
DEFINITIONS OF
ARTIFICIAL INTELLIGENCE

AI – THEORETICAL DEFINITION

The simulation of human intelligence processes by machines, such as computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using the rules to reach approximate or definite conclusions), and ability to effect self-correction and plan.

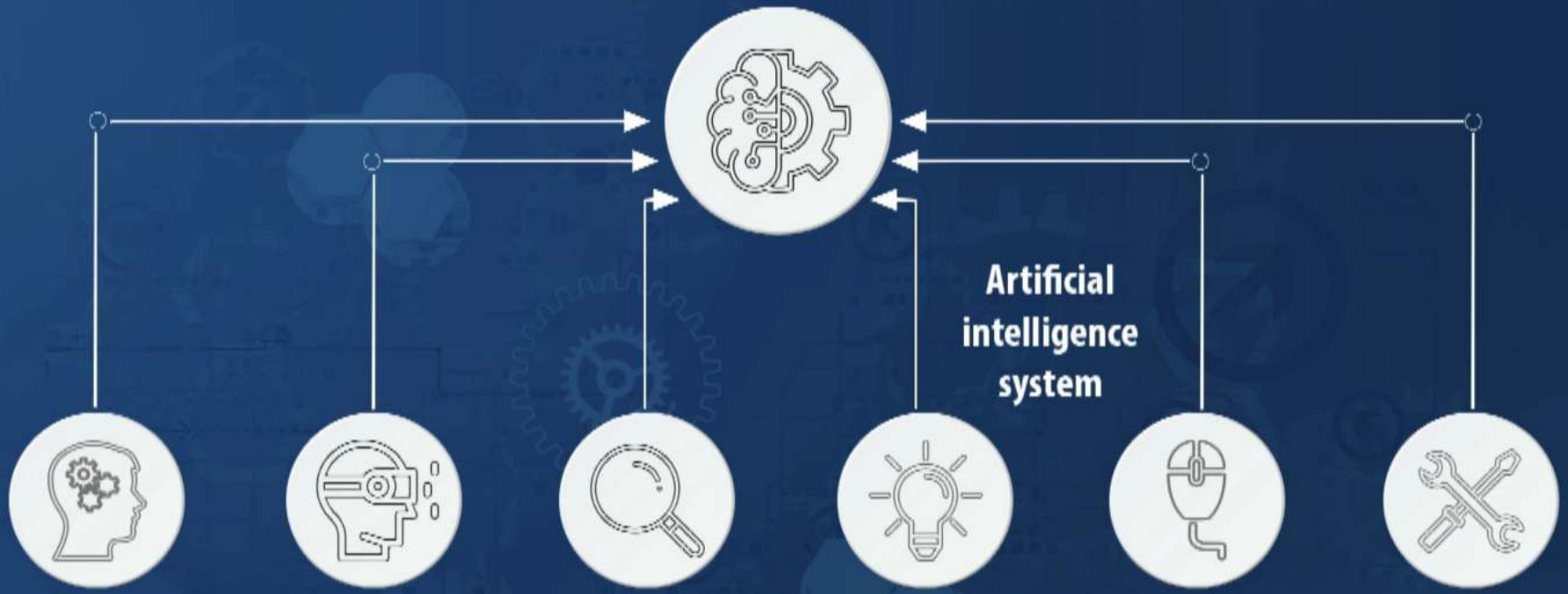
AI – MULTIPLE DEFINITIONS

- Artificial Intelligence is the process of incorporating human intelligence into machines or computer systems, so that they can develop the ability to think and respond like humans.
- Artificial Intelligence is the science of building artificial minds by understanding how natural minds work and understanding how natural minds work by building artificial minds.
- AI is the study of how to make computers do things which at the moment people do better such as Face & Speech recognition, Intuition, Inferencing, Learning new skills, Decision making, Abstract thinking etc.

