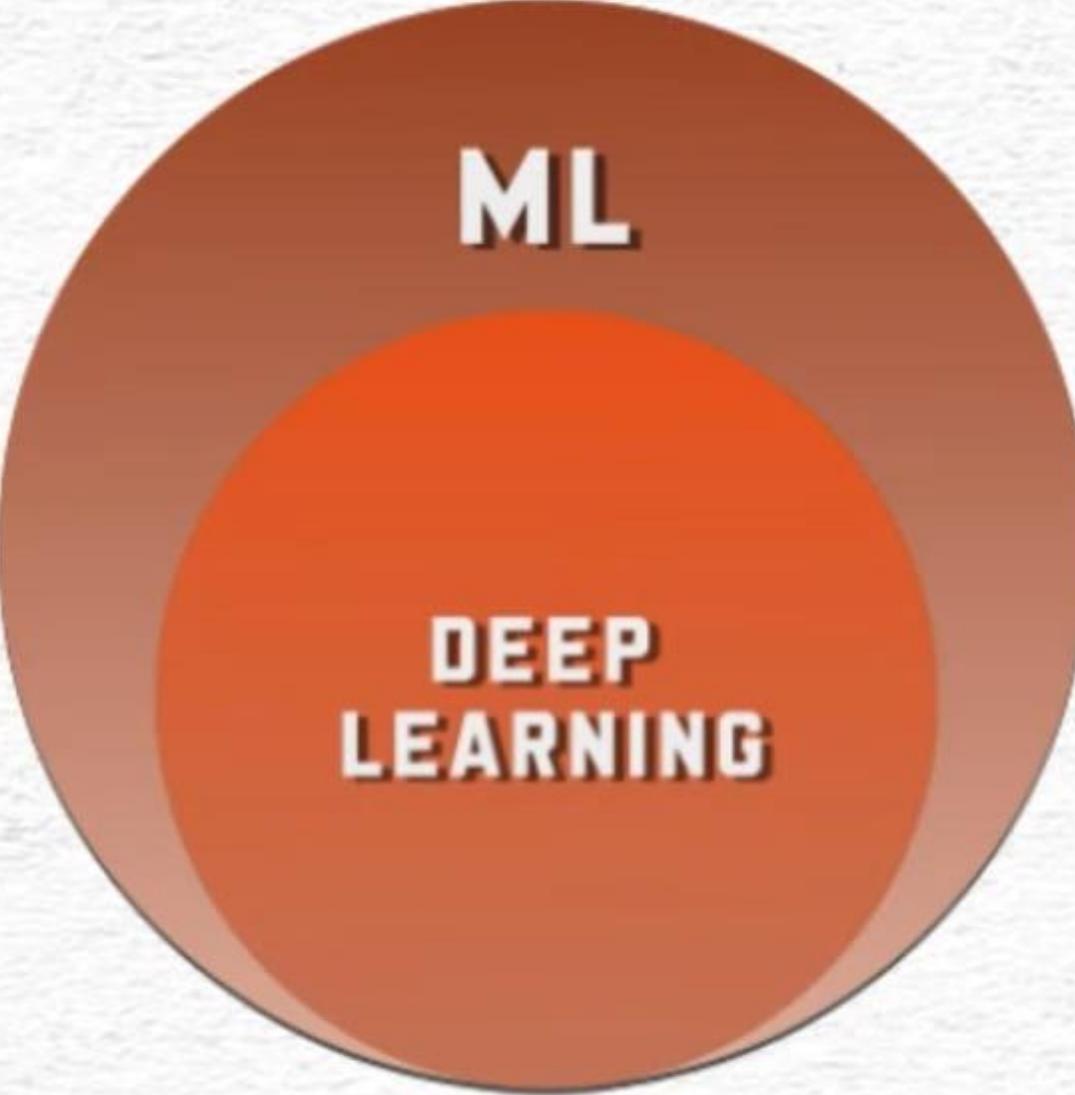
**UNSUPERVISED**

**UNLABELED DATA**

**HAS NO TAGS**

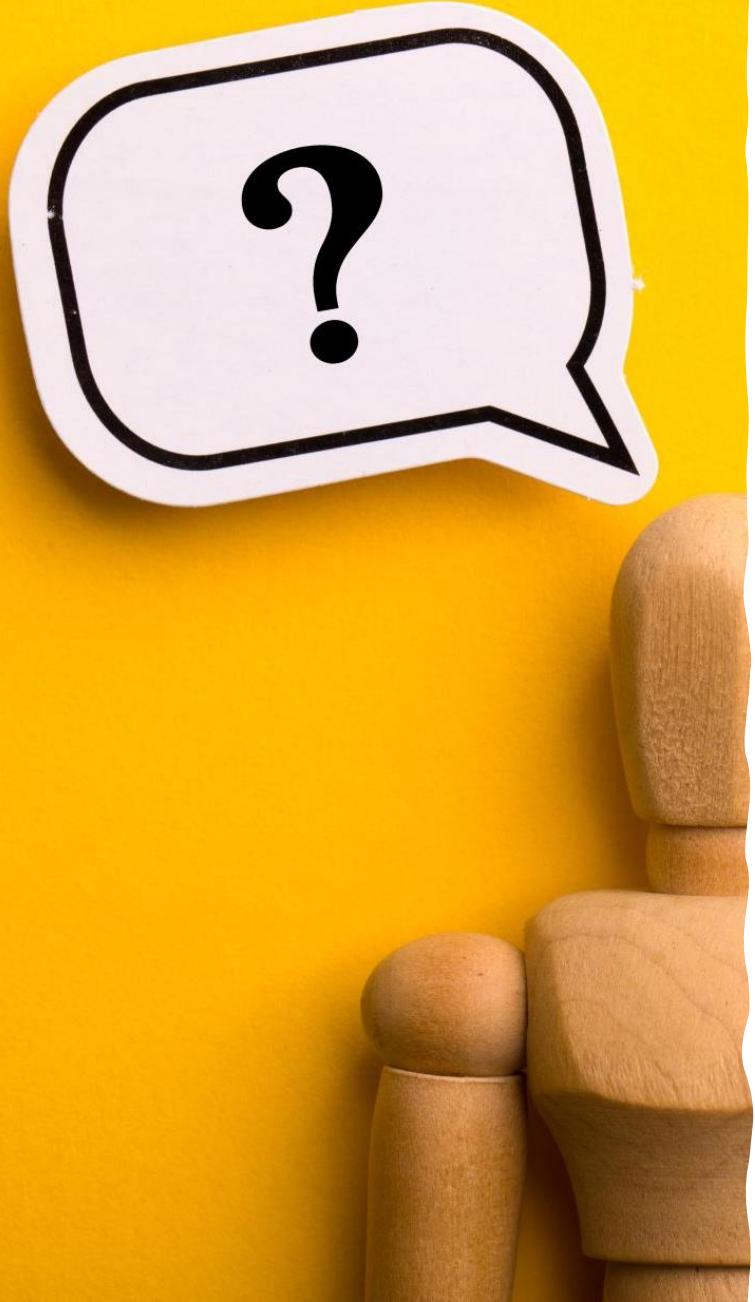


What is Deep  
learning?



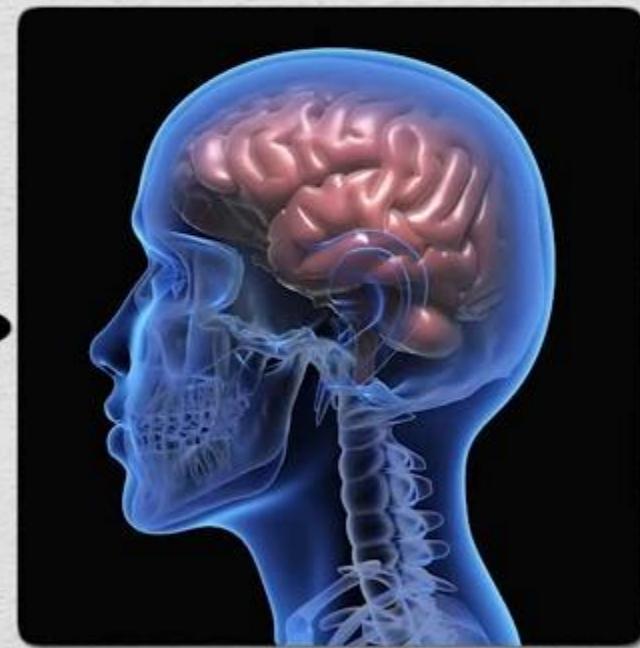
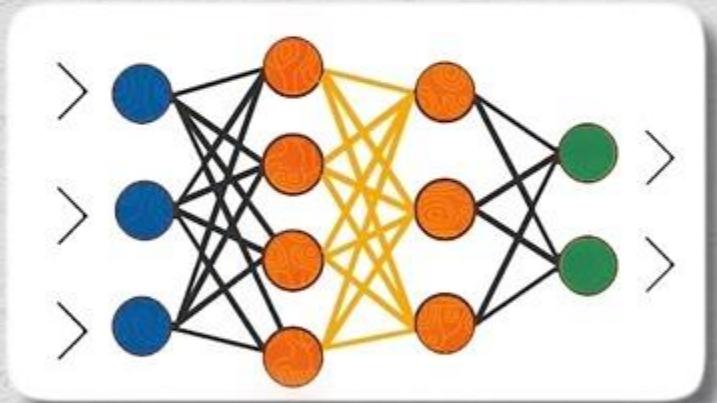
**ML**

