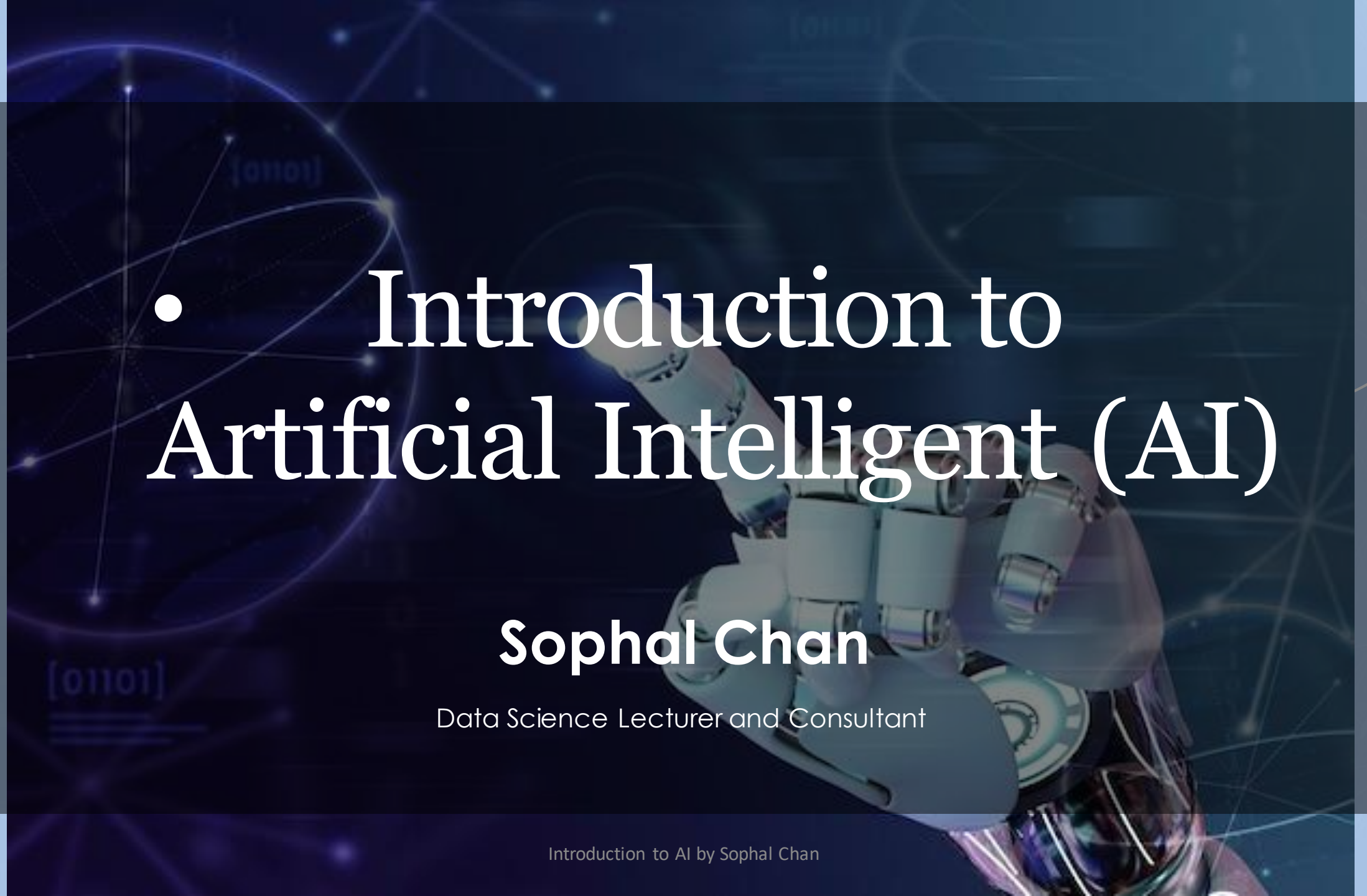
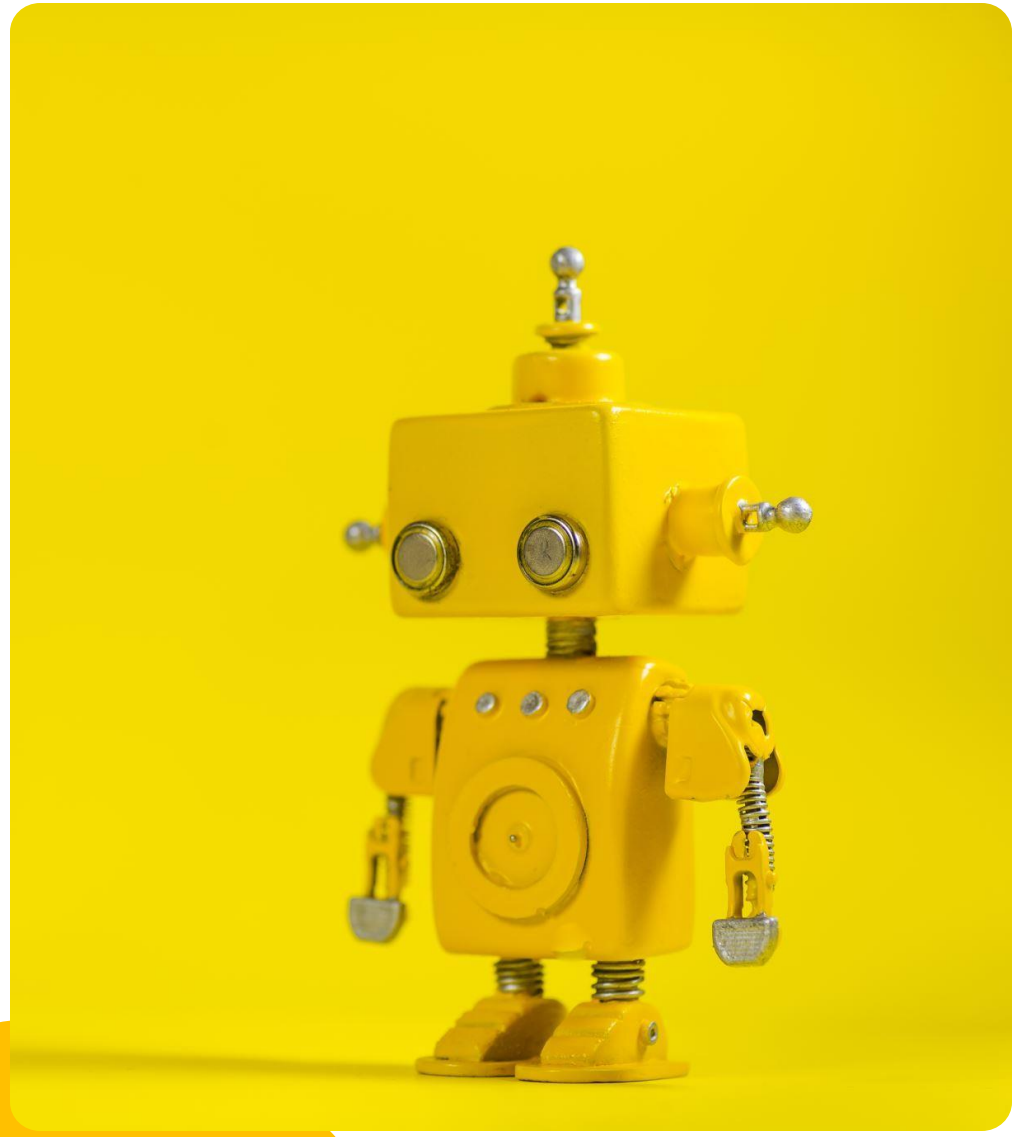


Introduction to Artificial Intelligent (AI)