AI – PRACTICAL DEDUCTIONS

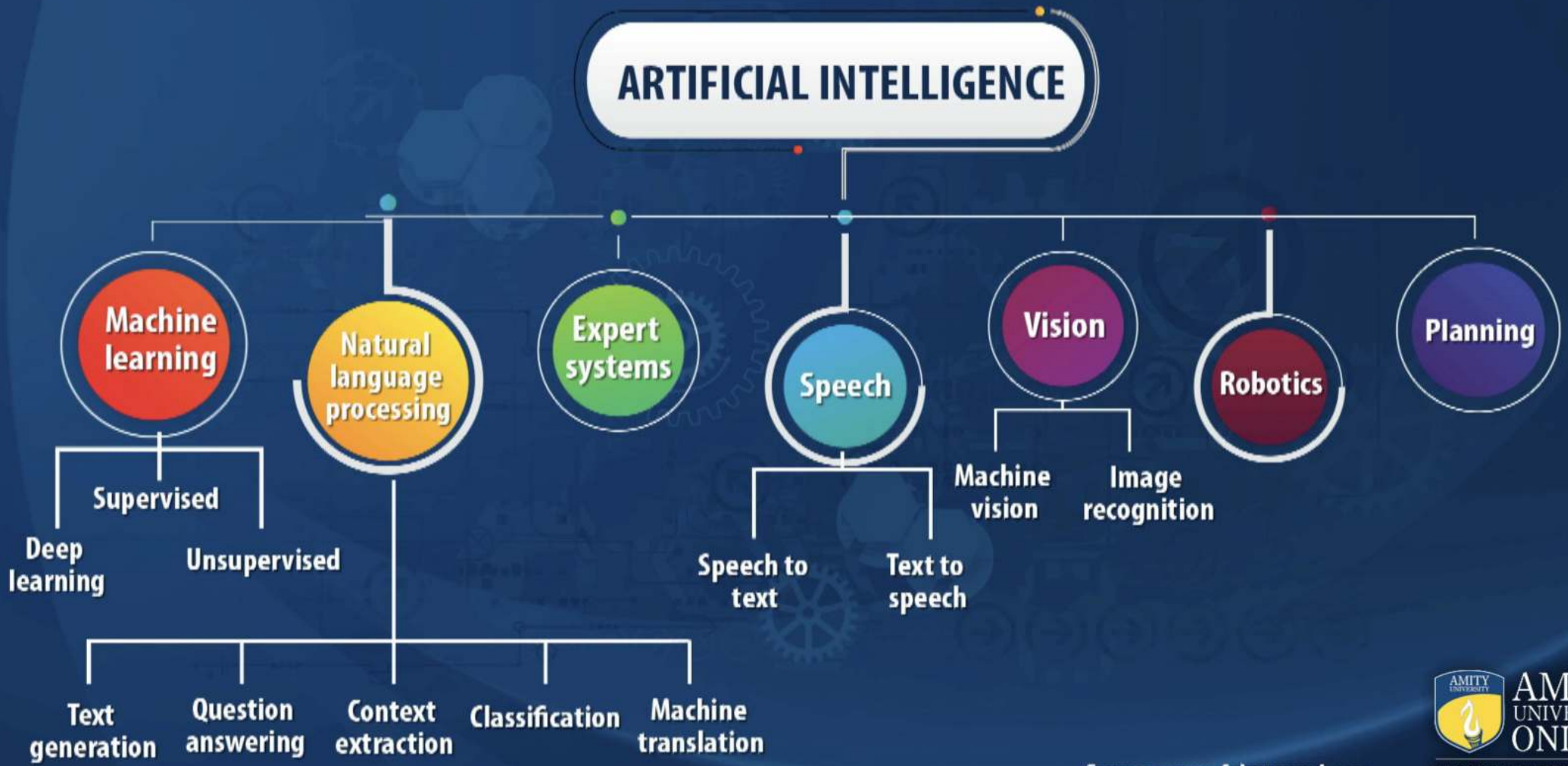
- In effect, AI is an attempt to initiate human like common sense, reasoning and problem solving abilities into machines.
- This would mean, machine needs to learn in a way similar to the way humans learn i.e. via experiences.
- This would mean, machine needs to go through all those experiences as well.
- This would mean, finding a way to make these experiences available to machine in a way it can understand (i.e. series of 0s and 1s).

AI – FEATURES



Source: www.geospatialworld.com

ARTIFICIAL INTELLIGENCE - AREAS



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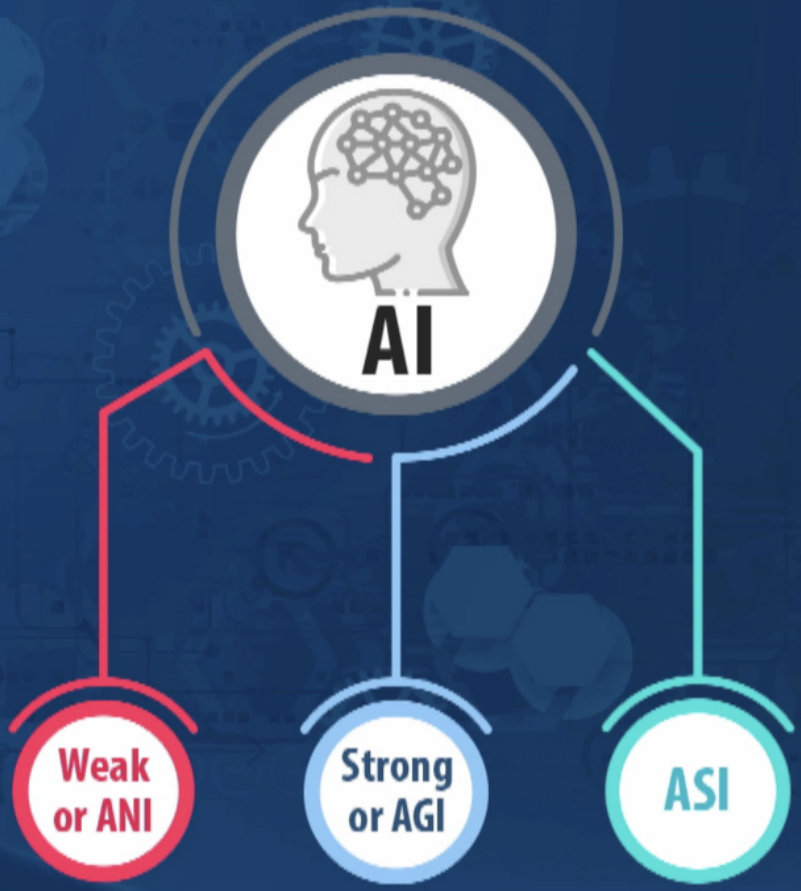
AI – TYPES