**DEEP  
LEARNING**

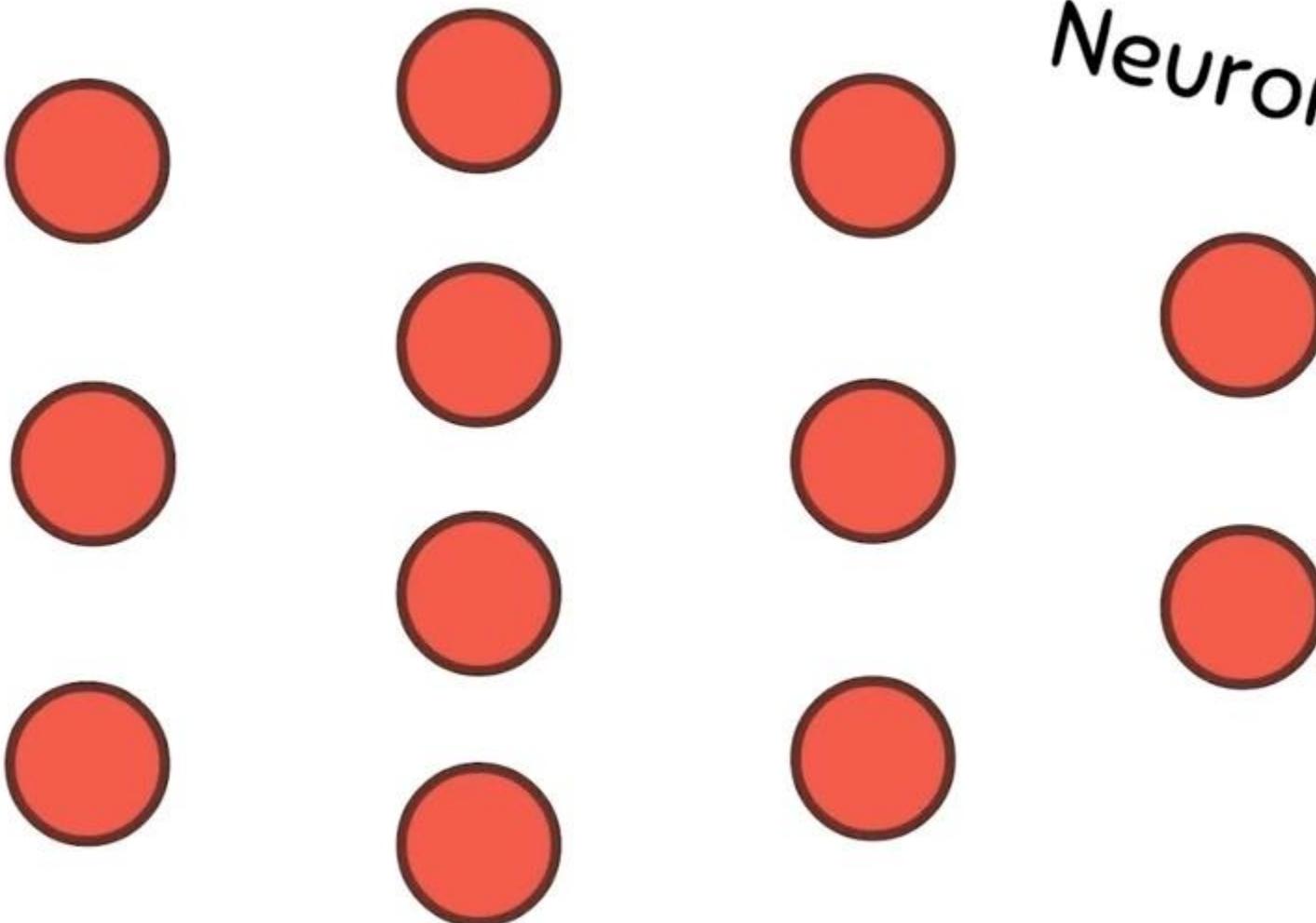


What are Artificial  
Neural Network?