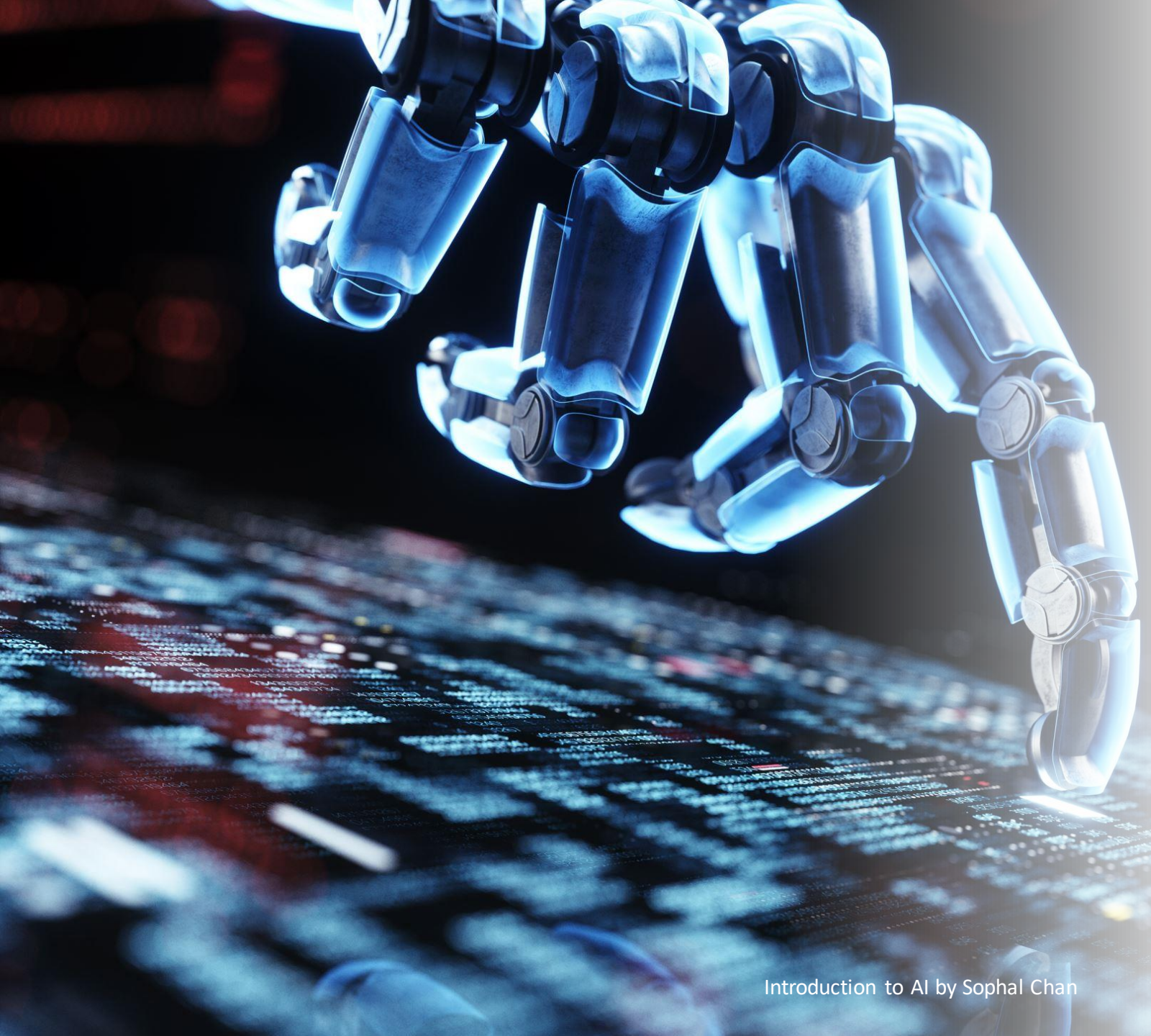
Sophal Chan

Data Science Lecturer and Consultant



Agenda

- Introduction
- AI History
- AI Types
- AI vs Machine learning vs Deep learning
- Generative AI
- Type of GenAI
- GenAI future
- AI ethic



Introduction

- **What is AI?**

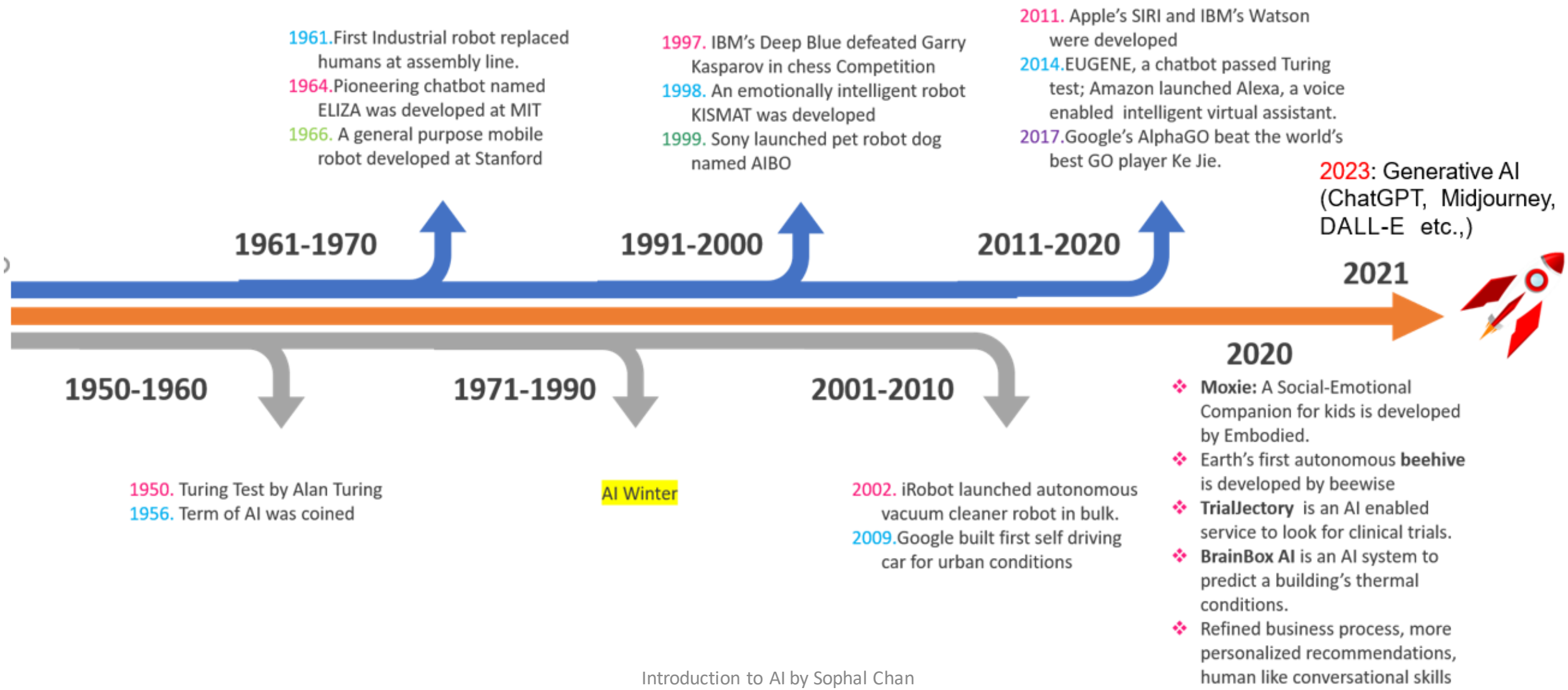
  Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems.

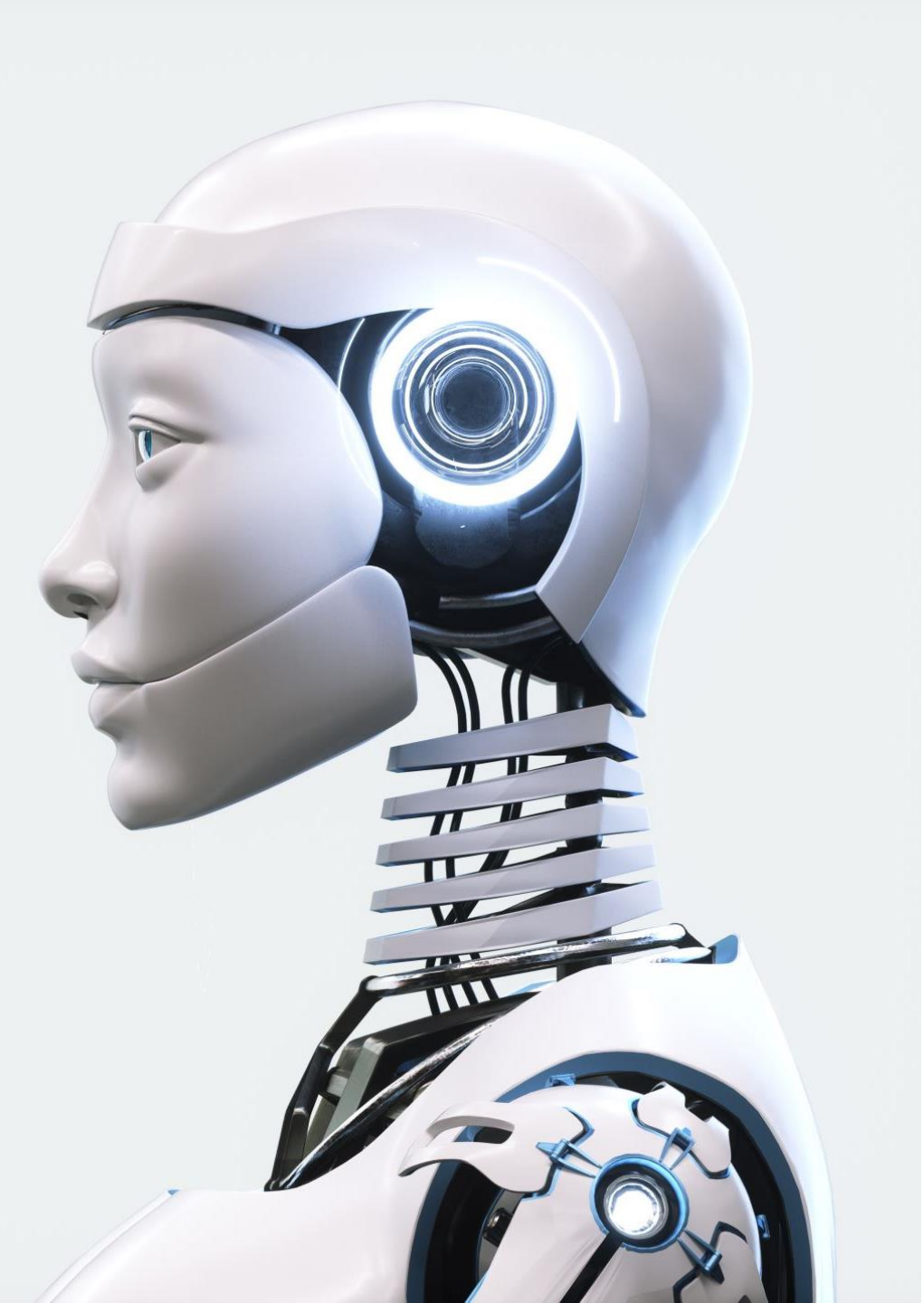
- **How AI work?**

  AI requires a foundation of specialized hardware and software for writing and training machine learning algorithms. No one programming language is synonymous with AI, but a few, including **Python**, **R** and **Java**, are popular.

