Netpremacy

Artificial Intelligence

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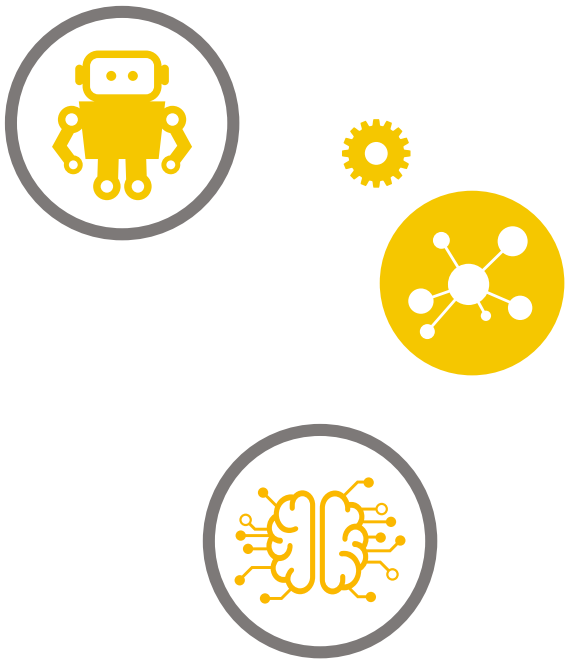


1. What is Artificial Intelligence?

Professor John McCarthy was the first one who coined the term artificial intelligence in 1956. His artificial intelligence definition:

"It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable." (1)

Some general definitions:

- A computer or a robot controlled by a computer being able to perform similar tasks as any other highly intelligent living being.
- Simulation of human intelligence processes by computers which includes learning, logical reasoning or problem solving

The founding father of AI, Alan Turing, defines this discipline as:

"A computer would deserve to be called intelligent if it could deceive a human into believing that it was human" (2)