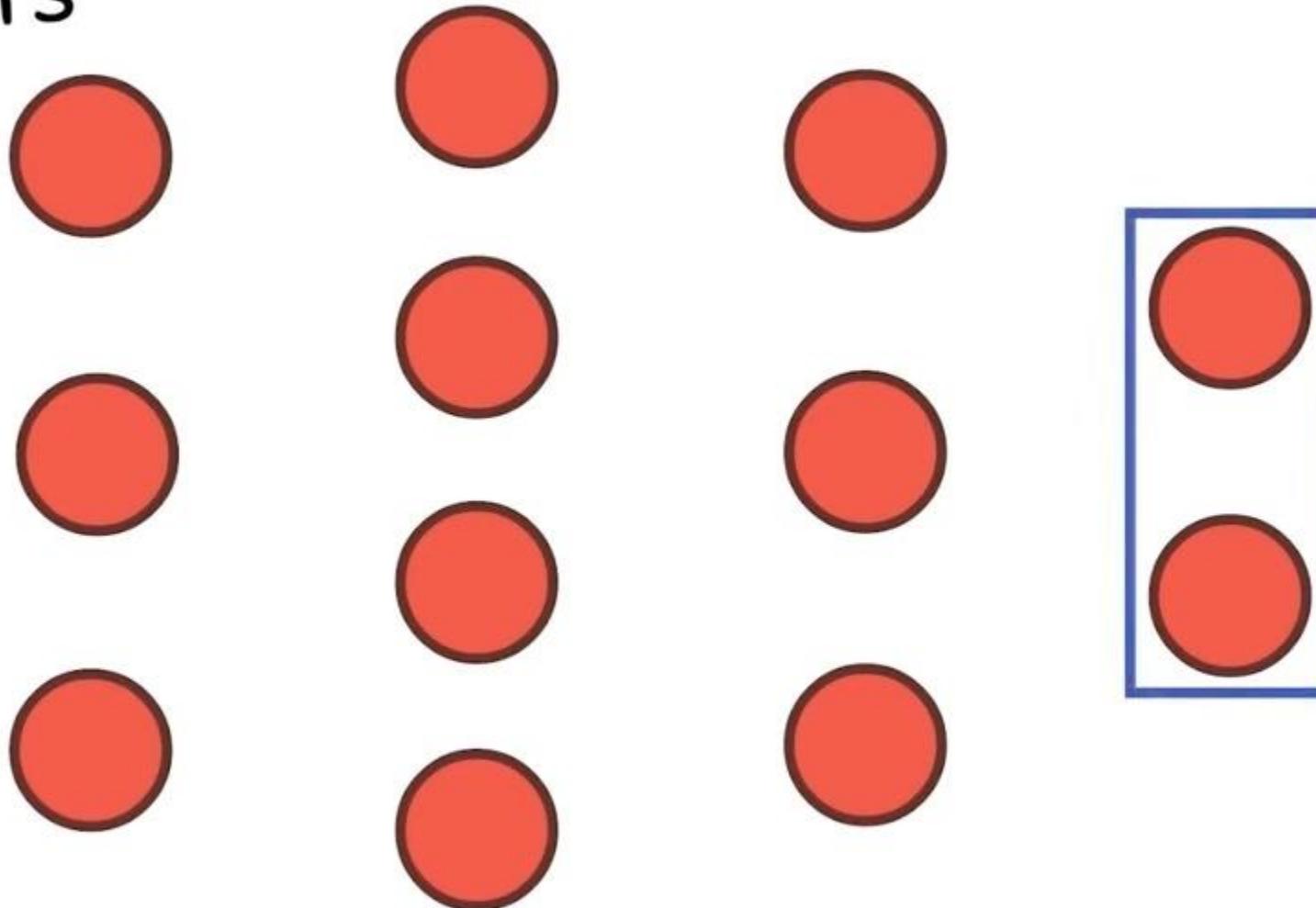
# **ARTIFICIAL NEURAL NETWORKS ARE INSPIRED BY THE HUMAN BRAIN**



*Neurons*

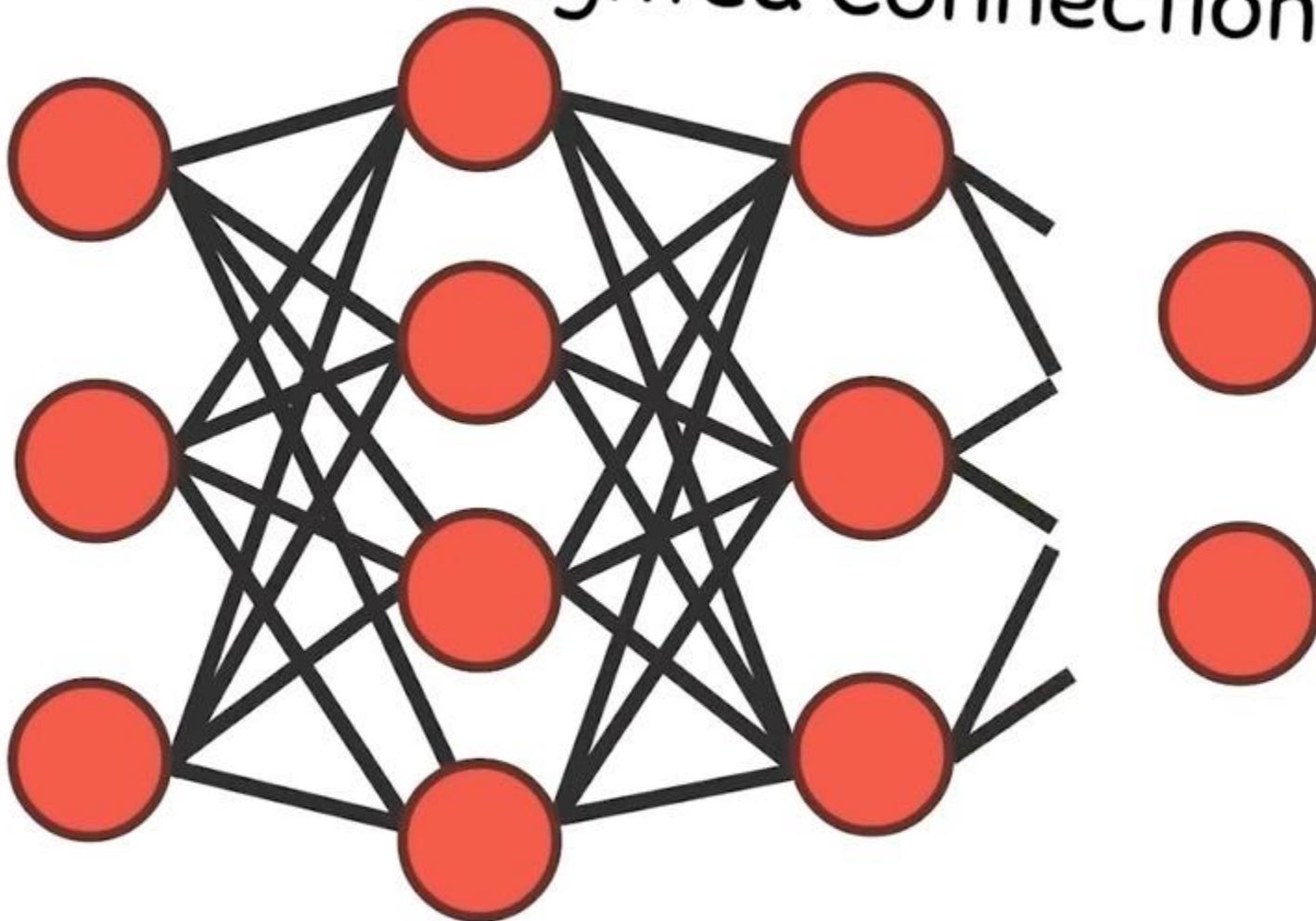


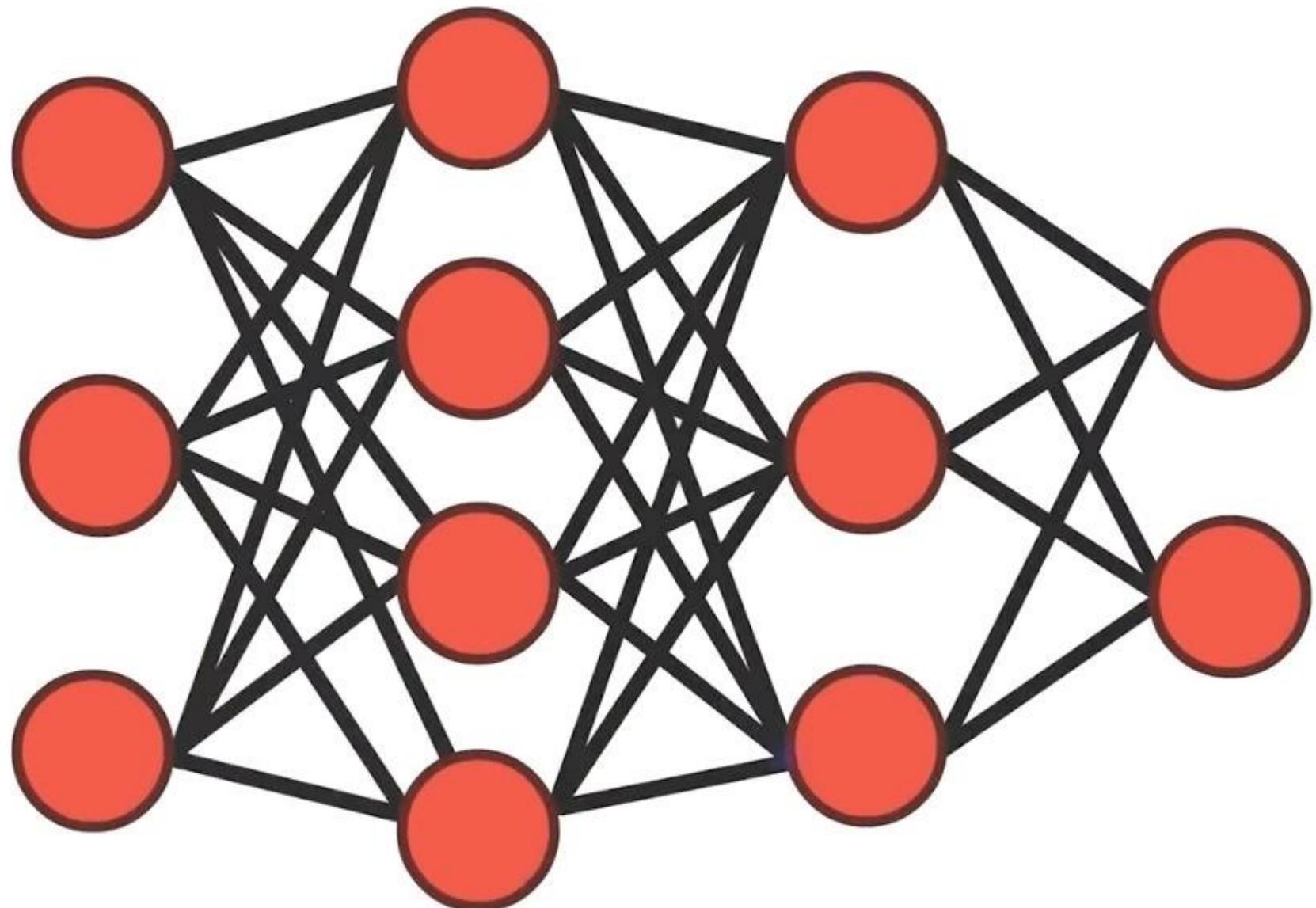
# Layers



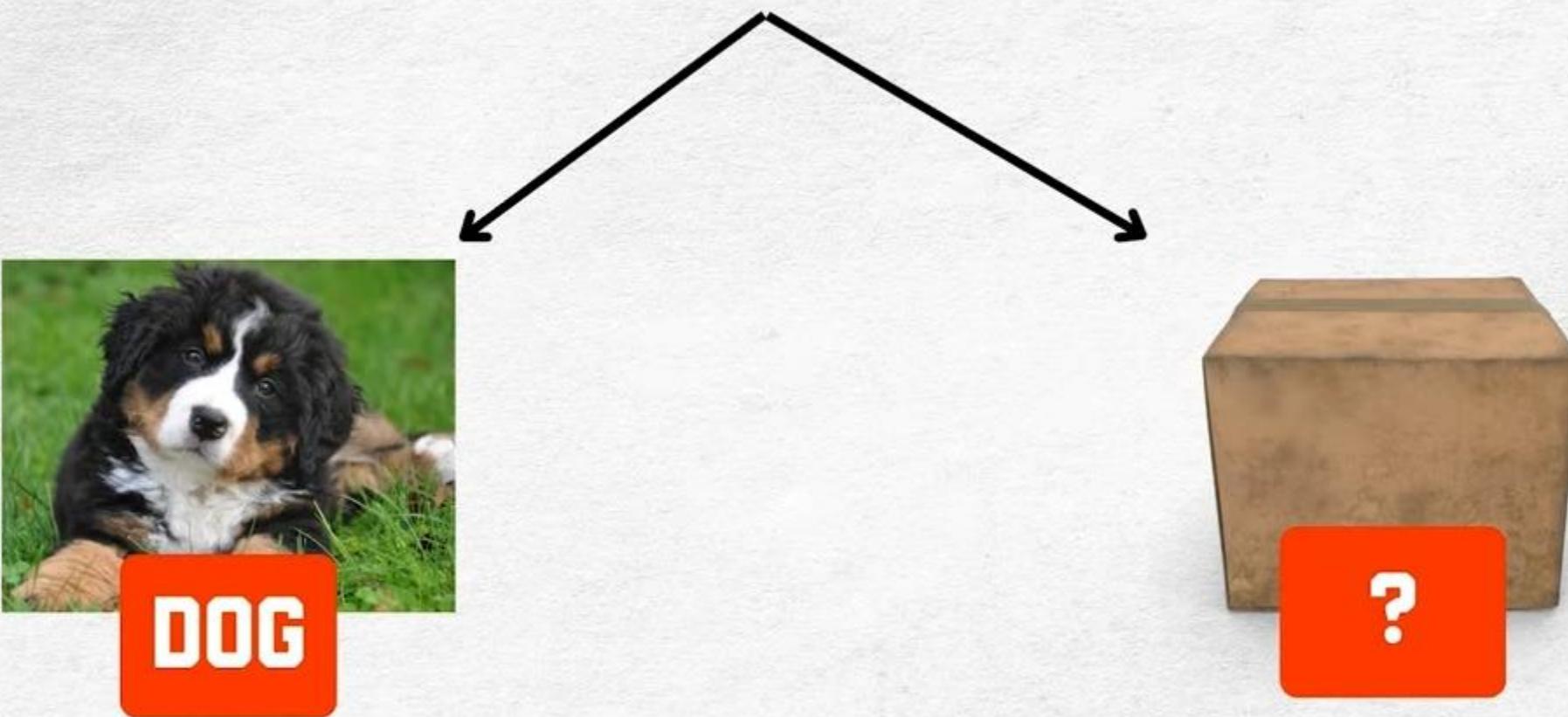


## Weighted Connections





# NEURAL NETWORKS



## SEMI-SUPERVISED LEARNING

# **SEMI-SUPERVISED LEARNING**

**SMALL PORTION OF DATA IS  
LABELED**