AI History

Brief history of AI

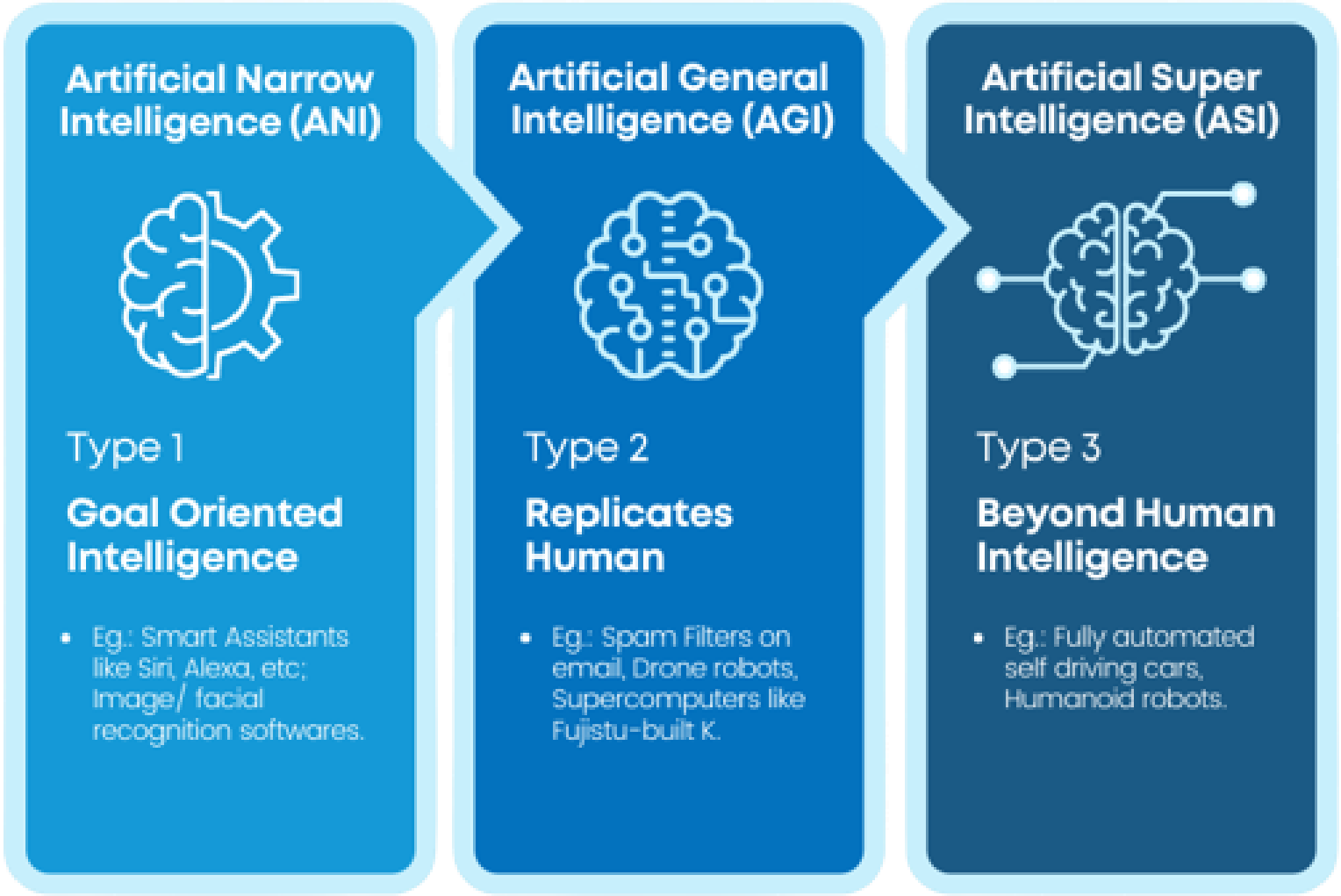


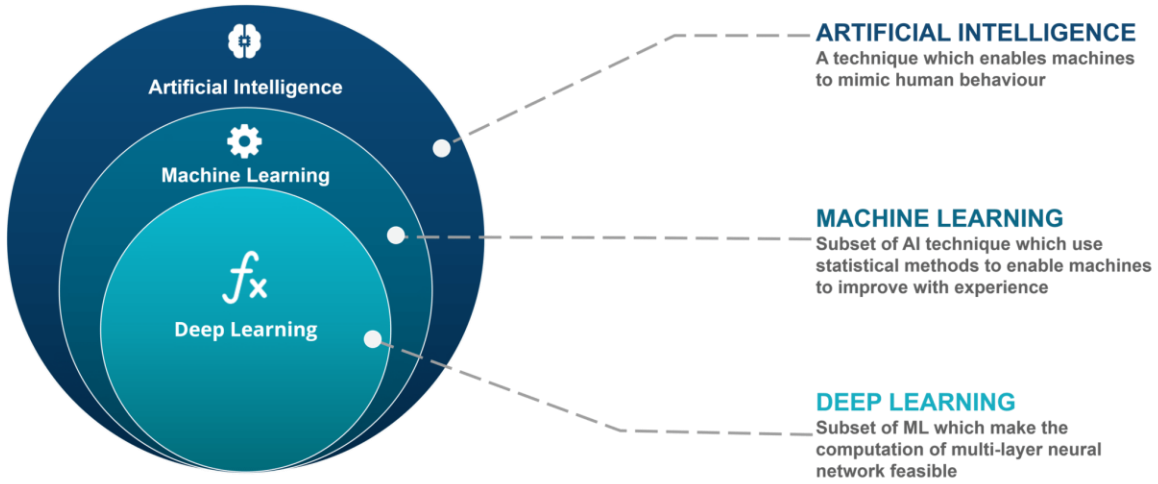


AI Types

- Artificial Narrow Intelligence (ANI)
- Artificial General Intelligence (AGI)
- Artificial Super Intelligence (ASI)

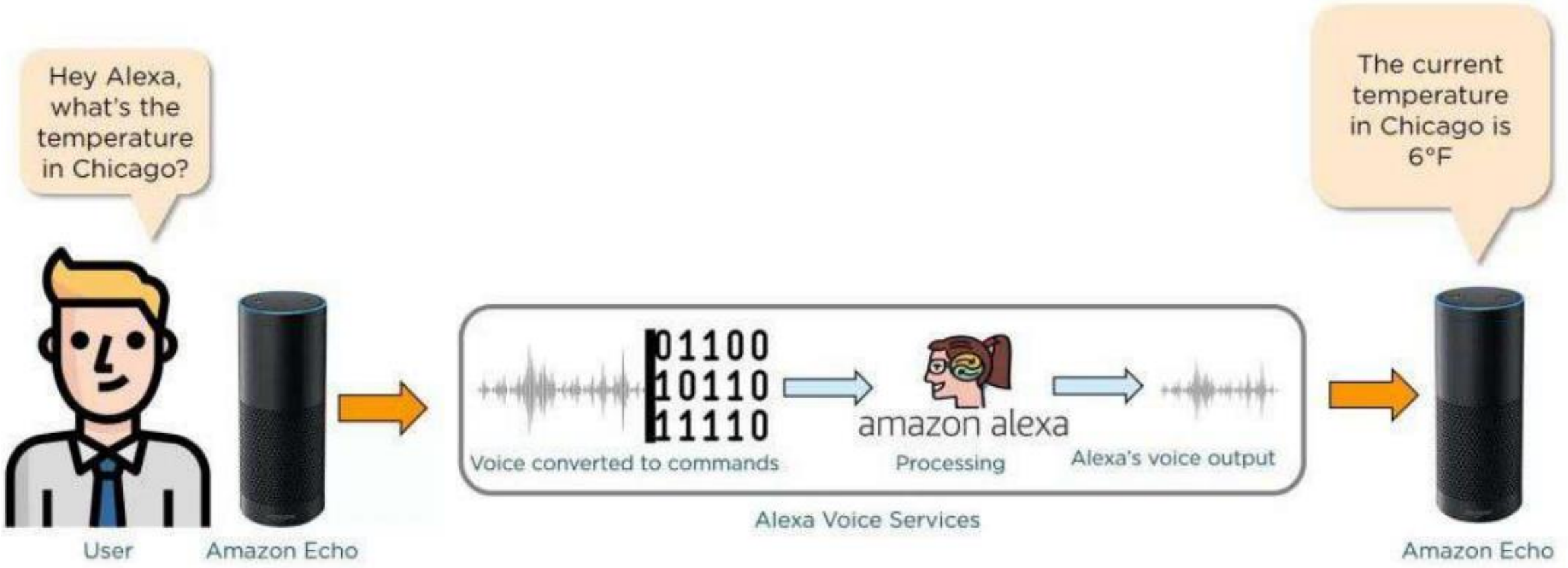
AI Types


Artificial Narrow Intelligence (ANI)
Type 1
Goal Oriented Intelligence
• Eg.: Smart Assistants like Siri, Alexa, etc; Image/ facial recognition softwares.
Artificial General Intelligence (AGI)
Type 2
Replicates Human
• Eg.: Spam Filters on email, Drone robots, Supercomputers like Fujistu-built K.
Artificial Super Intelligence (ASI)
Type 3
Beyond Human Intelligence
• Eg.: Fully automated self driving cars, Humanoid robots.