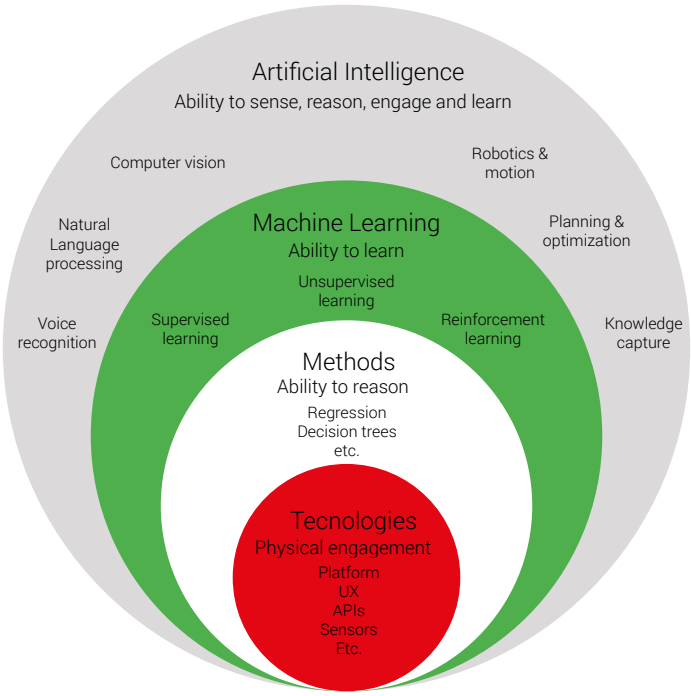
2. Types of Artificial Intelligence

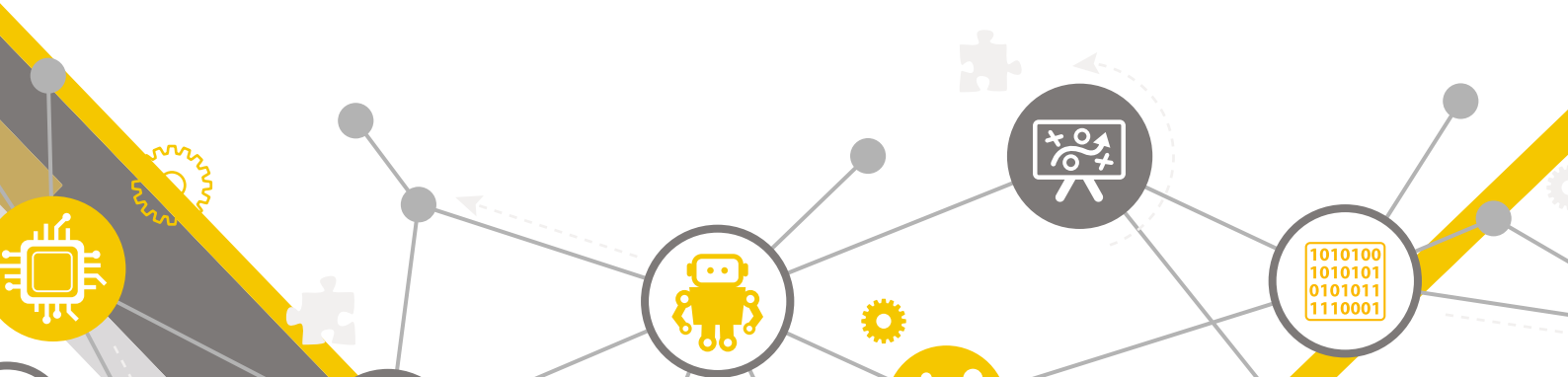
2a. Narrow AI

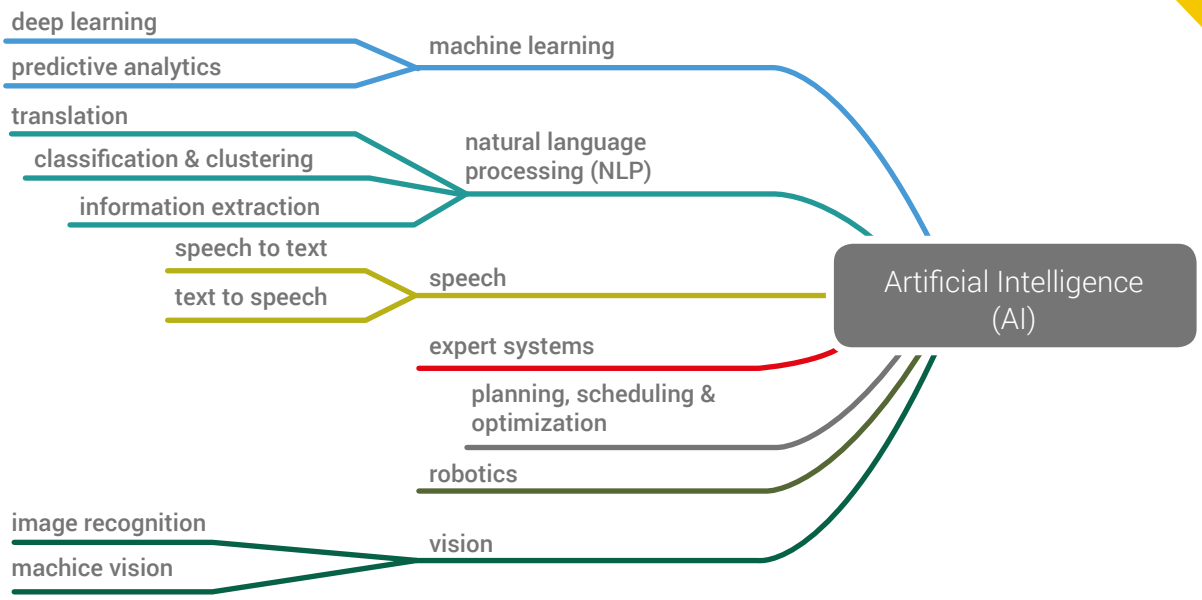
All of the current AI is narrow, which means that they can only performs tasks for which they have been designed to do. For every problem that needs to be solved a specific algorithm needs to be designed. Examples are facial recognition, game or translation.

2b. Strong AI/General AI

A computer or a computer controlled machine having complete autonomy to learn and solve any problems presented to it, like a human being. It doesn't require the need for designing new algorithms to solve those problems.







2c. Machine Learning (ML)

Artificial intelligence is the concept, and Machine Learning is the implementation of it. Machine Learning is training a computer/machine to learn from data by identifying patterns, and repeated occurrences to define models. Using these models for prediction, forecast or early detection.