**LOTS OF DATA IS UNLABELED**

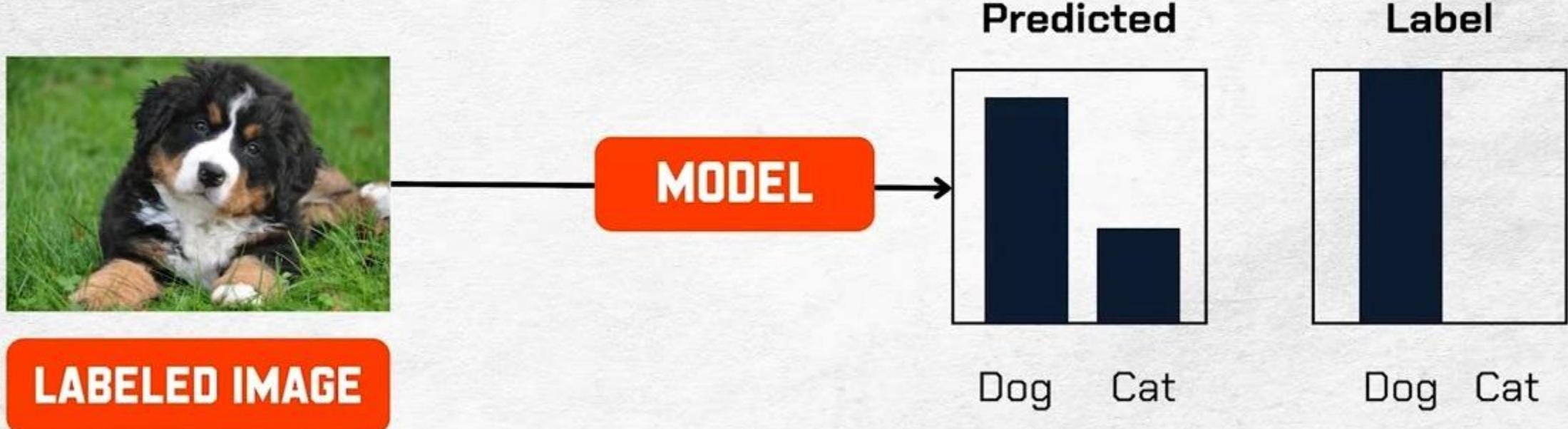
**MODEL**

**SMALL PORTION OF DATA IS  
LABELED**

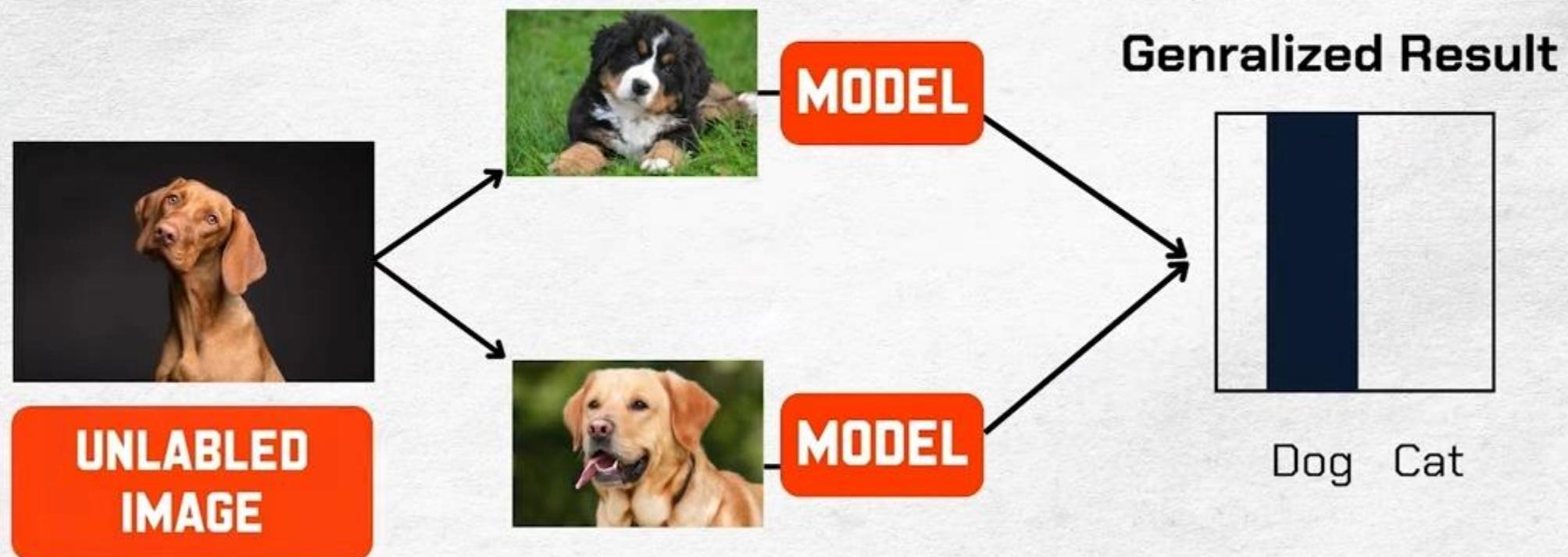
**LOTS OF DATA IS UNLABELED**

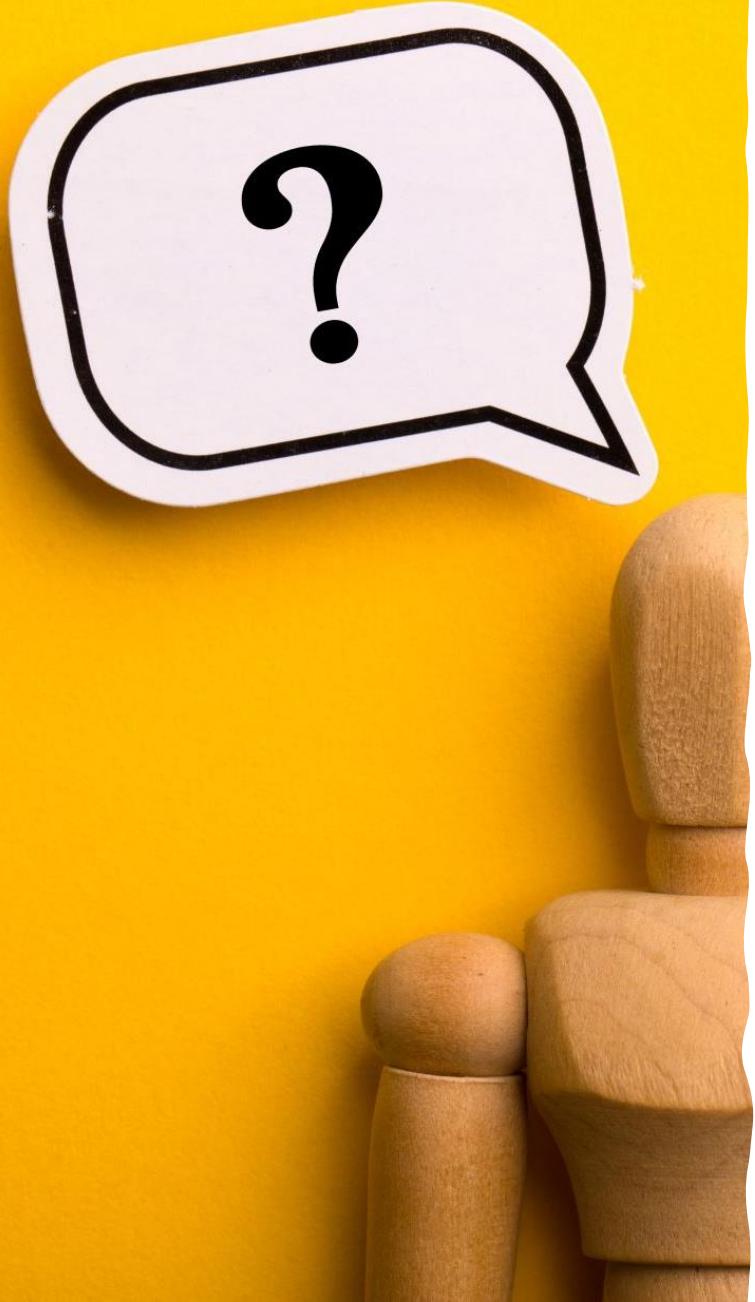
**MODEL**

# SEMI-SUPERVISED LEARNING



# SEMI-SUPERVISED LEARNING





Is this similar to  
Generative AI?