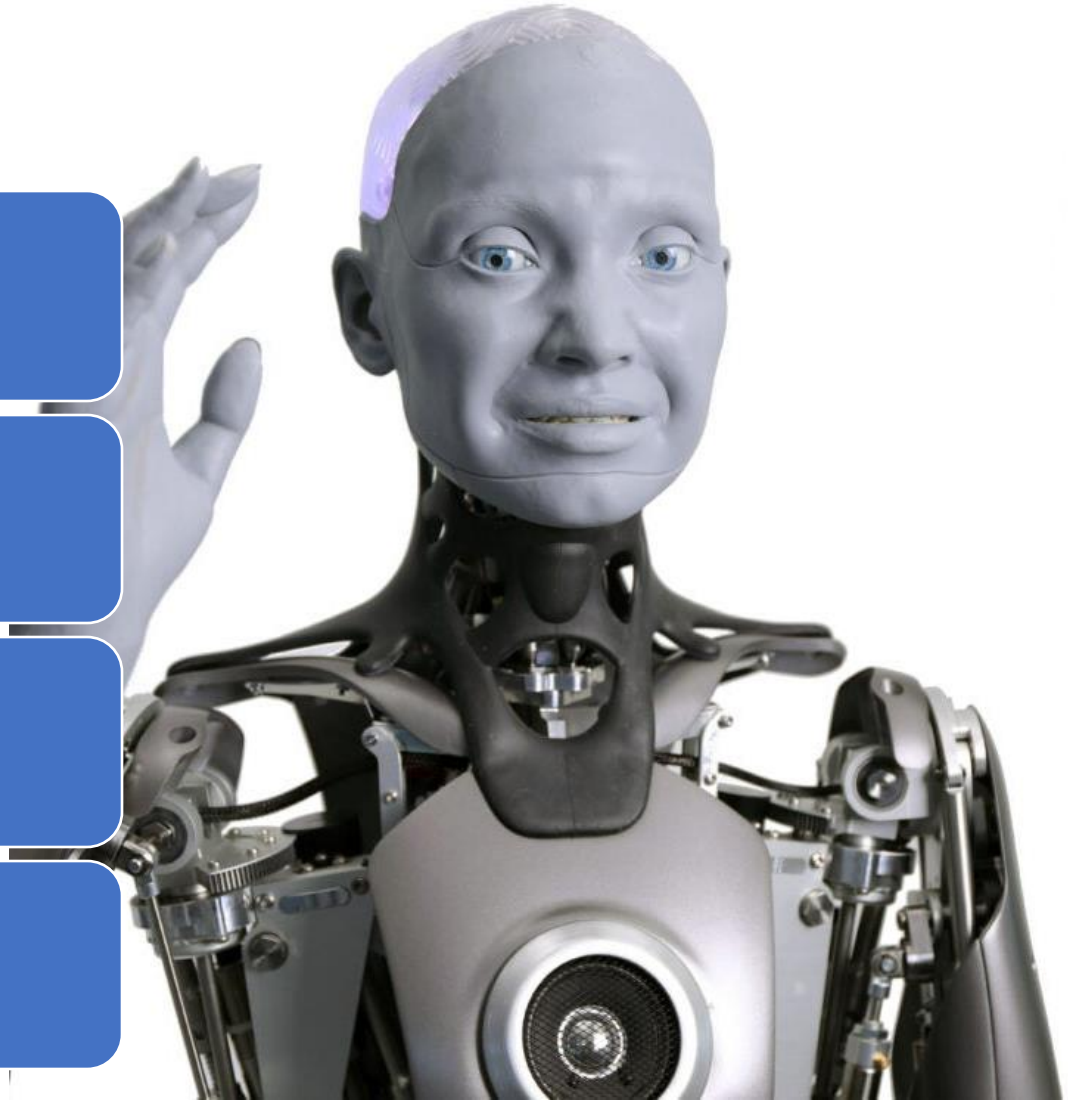
AI vs Machine learning vs Deep learning

AI Example


Hey Alexa, what's the temperature in Chicago?
User
Amazon Echo
01100
10110
11110
Voice converted to commands
amazon alexa
Processing
Alexa's voice output
Alexa Voice Services
The current temperature in Chicago is 6°F
Amazon Echo

AI Example

- Interrach with human using their natural language
- Provide more accurate result
- Learn from mistakes and adapts to new environtment
- Learn from the data and automatives repetive learning



User searches for something on Google

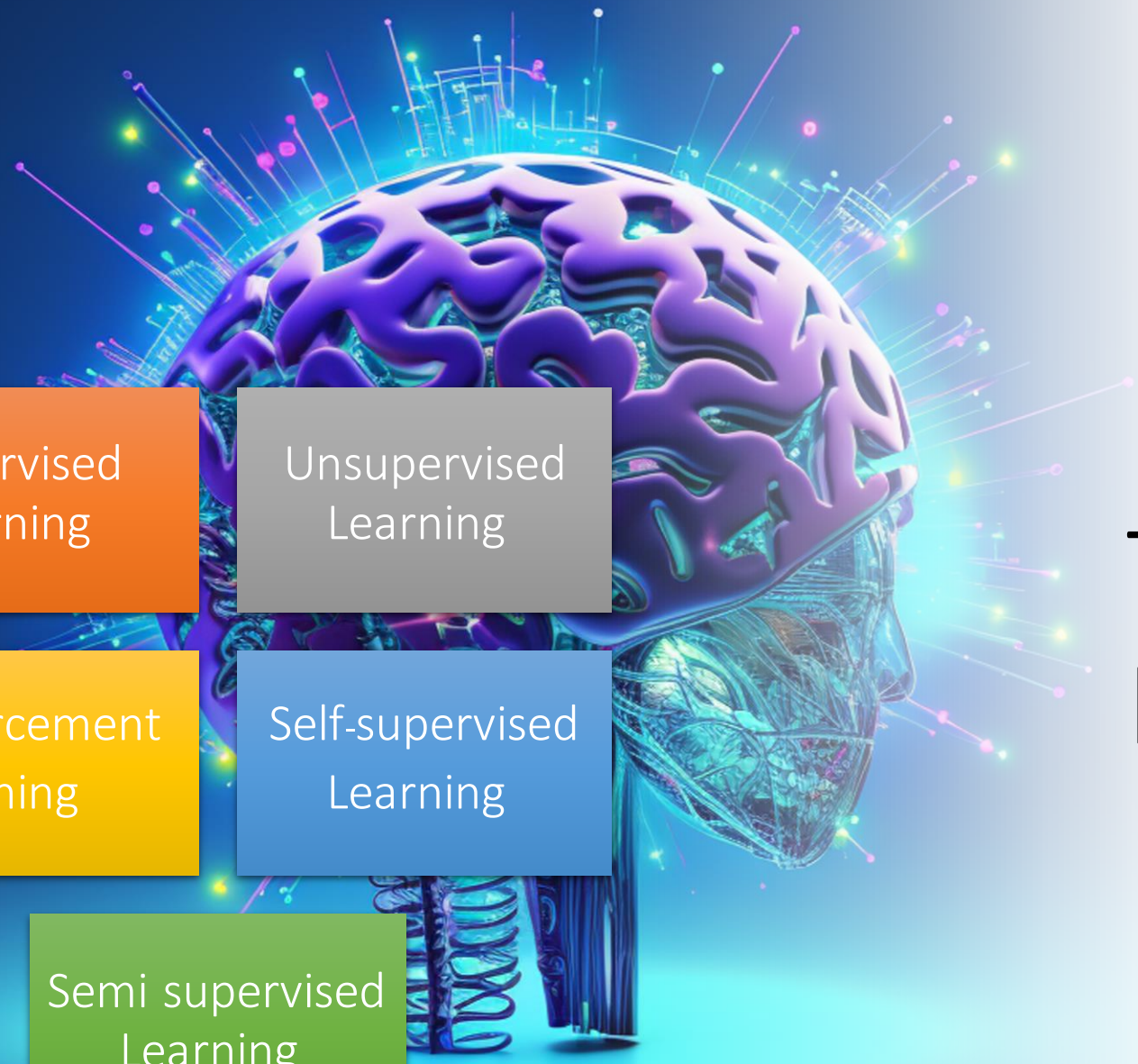
User selects one of the first few links and spends time there

User goes to the second/ third page

Google understands the user got what was required

Google understands the user's requirement wasn't satisfied

Machine Learning Example (ML)