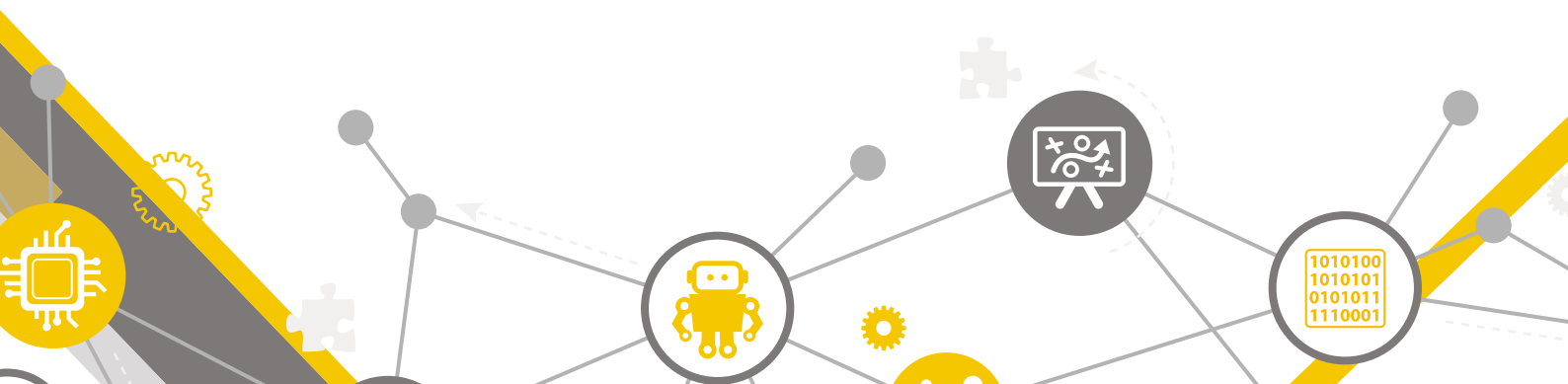
Practical implementations of Machine Learning in real world involve filtering an email spam,validation of credit card transactions for fraud detection or even identifying early illnesses inpatients.

Industries such as Financial, Automobile and Healthcare are reaping the benefits gained from using Machine Learning on a day-to-day basis.

2d. Cognitive Analytics

It is a subset of AI. This is where the capabilities offered by Natural Language Processing, Vision and Speech Text Recognition can be leveraged to gain an understanding of the data, entity identification, extract meaningful insights such as identifying names, places, understand relationships and concepts. Using this information to infer and provide answers to questions, to learn from human conversations and communicate at the same time using different media formats such as image, speech or video.

A simple use case of this can be applied within a Customer Support Centre to provide answers to customer queries through a chatbot. The chatbot is able to understand the question, being able to infer historical data, scan through other related information and provide an answer back to the customer.



2e. Robotics

Robotics is part of engineering, which primarily focuses on the manufacturing of robots for process automation, performing repeated tasks consistently or even complex tasks. They can be seen widely used in Automobile, Healthcare, and Manufacturing industries.

In the last few years we have seen the evolution of robots through the amalgamation of Robotics with Artificial intelligence. Humans have been trying to design Robots with Artificial intelligence making them look like human beings with high level of intelligence. A simple example of this is Sophia (6). In the near future smart robots would be able to imitate complete human behaviour, reasoning, emotions and demonstrate sufficient level of intelligence, as we human beings.

Smarter robots could be beneficial in military defense systems, and in healthcare to perform complex surgeries. They would be able to interact and communicate with humans, like humans.

2f. Autonomous Machines

These are machines that have self control, completely autonomous, learn quickly and respond to situations by being able to make decisions. For example, this could be the fridge that we use on a day-to-day basis. With AI, the fridge can transform into a smart machine. It would be able to order a fresh supply of items when they have finished. A car would be able to drive on its own, and at the same time being able to stop at the right time as soon as it detects a collision is about to happen, by making that decision to stop.

3. The Future of AI

The future of AI looks promising. Retailers would be able to provide better products and services to their customers. Financial firms would be able to detect fraudulent transactions well before even it happens. Intelligent systems would be able to provide a better customer services through chatbots, provide weather forecast which can be helpful in preventing catastrophes or provide efficient ways of managing traffic during congestion. All of this is possible through the use of AI.

4. References

(1) http://jmc.stanford.edu/artificial-intelligence/what-is-ai/index.html

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(3) https://www2.deloitte.com/nl/nl/pages/data-analytics/articles/part-1-artificial-intelligence-defined.html

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(5) https://www.dragon1.com/terms/artificial-intelligence-definition

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