



جامعة عفت

EFFAT UNIVERSITY

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Artificial Intelligence - Spring 2023

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1 Questions:

1.1 Q1: Can you think of better definitions of Artificial Intelligence? Why are they better? Are there other classification schemes that could be more useful?

There are many different definitions of Artificial Intelligence (AI), and the choice of definition often depends on the context and the goals of the individual or organization using the term. Here are a few alternative definitions of AI:

AI as the simulation of human intelligence: This definition emphasizes the ability of AI systems to perform tasks that typically require human-level intelligence, such as perception, reasoning, learning, and problem-solving. While this definition captures the popular perception of AI, it may be too broad to be useful in some contexts. Functional classification: This classification scheme groups AI systems based on the functions they perform, such as perception, reasoning, learning, or communication. This scheme can be useful for understanding the capabilities and limitations of different AI systems.

1.2 Q 4: What is meant by “Weak AI” and “Strong AI”? Do you think the distinction is useful?

“Weak AI” refers to artificial intelligence systems that are designed to perform specific tasks, without necessarily having the ability to exhibit human-like intelligence. These AI systems are programmed to perform specific functions, like playing a game or recognizing speech, but they do not have the ability to think, reason, or make decisions like a human being.

On the other hand, “Strong AI” refers to artificial intelligence systems that possess human-like intelligence and can perform any intellectual task that a human being can. Strong AI systems are capable of understanding natural language, learning, problem solving, and even experiencing consciousness.

The distinction between weak AI and strong AI is a useful one, as it helps to clarify the capabilities and limitations of AI systems. Understanding the difference between the two types of AI also helps researchers, developers, and policymakers to set realistic expectations for AI and its potential applications.

1.3 Q5: How do you think artificial neural network systems fit in with the above definitions and classifications? What level of achievement is required of an artificial neural network before you would accept it as an example of AI?

there are general principles that can inform us when to follow biology and when not to. Here are a few:

Functionality: One important consideration is whether the biological feature in question has a specific function that we need to replicate. Efficiency: Another important factor to consider is whether the biological feature is efficient for the task at hand. Scalability: Biological systems are often limited in their scalability, while technological systems are not. Ethical considerations: We also need to consider ethical and moral considerations when deciding whether to follow biology. In summary, the decision of whether to follow biology or not should be based on the specific needs of the task at hand, including considerations of functionality, efficiency, scalability, and ethical implications.

1.4 Q6: Why does evolution tend to result in systems that act intelligently? Does evolution ever produce examples of irrational behaviour? Should we expect artificial evolution to lead automatically to good AI systems?

When it comes to artificial evolution and the creation of AI systems, we cannot expect it to automatically lead to good AI systems. Artificial evolution is a powerful tool for creating complex systems and can be used to generate innovative solutions to difficult problems. However, the fitness function used in artificial evolution is only as good as the designer who creates it. If the fitness function does not capture the goals and constraints of the problem space or if it is biased towards certain solutions, then the resulting AI system may not be optimal or even safe. Therefore, it is essential to carefully design fitness functions and to monitor the evolutionary process to ensure that the resulting AI system is both effective and safe.