Supervised Learning

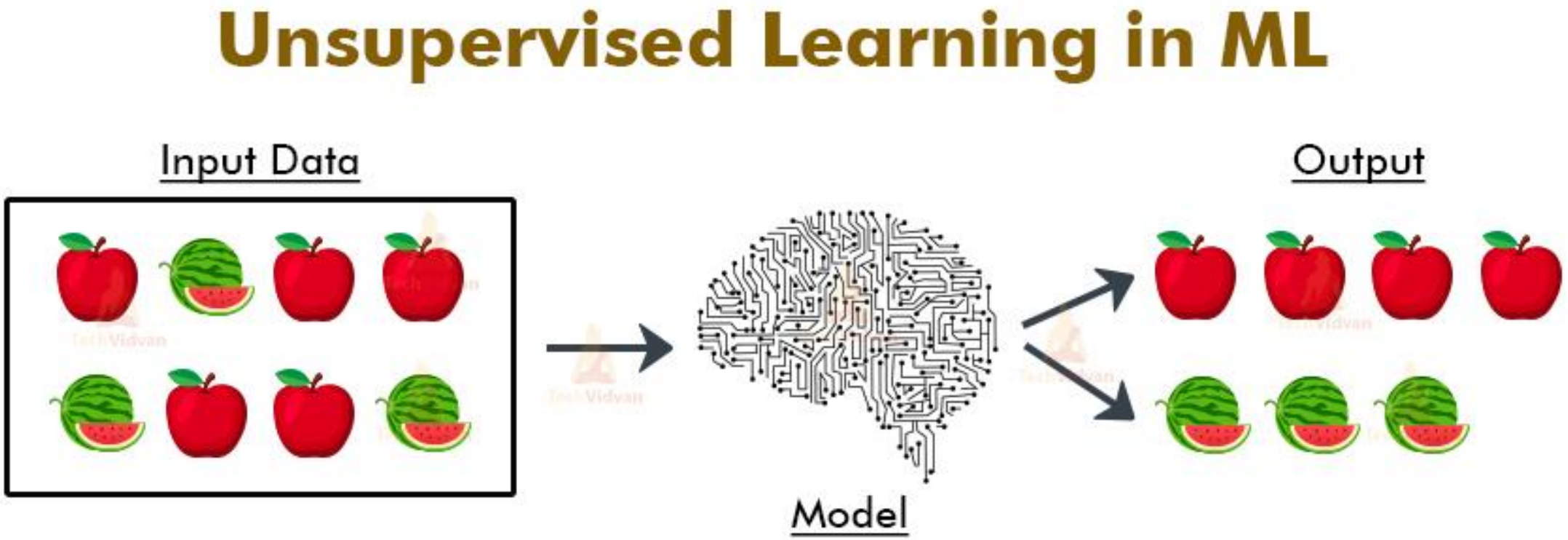
Unsupervised Learning

Reinforcement Learning

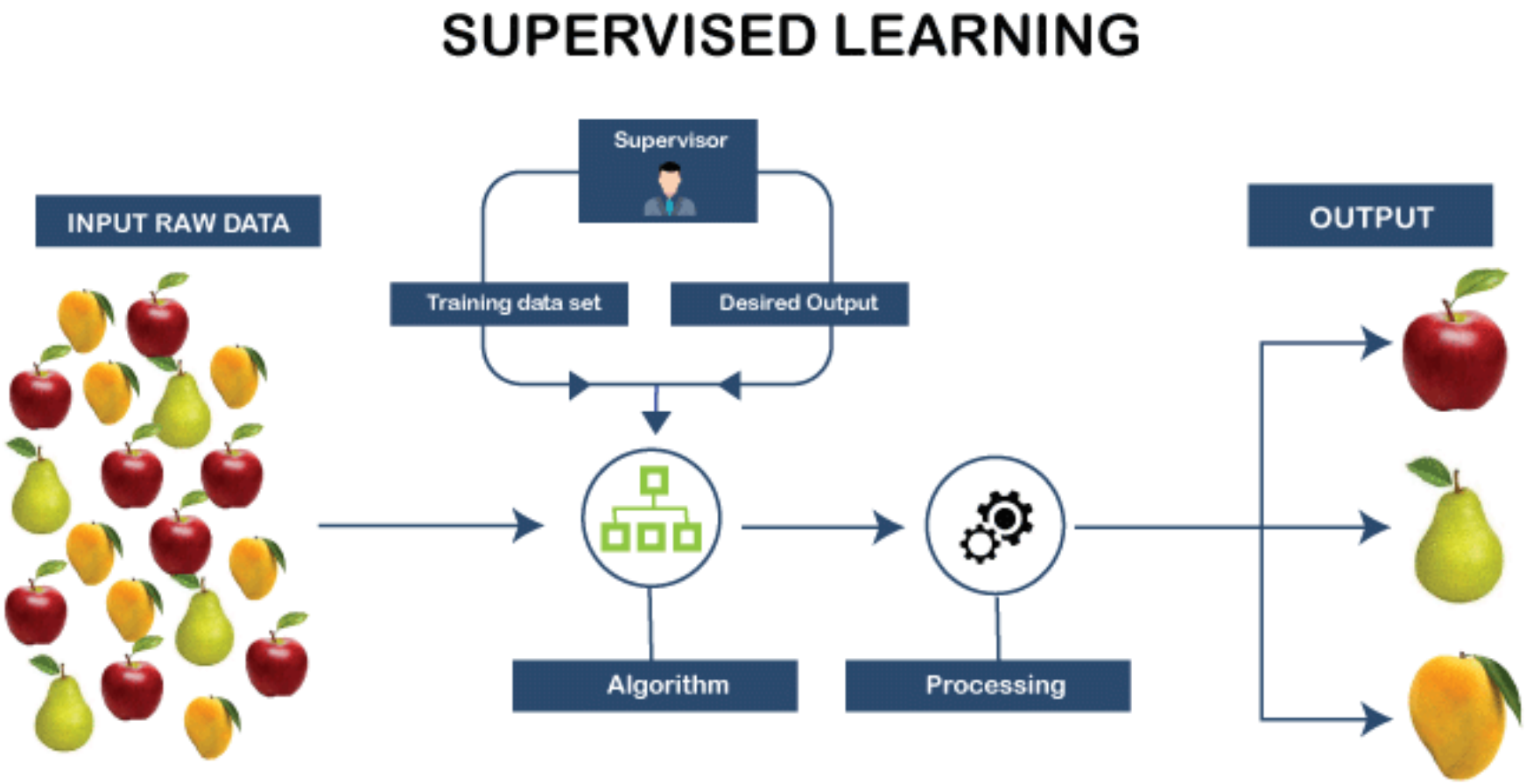
Self-supervised Learning

Semi supervised Learning

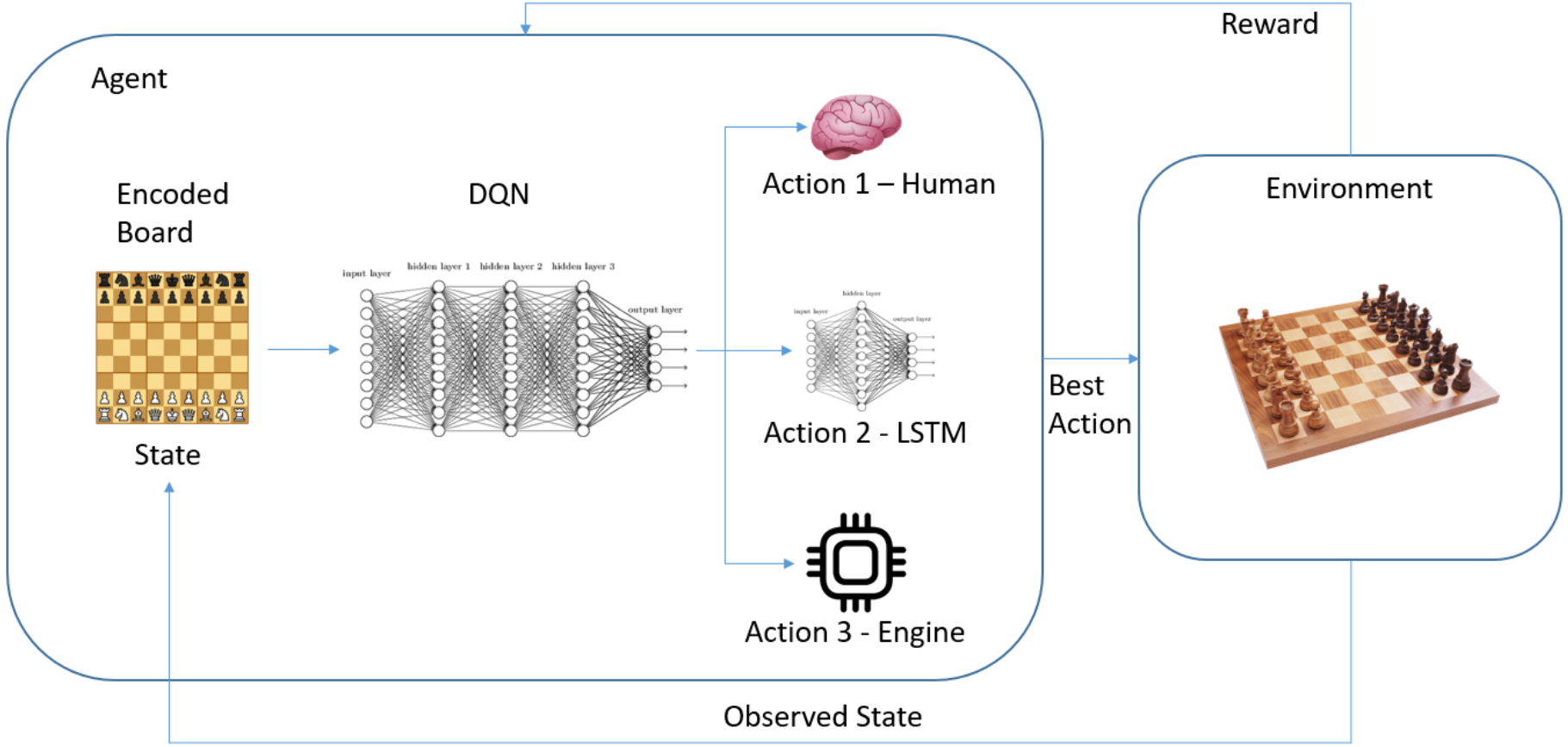
Types of ML



Unsupervised Learning

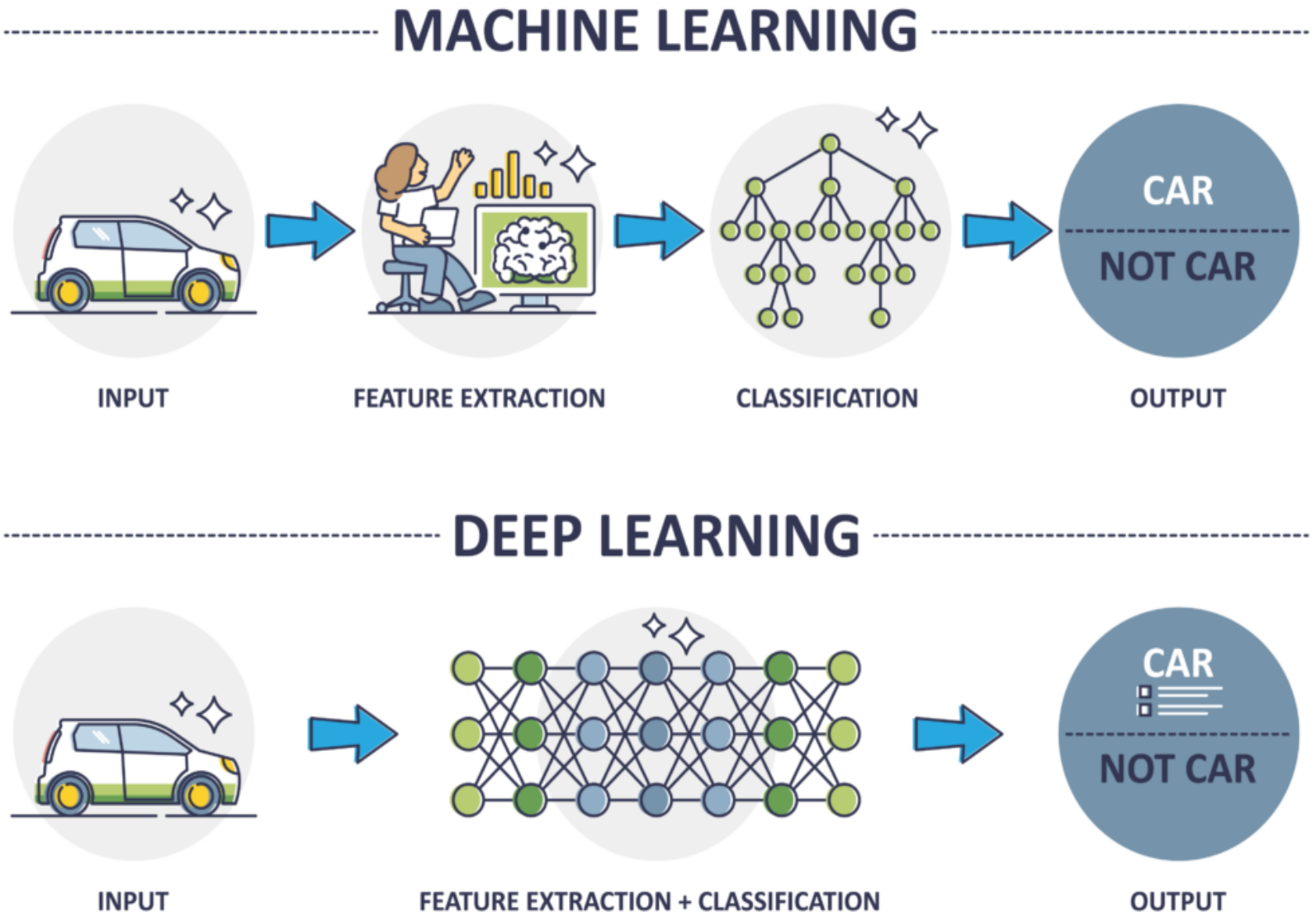


Supervised Learning

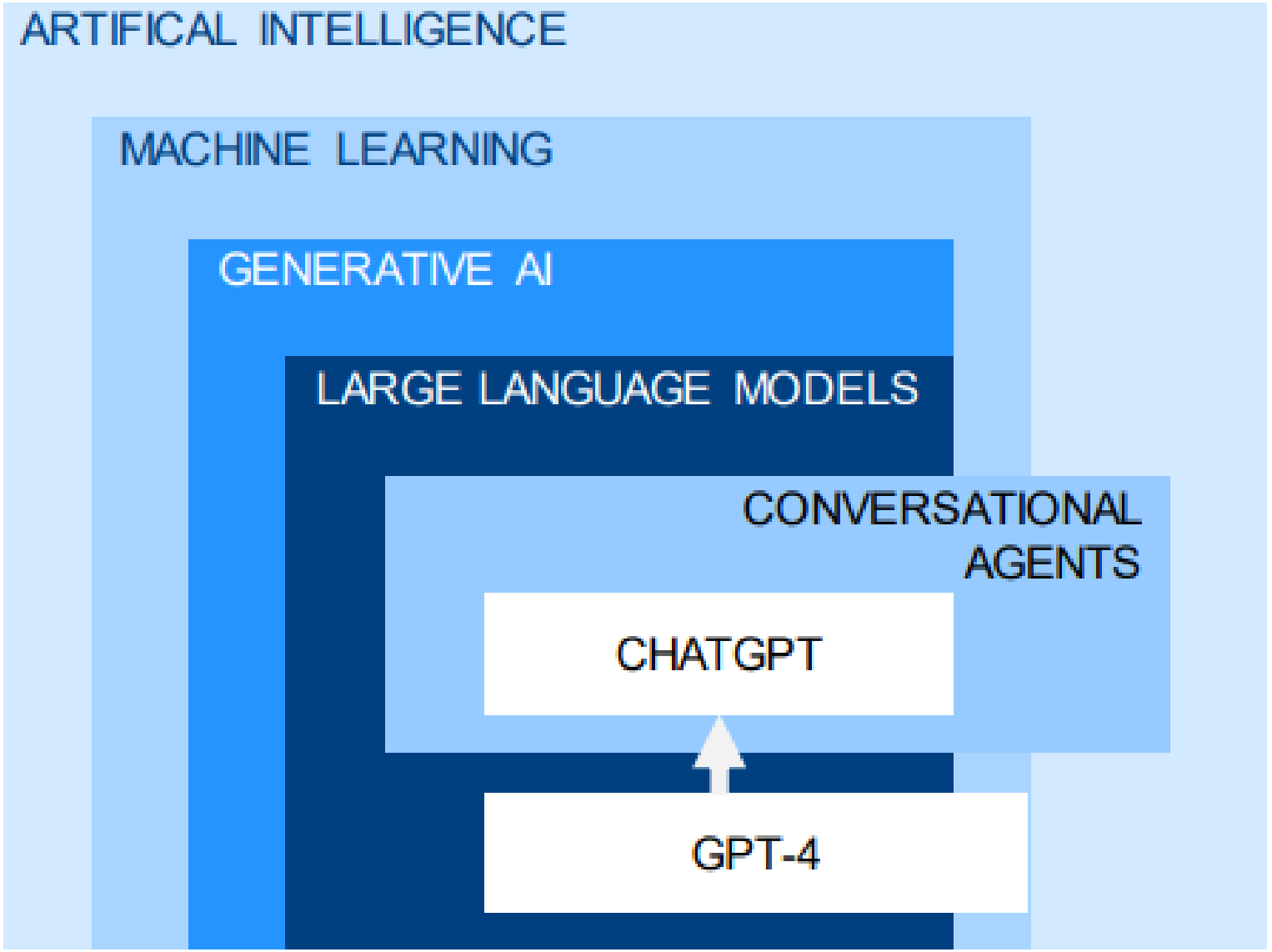


Reinforcement Learning

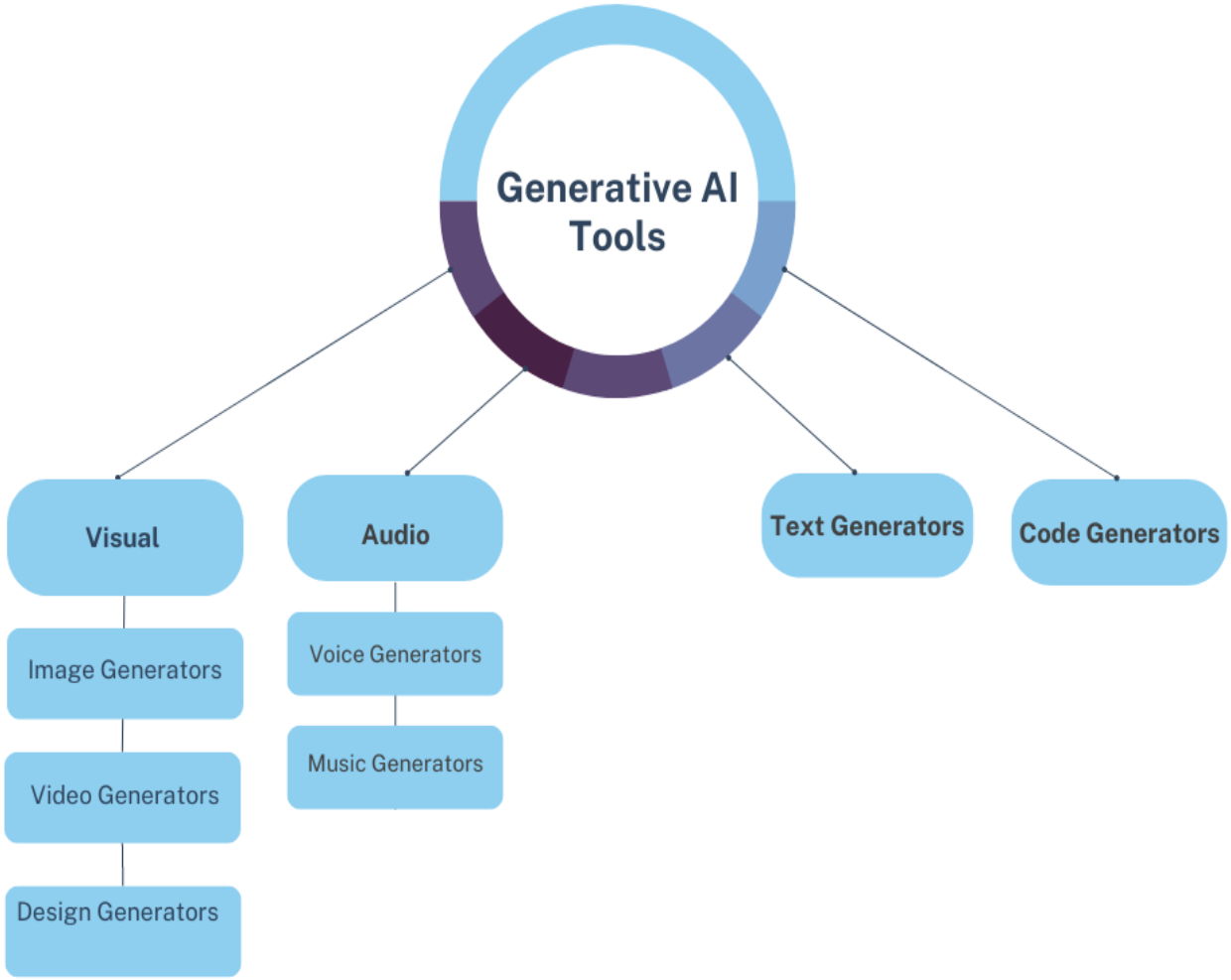
Deep learning



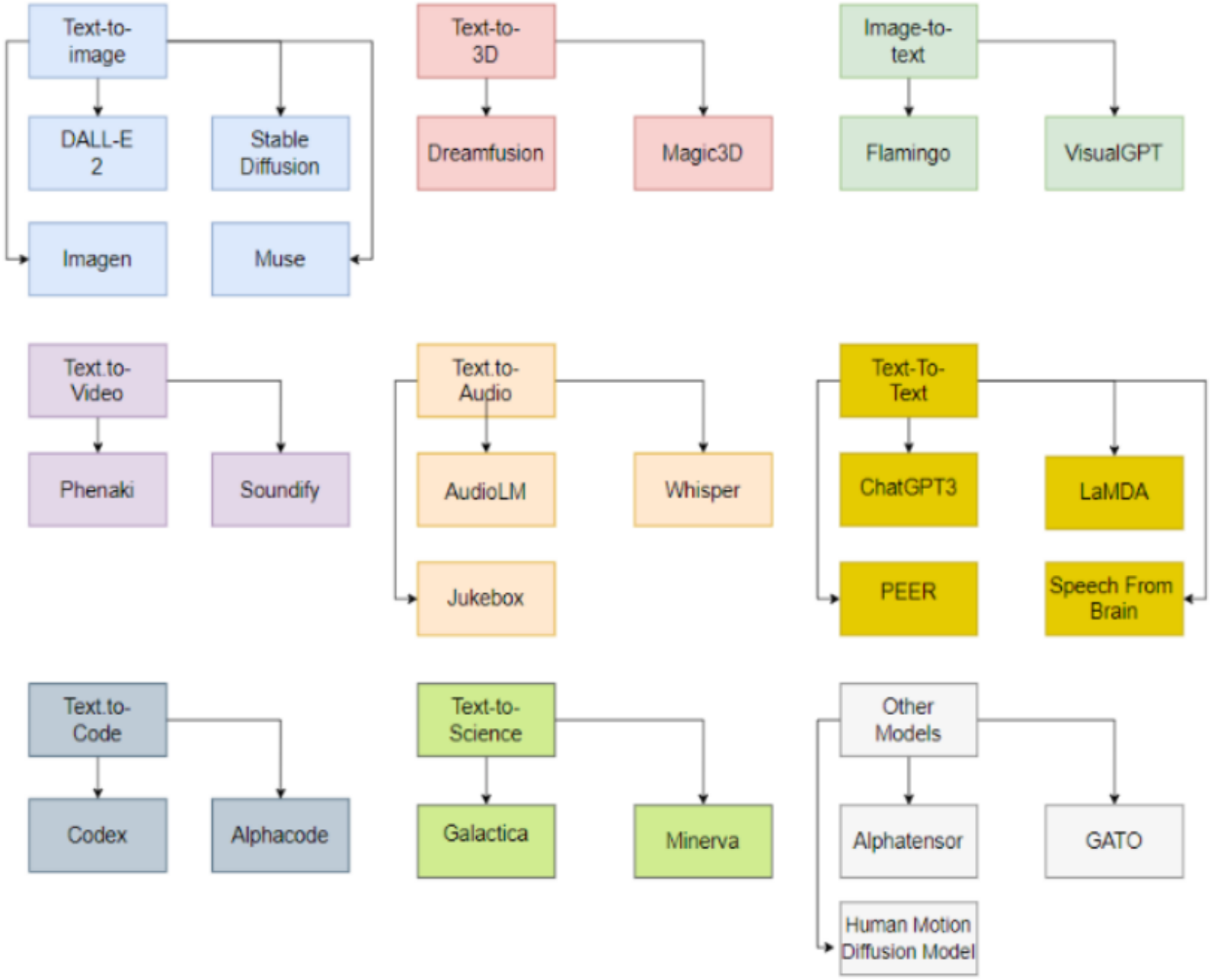
AI
vs
Machine learning
vs
Generative AI



Types of GenAI

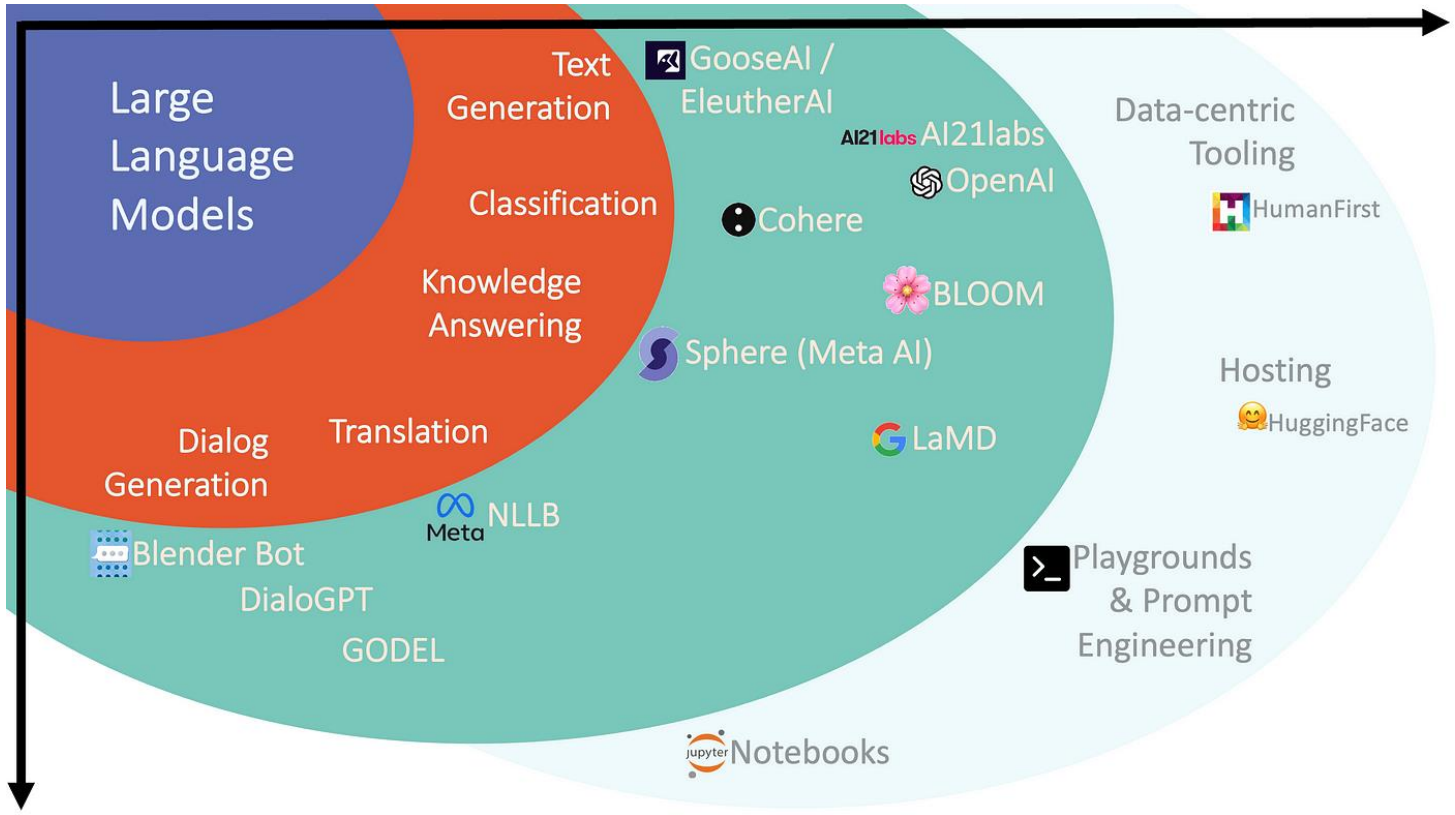


