

## Artificial Intelligence – An Overview

Since the invention of computers, their capability to perform various tasks went on growing exponentially. Humans have developed the power of computer systems in terms of their diverse working domains, their increasing speed, and their size. A branch of Computer Science named *Artificial Intelligence* pursues creating computers or machines as intelligent as human beings.

According to the father of Artificial Intelligence, John McCarthy, it is “*The science and engineering of making intelligent machines, especially intelligent computer programs*”. Artificial Intelligence is a way of making a computer or a software think intelligently, in the similar manner the intelligent beings think.

AI is accomplished by studying how human brain processes information, how humans think, learn, decide, and work while trying to solve a problem, and then using the outcomes of this study as a basis of developing intelligent software and systems.

While exploiting the power of the computer systems, the curiosity of human, lead him to wonder, “*Can a machine think and behave like humans do?*” Thus, the development of AI started with the intention of creating similar intelligence in machines that we find and regard high in humans. AI, as a field of study, aims at **Creating Expert Systems** (systems which exhibit intelligent behavior, learn, demonstrate, explain, and advice its users) by **Implementing Human-like Intelligence in Machines** (creating machines that understand, think, learn, and behave like humans).

Artificial intelligence is a science and technology based on disciplines such as Computer Science, Biology, Psychology, Linguistics, Mathematics, Engineering, and Cognitive Science. A major thrust of AI is in the development of computer functions associated with human intelligence, such as reasoning, learning, and problem solving.

Artificial intelligence, defined as intelligence exhibited by machines, has many applications in today's society. More specifically, it is **Weak AI**, the form of A.I. where programs are developed to perform specific tasks, that is being utilized for a wide range of activities including medical diagnosis, natural language processing, and remote sensing. AI has been used to develop and advance numerous fields and industries, including finance, healthcare, education, transportation, and more.

From SIRI to self-driving cars, artificial intelligence is progressing rapidly. While science fiction often portrays AI as robots with human-like characteristics, AI can encompass anything from Google's search algorithms to IBM's Watson to autonomous weapons. Artificial intelligence today is properly known as **Narrow AI** (or weak AI), in that it is designed to perform a narrow task (e.g. only facial recognition or only internet searches or only driving a car). However, the long-term goal of many researchers is to create **General AI** (AGI or strong AI). While narrow AI may outperform humans at whatever its specific task is, like playing chess or solving equations, AGI would outperform humans at nearly every cognitive task.

Futureoflife.org  
Tutorialspoint.com  
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## Section I / Understanding and Learning:

1- Are these statements: true, false, or not mentioned? Justify your answer.

- a) In artificial intelligence, an expert system is a computer system that emulates the decision-making ability of a human expert.
- b) Artificial intelligence is not interdisciplinary.
- c) Weak AI is artificial intelligence that is focused on one narrow task.
- d) All currently existing intelligent systems of any sort are weak AI at most.
- e) Artificial Intelligence is used to make autonomous weapons.
- f) Humans will always do better than AGI at nearly every cognitive task.

2- Answer the following questions according to the text:

- a) What is Artificial Intelligence?
- b) What are the main objectives of AI as a field of study?
- c) What is the main difference between Narrow Artificial Intelligence and Artificial General Intelligence?

### Team work:

Read the passage below. Based on what you have understood as well as your own thinking, answer the following questions:

- 1) What is the purpose of the author?
- 2) Why do people fear artificial intelligence?
- 3) Why does Pr. Hawking think that “*a rogue AI could be difficult to stop*”?
- 4) Is it right to think that AI is, like genetic engineering, unethical and hazardous?
- 5) What are some of the pros and cons of AI?

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“People have feared artificial intelligence (AI) almost as soon as it was invented. Hollywood in particular has done a masterful job of stoking those fears with movies like "Terminator" and "The Matrix" all making AI systems into demonic forces. Most recently, renowned scientist Stephen Hawking told Larry King he thought humans and AI could "co-exist," but that "a rogue AI could be difficult to stop" without appropriate safeguards in place. Like any technology, there is no inherent good or evil of AI; it's how it's used and implemented. People are just projecting their own misuse onto the technology.”

Datamation.com  
[Edited]

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