## **SUPERVISED LEARNING**

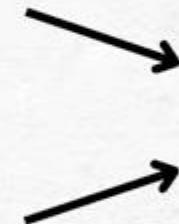
**ALL DATA IS  
LABELED**



**MODEL**

## **SEMI SUPERVISED LEARNING**

**SMALL PORTION OF  
DATA IS LABELED**



**MODEL**

**LOT OF DATA IS  
UNLABELED**

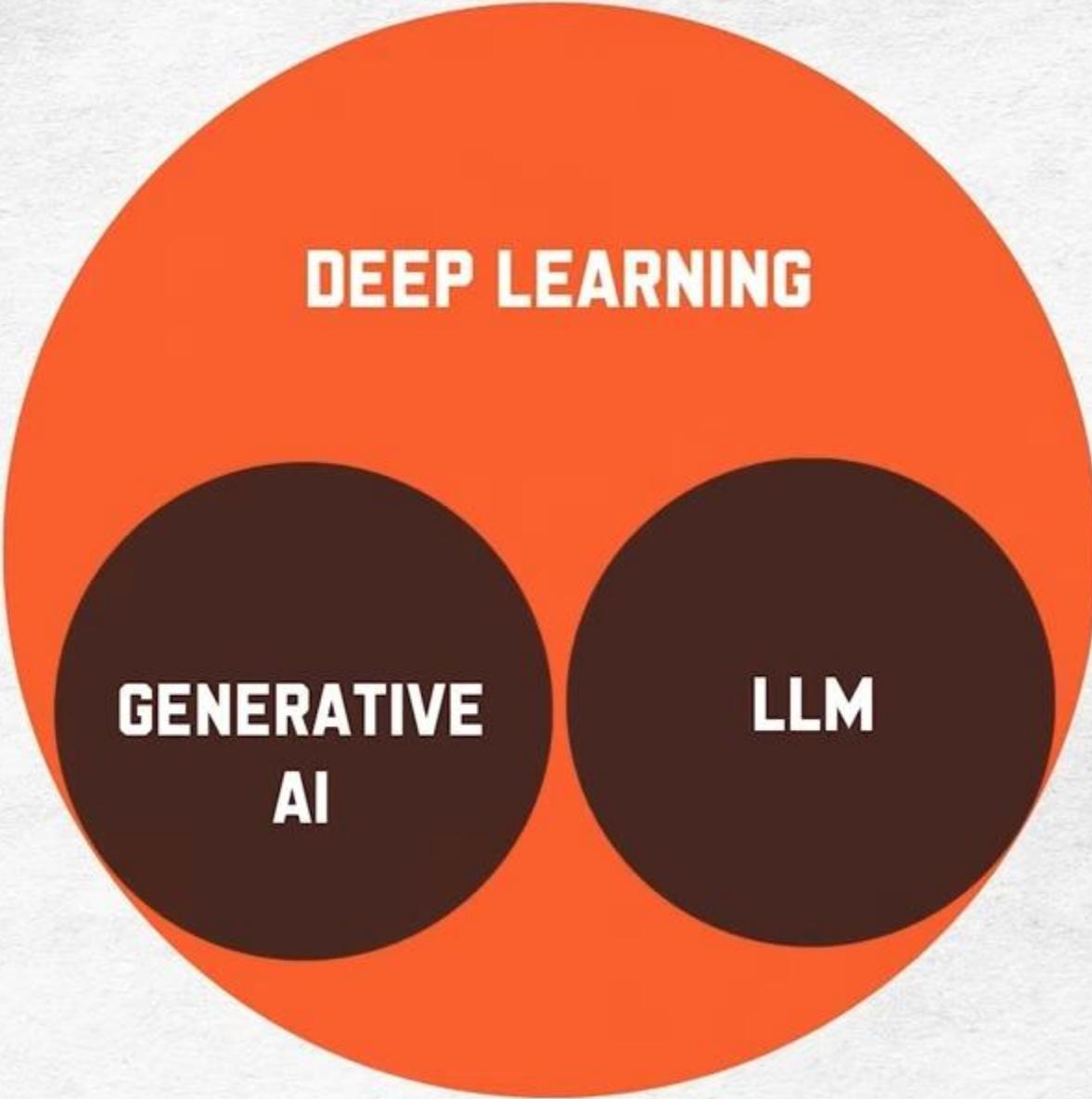
## **UNSUPERVISED LEARNING**

**ALL DATA IS  
UNLABELED**



**MODEL**

# Where do LLMs come into this?



**DEEP LEARNING**

**GENERATIVE  
AI**

**LLM**

**LARGE LANGUAGE MODEL  
GPT-4**

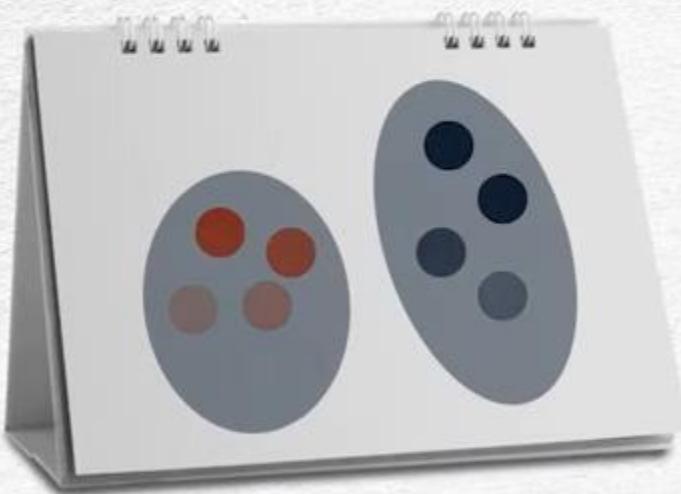
**1.7 TRILLION PARAMETERS**

LARGE LANGUAGE  
MODEL

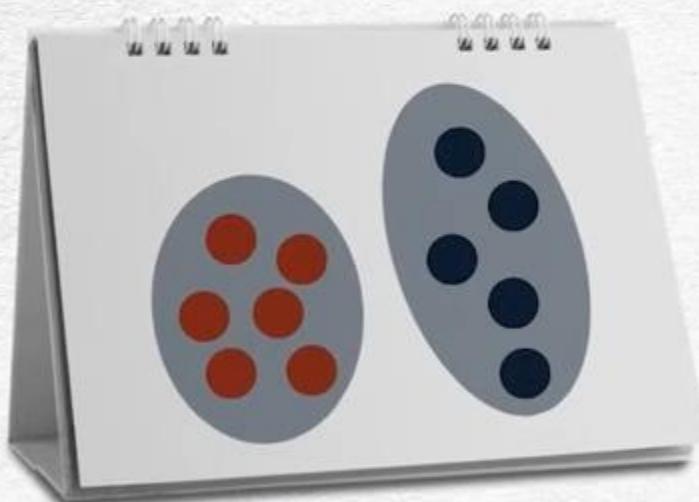


DEEP LEARNING

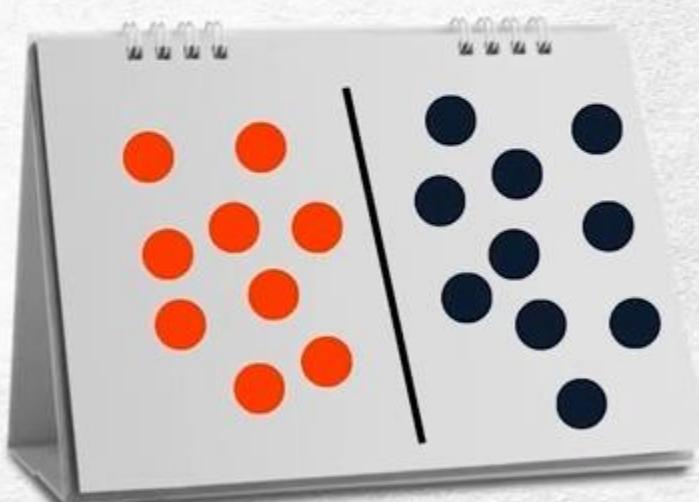