GenAI Well-known Models

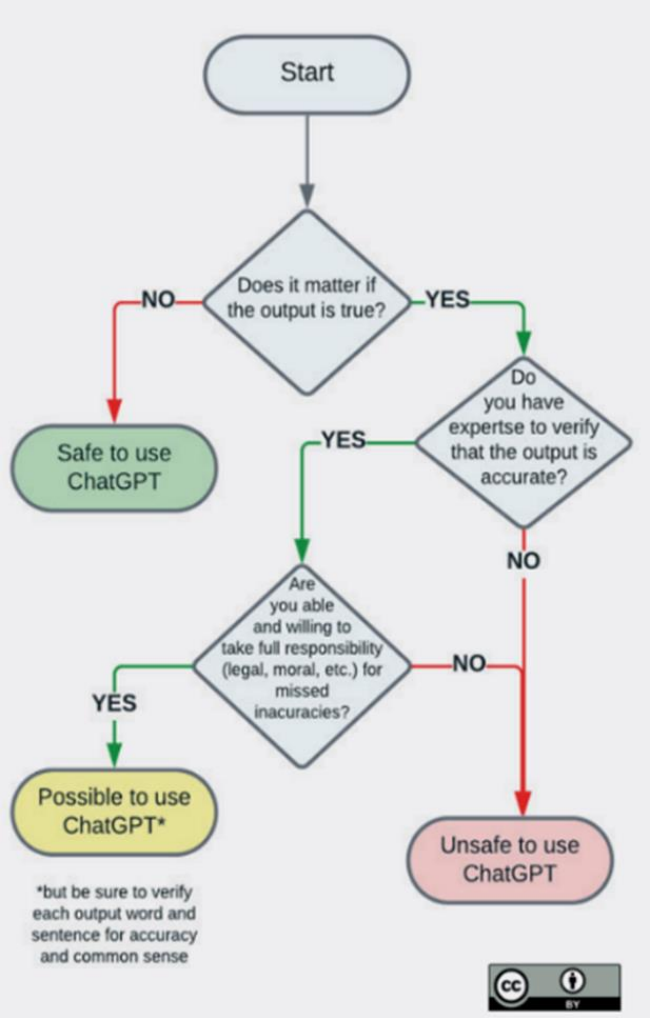


Large Language Model (LLM)

- Large language models (LLMs) are a type of advanced artificial intelligence system. ChatGPT is an example of an LLM that allows people to interact with a computer in a more natural and conversational way.
- GPT stands for “Generative Pre-trained Transformer” and is the name given to a family of natural language models developed by OpenAI. There are other large language models such as Bard, LLaMA, and Claude.
- These tools are known as **generative AI** because of their ability to produce seemingly original results.
