## Introduction to AI

Understanding reasoning and perception of human beings and trying to replicate it to a form of machinery or intelligent agents has been a continuous effort of scientists all over the globe. The efforts goes way back to 1940s and the term was coined as academic field in 1956 by John McCarthy in Dartmouth conference (www.javatpoint.com, 2018) . In the book “Artificial Intelligence – A Modern Approach”, the authors define AI considering four different aspects based on behavior and rationale, thinking humanly, thinking rationally, acting humanly and acting rationally. (Russell & Norvig, 2010). So generally, AI can be defined as a machine or a system that can replicate human behavior or thinking capabilities making them able to make decisions on their own and the definition complies with the question raised by Alan Turing on thinking machines (www.javatpoint.com, 2021). Since the concept of thinking autonomous machines came into being, huge leap have been achieved such as neural networks and deep learning, reinforcement learning, data-mining to produce more reliable results, speech recognition, natural language processing, self-driving cars and so on (Russell & Norvig, 2010).

Artificial Intelligence in itself is a vast collection of sub-fields such as machine learning where a machine is fed with a bunch of unlabeled data and the machine deduces relation between data and the output. Deep learning is a field in which the data goes through various computation layers to get to a conclusion and in neural networks data is processed just like the human neurons does by passing information from one neuron to another. Similarly, natural language processing deals with trying to interpret and decode human language. Computer vision is another field which is used for image related tasks such that the machine interprets the image for classification and makes better output based on the images observed and cognitive computing is a field which deals with replicating a human brain by analyzing how human brain responds to text, objects and speech (Great Learning, 2020).

Ethics

## Phases of AI

Data Preparation:

Model Selection:

Training:

Optimization:

Evaluation:

Figure 1: Types of AI (SOFTWARETESTINGHELP, 2020)

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## History of AI

## Types of AI

Although artificial intelligence can be classified into types being based on many criterions but the types of AI we are discussing are categorized on the basis of the extent to which the AI can replicate human behavior and thought process. Namely, Artificial Narrow Intelligence (ANI), Artificial General Intelligence (AGI) and Artificial Super Intelligence (ASI).

* Artificial Narrow Intelligence (ANI)
  + ANI refers the AI system that is capable of doing a specific task. This includes every AI application till date such as translation engines, self-driving vehicles and so on. Even the most complex AI using neural networks and deep learning lies in the category of narrow intelligence as it has a narrower range of abilities.
* Artificial General Intelligence (AGI)
  + AI agents with AGI are equipped with the perception and capability of learning and understanding the environment as well as their human counterparts. These AI systems would be able to learn on their own, deduce conclusion out of different scenarios and make generalizations in various fields. Agents with AGI are said to have intelligence and multitasking capabilities like that of human beings.
* Artificial Super Intelligence (ASI)
  + This would be the gold standard of artificial intelligence as the systems equipped with ASI would be far more intelligent than the most intelligent beings on the earth. The features that would make it possible are availability of huge amount of memory, fastest data processing and the best decision-making abilities.

## Ethics Surrounding AI