# MACHINE/DEEP LEARNING MODULE TYPES



# MACHINE/DEEP LEARNING MODULE TYPES



**GENERATIVE**



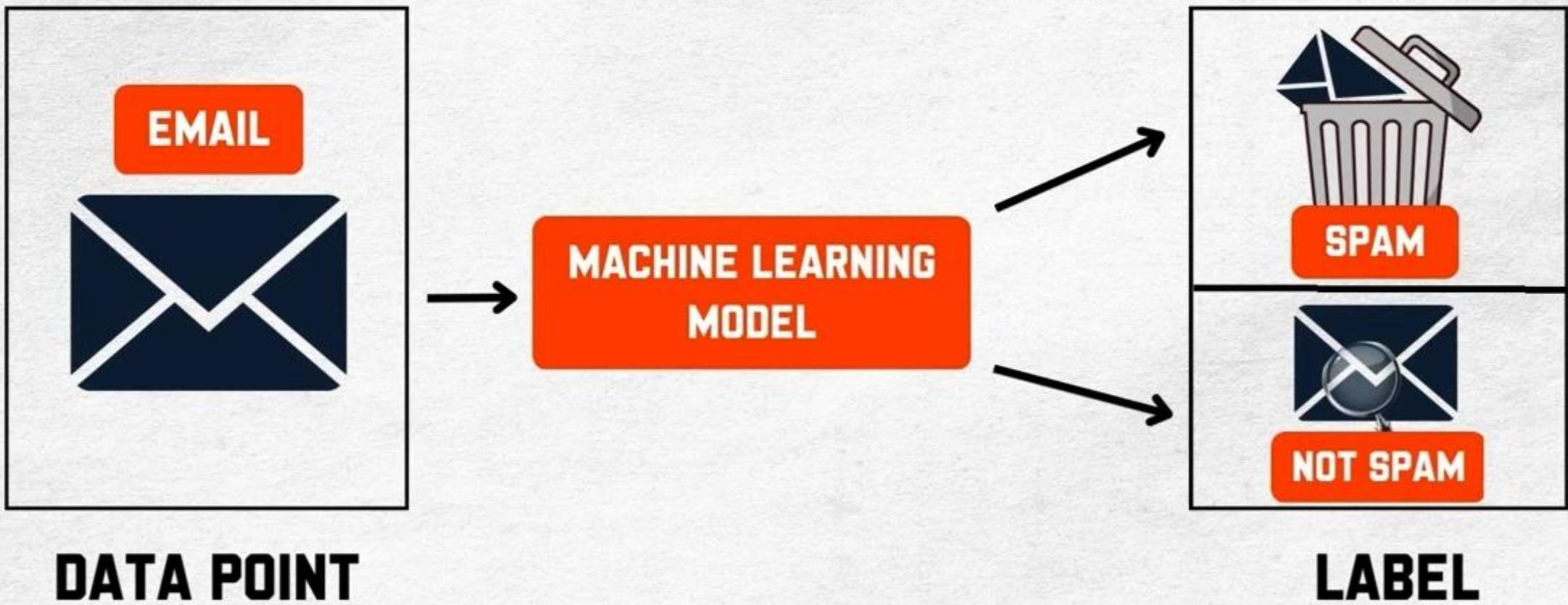
**DISCRIMINATIVE**



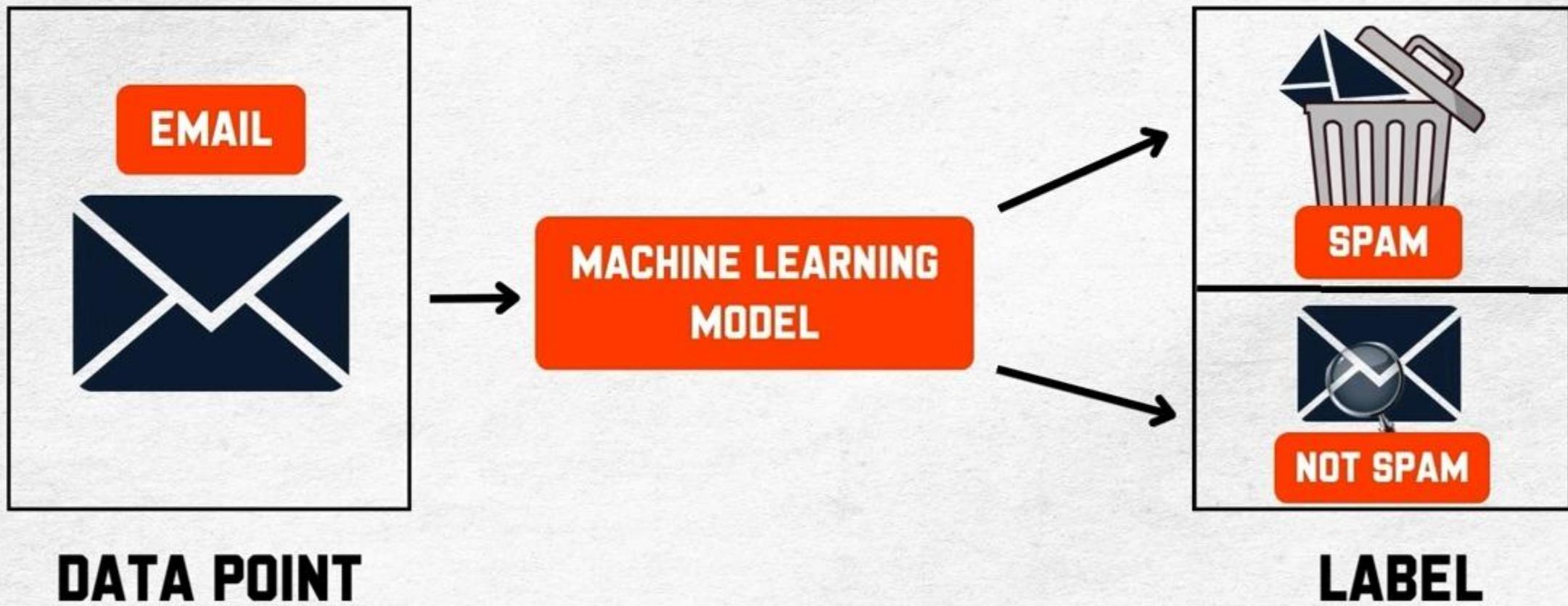
**DISCRIMINATIVE**

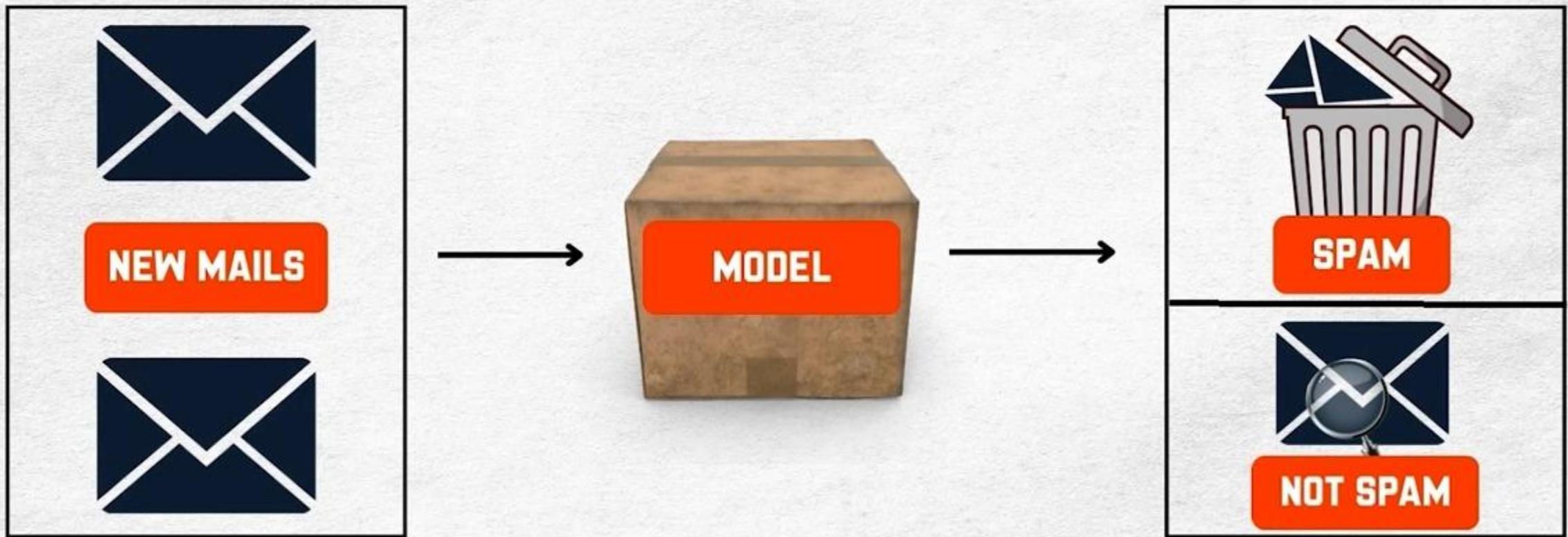
**A DISCRIMINATIVE MODEL IS USED  
TO CLASSIFY OR PREDICT LABELS  
FOR DATA POINTS.**

# DISCRIMINATIVE MODEL

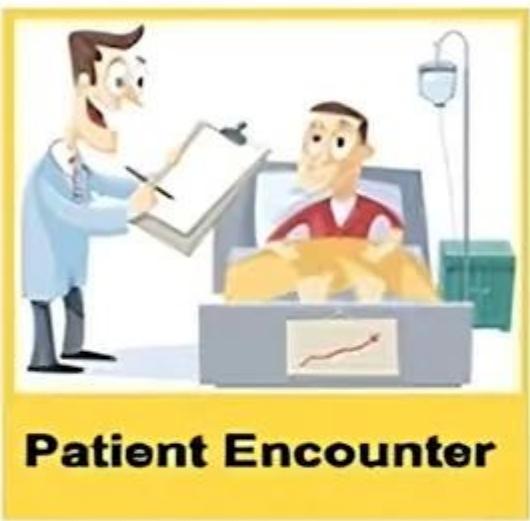


# DISCRIMINATIVE MODEL





**TRAINED DATA**



**Clinical Charts**



**New Patient Encounter**

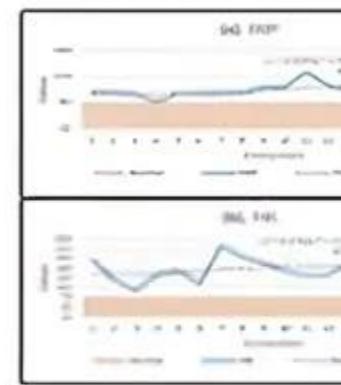


**Processed Data**



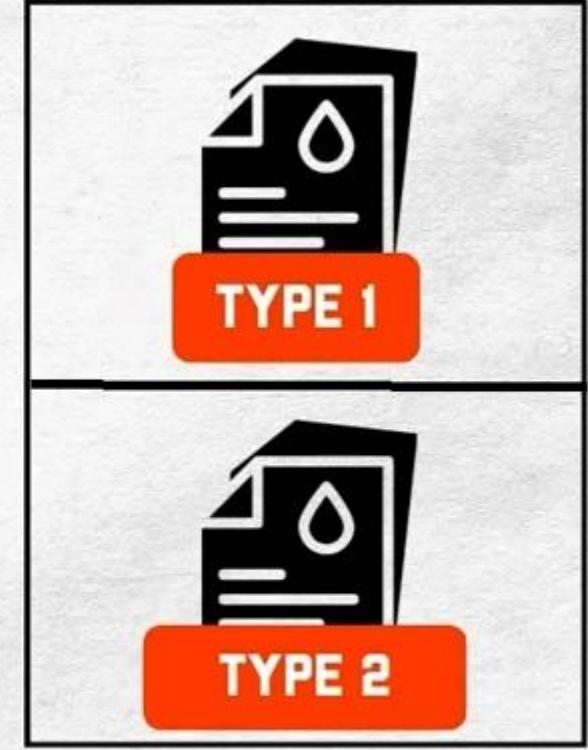
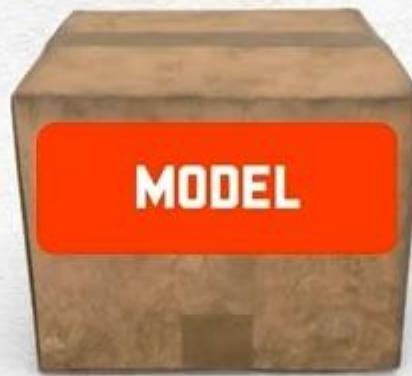
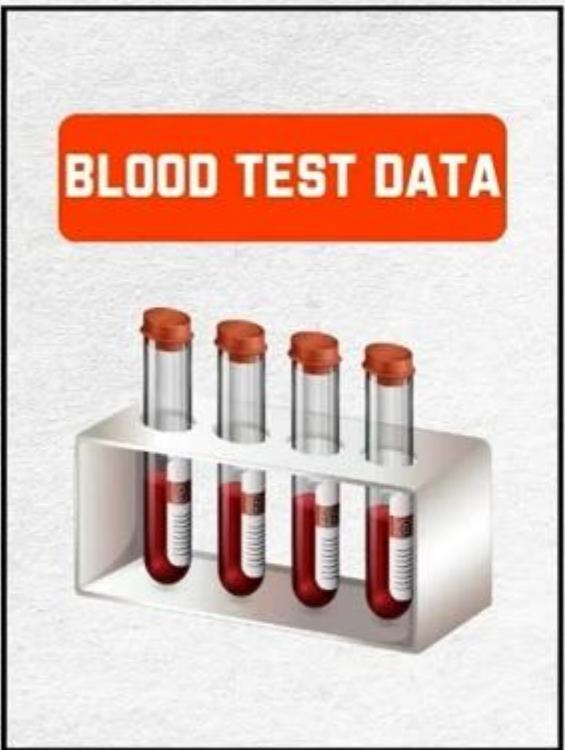
**Prediction Model**