- They are trained on large text datasets to learn to predict the next word in a sentence and, from that, generate coherent and compelling responses. GPT-3 is trained on 300 billion words.



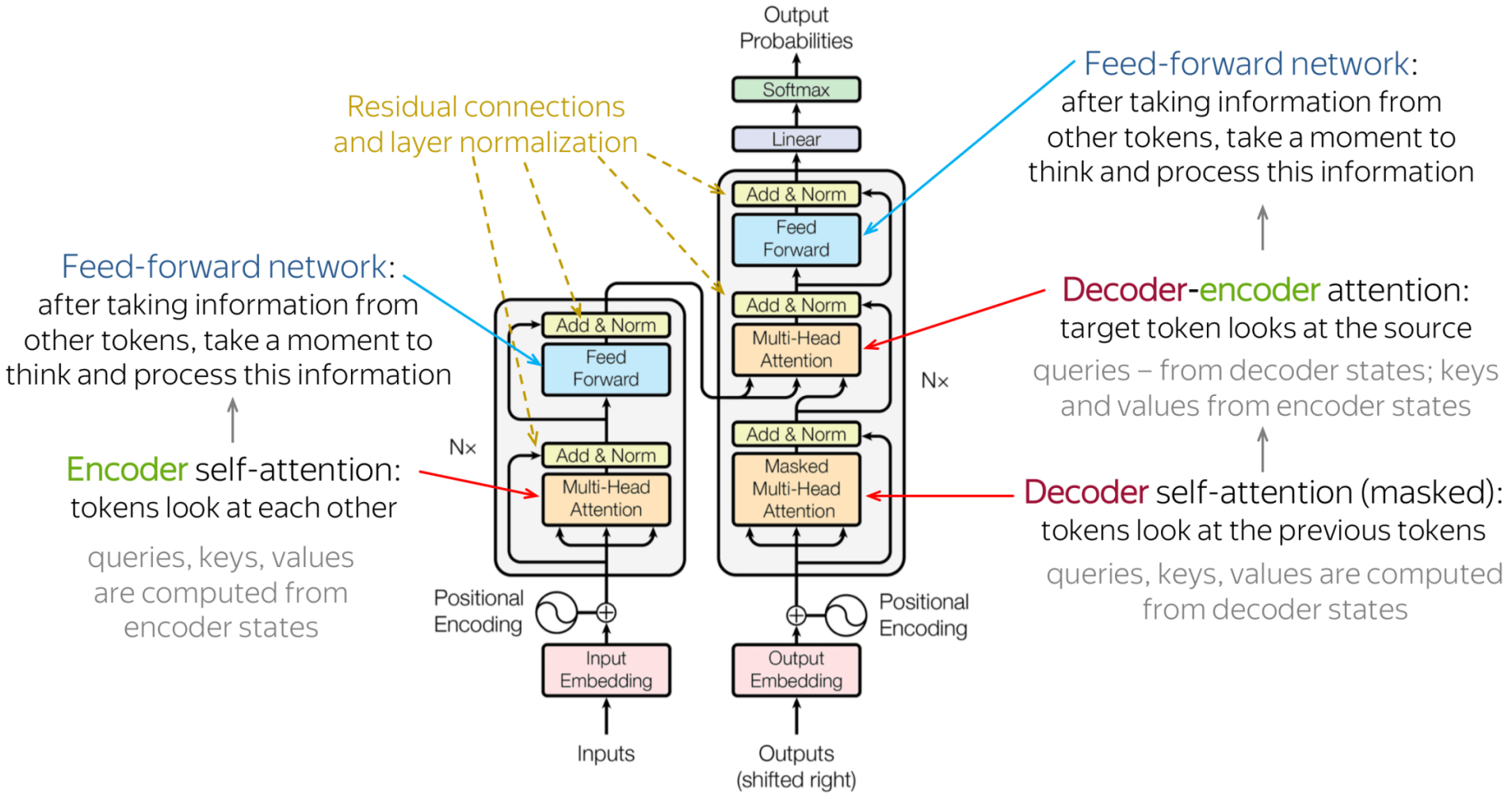
- LLMs are highly trained text-predictors. Their responses are based on probable language. Factual information may therefore contain inaccuracies that sound plausible but are often entirely incorrect. For example, LLMs may invent quotes, references, or coding libraries.
- LLMs only have access to the data they were trained on and therefore don't have access to current information.