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AI – TYPES - ANI

- Weak AI (Narrow AI or Artificial Narrow Intelligence)
  - AI that cannot determine whether it can think
  - Always, task specific in nature
    - i.e. can do specific task well but would not be able to swap with any other task
    - E.g. Google PageRank is sophisticated AI and is considered best when it comes to ranking pages. But it cannot be asked to write code.
  - Similarly, implementations such as IBM Watson, Siri are examples of Narrow AI.

AI - TYPES - AGI

- Strong AI (Artificial General Intelligence)
  - Ability of machines to think like humans in variety of situations or replicate human cognition completely
  - Teach us more about how humans think !
  - No real life example exist
  - E.g. when machines becomes self- aware such as machine named as HAL9000 in movie A Space Odyssey (when HAL9000 shows emotions like fear, worries about existence)

AI - TYPES - ASI

- **Artificial Super Intelligence**
  - When AI doesn't mimic human intelligence but surpasses
  - It would surpass all humans at all things: coding, maths, writing books, prescribing medicine, creating new species and much, much more.

TYPES OF AI

This is the most basic form of AI. It perceives its environment/situation directly and acts on what it sees. It doesn't have a concept of the wider world. It can't form memories or draw on past experiences to affect current decisions. It specializes only in one area.

Examples: IBM's Deep Blue which beat Kasparov at chess

Google's AlphaGo which triumphed over human Go champions

TYPES OF AI

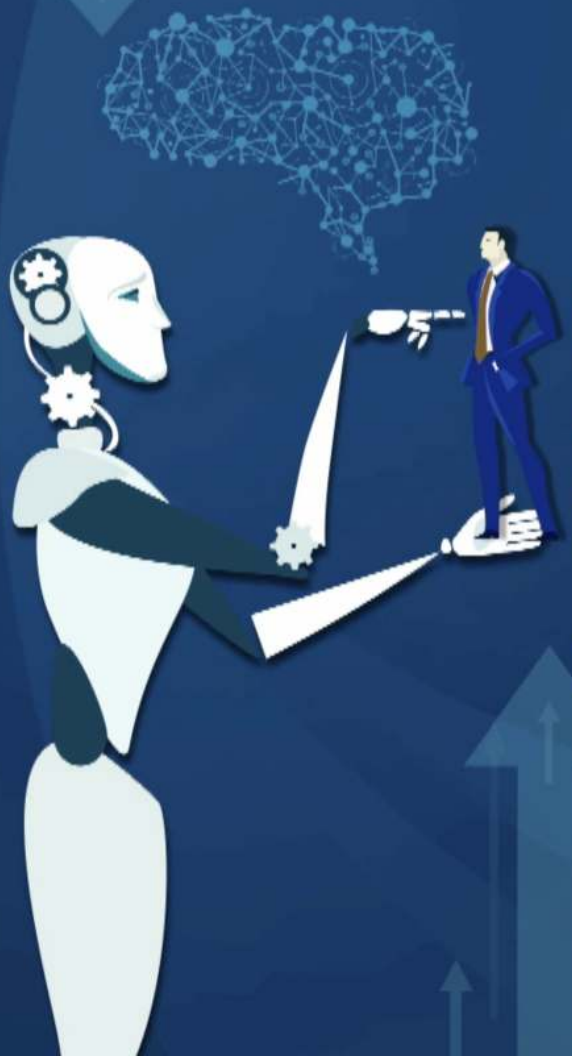
TYPE II
LIMITED MEMORY

Further up on the AI evolutionary ladder: this type considers pieces of past information and adds them to its preprogrammed representations of the world. It has just enough memory or experience to make proper decisions and execute appropriate actions.

Examples: Self-driving vehicles
Chatbots, personal digital assistants

TYPES OF AI

TYPE III
THEORY OF MIND



Type III AI has the capacity to understand thoughts and emotions which affect human behavior. This type - which can comprehend feelings, motives, intentions, and expectations, and can interact socially - has yet to be built, but would likely be the next class of intelligent machines.

Examples: C-3PO and R2-D2 from the Star Wars universe
Sonny in the 2004 film I, Robot

TYPES OF AI

TYPE IV
SELF-AWARE

These types of AI can form representations about themselves. An extension of the theory of mind, they are aware of their internal states, can predict the feelings of others, and can make abstractions and inferences. They are the future generation of machines: super intelligent, sentient, and conscious.

Examples: Eva in the 2015 movie Ex Machina
Synths in the 2015 TV series Humans