**Trend Analysis**



**Type**

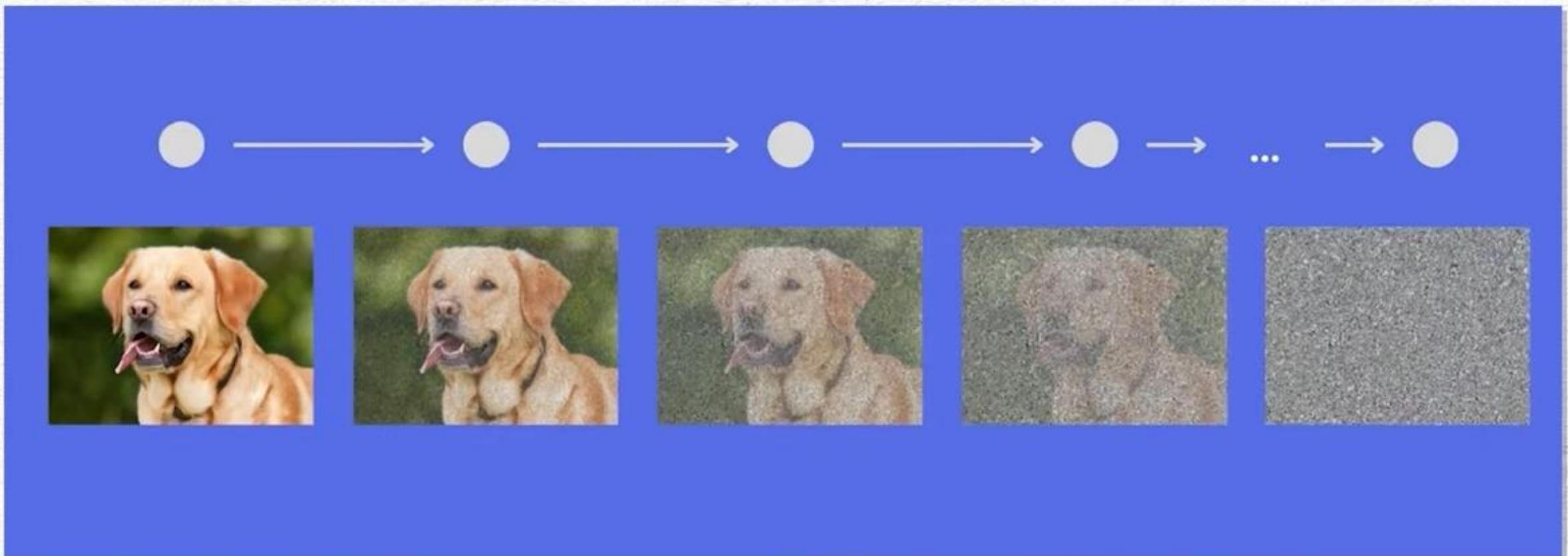
**Type**

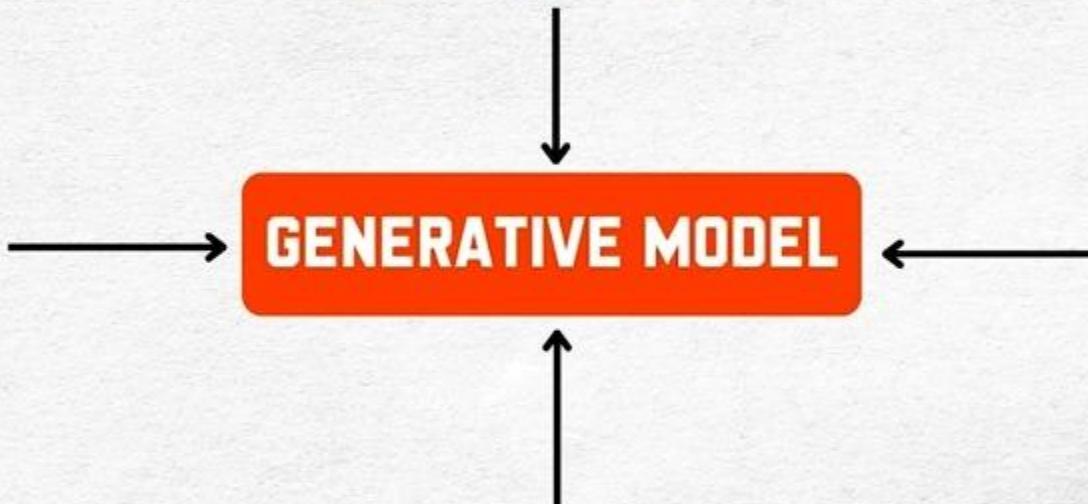
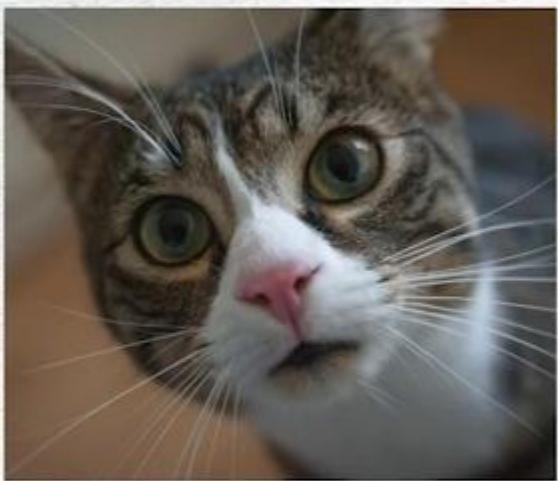


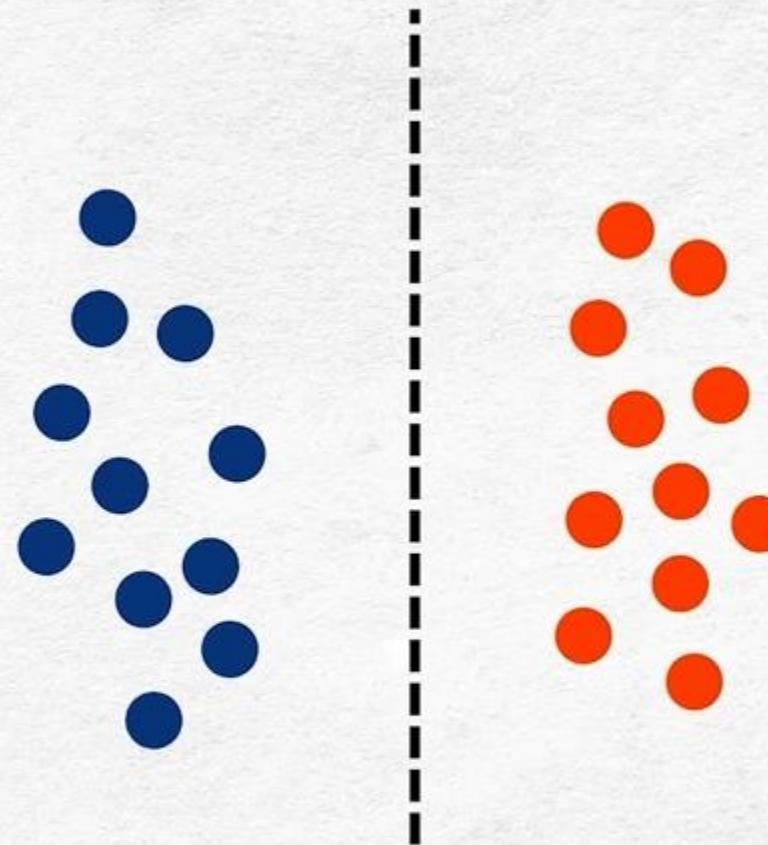
**NEW PATIENT'S DATA**

**DIABETES PREDICTION**

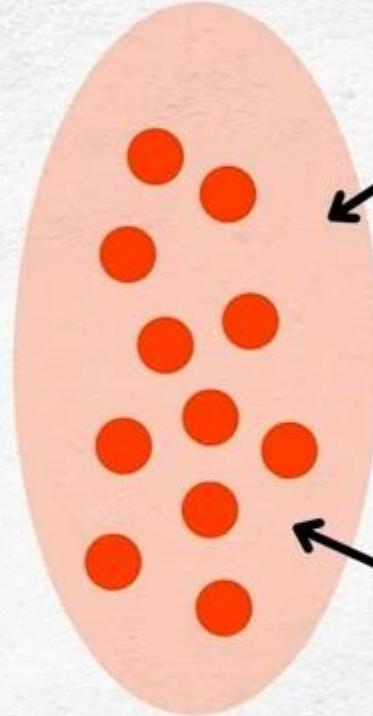
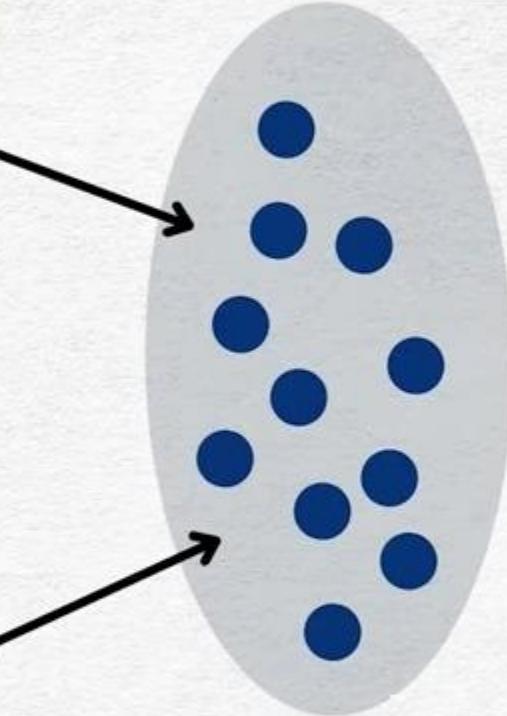
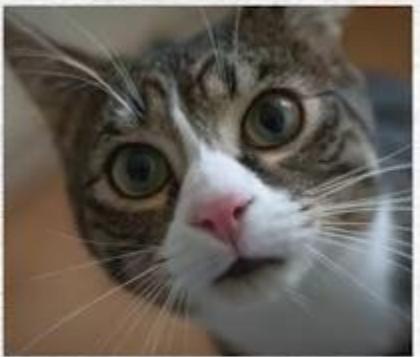
# GENERATIVE MODEL