- LLMs cannot perform complex computations and are not perfect at interpreting language. They simply predict the most likely sequence of words.



Does it matter if the output is inaccurate?

LLM limitation ?

How ChatGPT Work?



https://www.linkedin.com/pulse/how-does-chatgpt-work-dan-itkis-/

Is it appropriat to use GenAI in Education?

AI Ethic

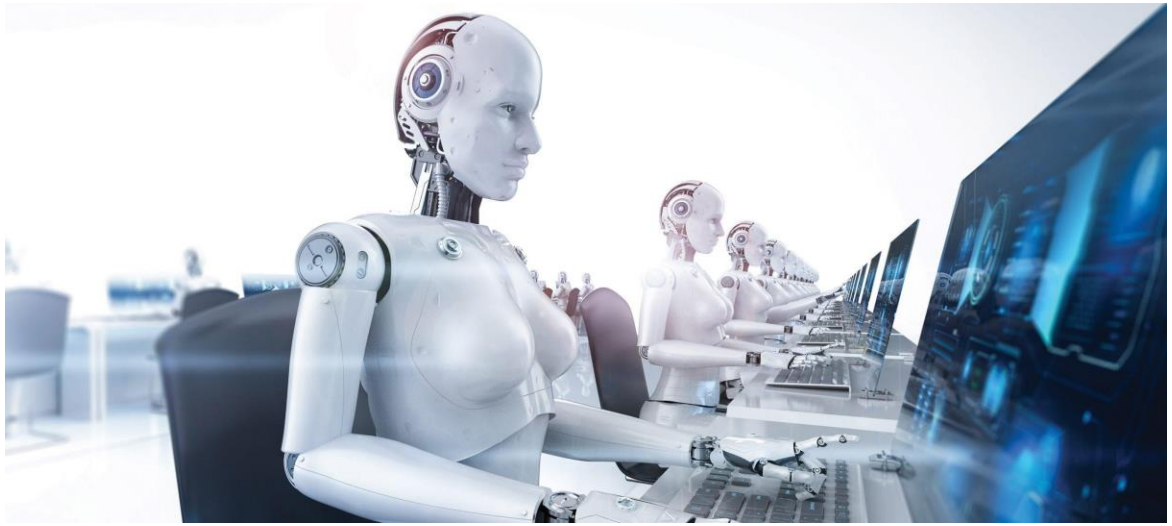
ETHICAL

Regulation
Privacy
Mitigation of Bias
Transparency
Relevance

LEGAL

Governance
Confidentiality
Liability
Accuracy
Decision Making

Future of GenAI vs AI



Thank you!