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Introduction to Artificial Intelligence

Chapter 03

Artificial Intelligence Types

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Contents

01. Narrow Artificial Intelligence.

02. General Artificial Intelligence.

03. Super Artificial Intelligence.

01 – Narrow Artificial Intelligence

Narrow, Limited or Weak AI is type of artificial intelligence that exists today and is considered one of the simplest. This type refers to AI systems designed and trained to perform a specific function or a set of functions. They perform this function or functions perfectly, but they cannot do anything outside of them.

Examples:

- Virtual assistants like Siri or Alexa, these systems can answer questions, play music and control smart devices in your home.
- Image recognition systems which can identify people and animals and photos.

- LLMs and generative AI, which is considered narrow artificial intelligence because it is limited to either processing or generating texts in the case of language models, or images and videos in the case of generative artificial intelligence.



Large Language Models



Image Recognition



Siri and Alexa

Despite their immense capabilities, limited artificial intelligence systems don't truly understand what they're doing.

Their intelligence is specialized, limited to a specific domain, and they lack awareness, emotions, or general understanding.

They operate based on patterns and data they've been trained on, and can only function within the confines of their programming.

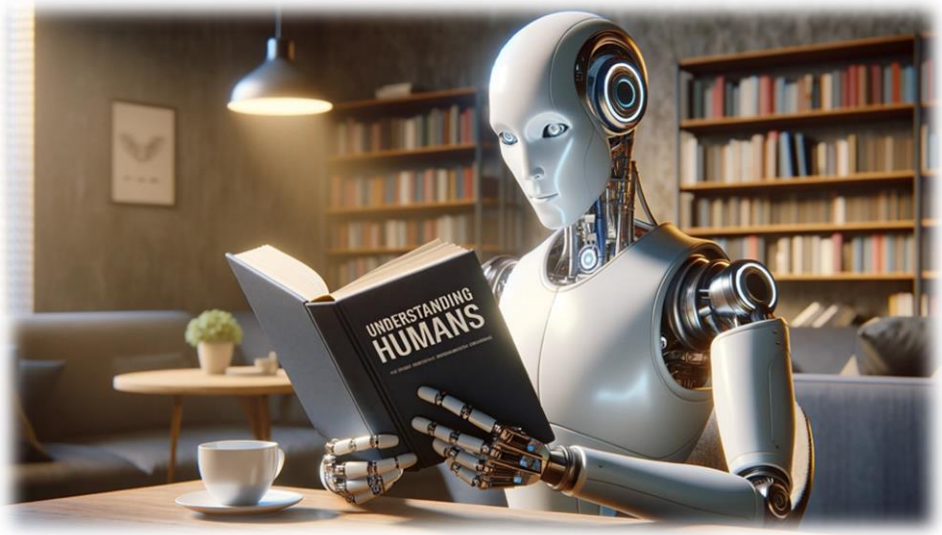
It involves building intelligent systems that mimic or demonstrate certain capabilities of human intelligence, without being intelligent in the true sense, they may be able to perform limited tasks accurately, but they lack true intelligence and awareness.

02 – General Artificial Intelligence

General or strong AI, is a type of artificial intelligence capable of understanding and applying knowledge (facts or tested information) across a wide range of tasks. At its core, it's the dream of creating a machine that can think and act like a human.

General AI will be able to understand natural language, solve problems, learn new skills, and adapt to new environments. It will not merely mimic human intelligence, but will reach a level comparable to it, possessing cognitive abilities similar to those of humans, and perhaps even attaining the same level of alertness and self-awareness.

An example of general artificial intelligence is a system capable of studying medicine, writing programs, learning a new language, and solving unfamiliar problems without the need for task-specific retraining.





The delay in achieving general artificial intelligence stems from several factors, including:

- While current AI models can generate fluent text and recognize images, they lack a true understanding of concepts. AI models rely on computational models and do not understand words, unlike the human mind, which constructs a plan or abstract idea and then expresses it.
- The complexity of the human brain, The brain requires understanding through psychology.

03 – Super Artificial Intelligence

Super AI is a hypothetical type of artificial intelligence that surpasses human intelligence in every aspect.

This super AI would be capable of understanding, learning, and applying knowledge across an unlimited range of tasks, potentially achieving goals that humans can only dream of.

It is important to note that super artificial intelligence remains within the realm of science fiction.

There are no practical examples of this type of intelligence, but according to researchers, some tasks that super AI might be able to accomplish include:

- Solving complex mathematical problems.
- Accurately predicting the weather five years in advance.
- An AI scientist producing theories that humans couldn't even imagine.

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