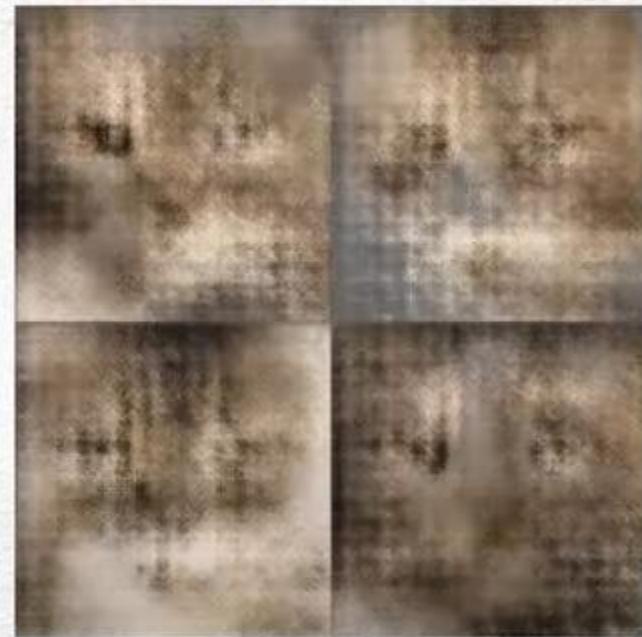




**DISCRIMINATIVE**



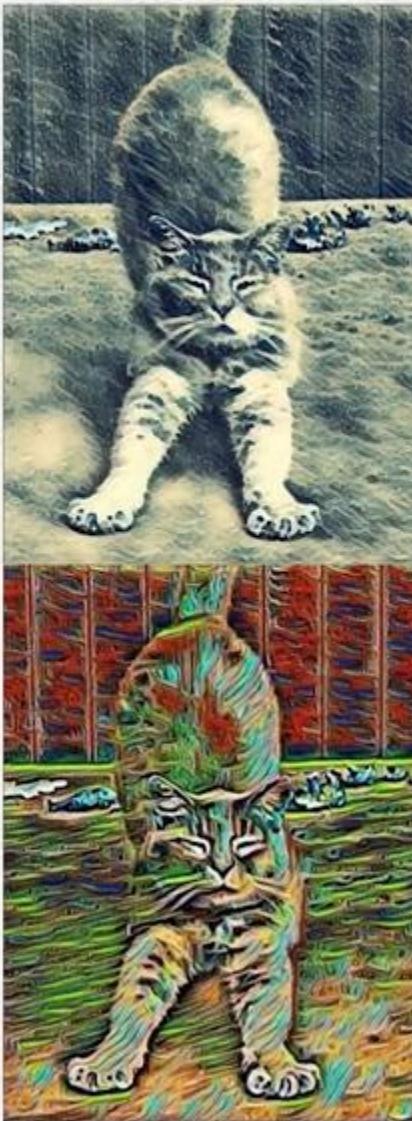
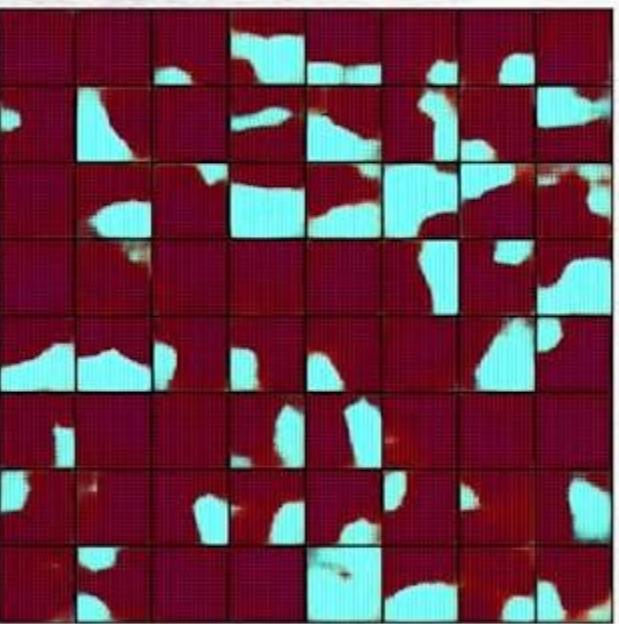
**GENERATIVE**

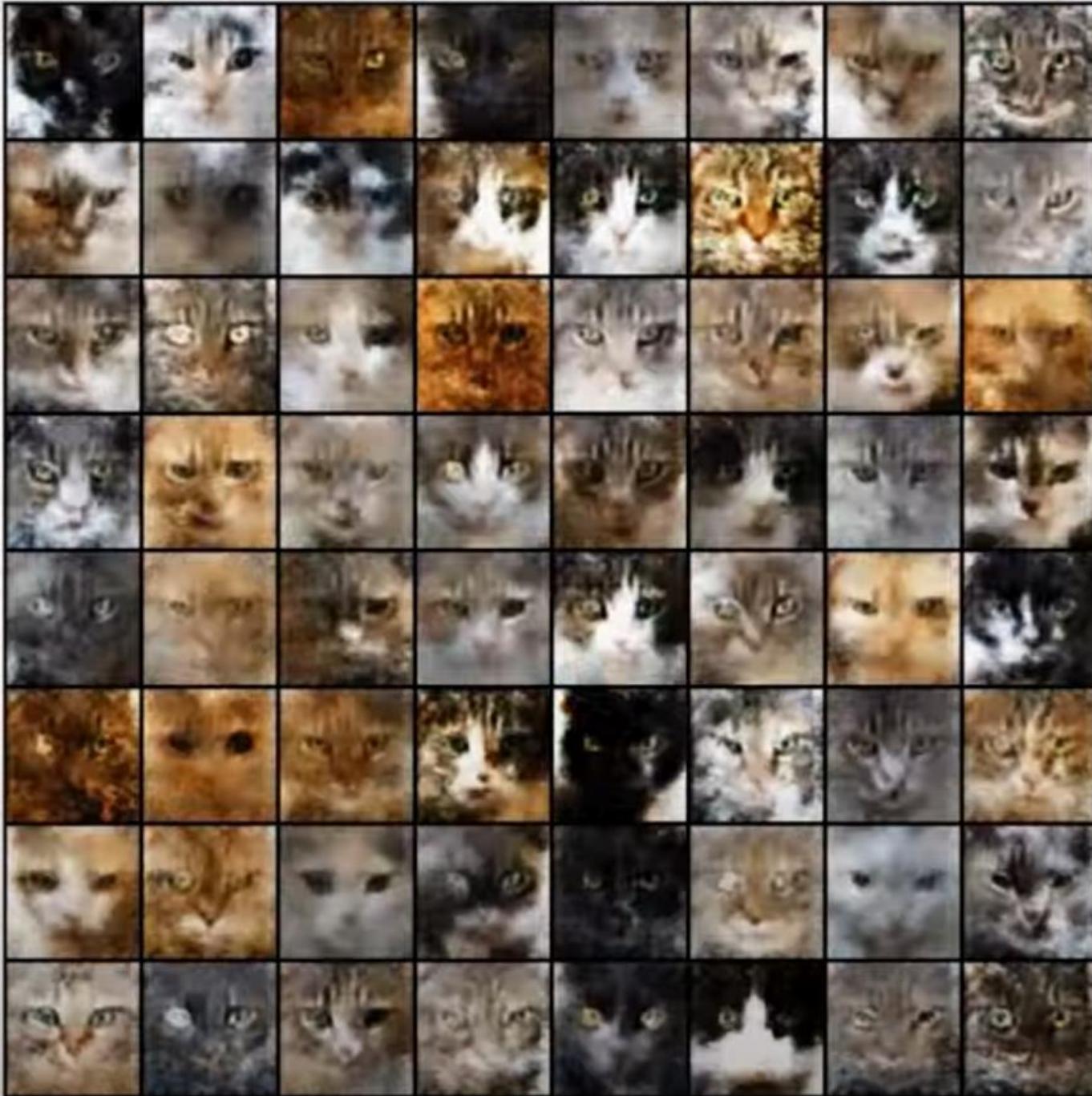


**TRAINING**



**TRAINING**





**LARGE LANGUAGE MODELS ARE A SPECIFIC TYPE OF  
GENERATIVE MODELS FOCUSING ON THE LANGUAGE**

**GPT IS ONE OF THE EXAMPLE OF GENERATIVE  
LARGE LANGUAGE MODEL**

Great, Now to learn this?

