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Is AI real intelligence that is Artificial

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Abstract

Artificial Intelligence has had a boom in the last decade with large language models like ChatGPT, Gemini, Copilot, DeepSeek, ETC. But can we really consider this real intelligence? After thorough research I have come to understand that there are gaps in the execution of Artificial Intelligence as it is now able to be considered real intelligence. Such as it's poor performance in reasoning tests and its lack of autonomy.

Introduction

To be able to determine if artificial intelligence's only difference to real intelligence is that it's artificial we need to first understand the fundamental concepts that we are discussing in the first place. This all starts with, what is intelligence?

Intelligence is often described as the adaptive capacity within an environment. It is said that living beings obtain it through genetics and their environment. However, there are more detailed definitions and explanations as "new approaches in network neuroscience propose that intelligence emerges from connectivity across a global information‑processing architecture"[1] Thus we could say that intelligence is also how efficiently our neurons are wired. Artificial Intelligence follows this same rule. For the efficiency and accuracy of varied questions Artificial Intelligence relies on the efficiency of connections in a hardware.

Findings

But what is artificial Intelligence? "Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy."[2] From the definition of IBM we can understand that AI fundamentally simulates human intelligence, by simulating human learning, comprehension, problem solving, decision making, creativity and autonomy. But AI has faced quite a few hurdles in all of these. In a video, Sabrina Cruz from 'Answer in

Progress' realized an experiment [3] where they took standardized tests and compared their results with results from OpenAI's ChatGPT and Google's Bard. In tests like the LSAT Reading Comprehension and the MMLU exam that the model was trained for, these AI chatbots were able to do excellent with over 80% accuracy. Exams where understanding and deriving information are tested, these Chatbot excelled, but tests like the IQ Test (Reasoning), and ARC (Learning from Experience) the AI performed terribly with under 15% accuracy on both. However the theory is that the AI struggles with the novelty of these exams. Exams like the IQ Test often test pattern recognition and if these patterns are new, which is often the case since we want to test the reasoning and not memorization, the AI won't be able to recognize it. And AI benefits a lot from its potentially massive memory banks from all the training data it has been trained with.

Artificial intelligence also implements a neural network to its thinking, but is it the same as our human neural network? "In artificial neural networks, an external algorithm tries to modify synaptic connections in order to reduce error, whereas the researchers propose that the human brain first settles the activity of neurons into an optimal balanced configuration before adjusting synaptic connections. The researchers posit that this is in fact an efficient feature of the way that human brains learn. This is because it reduces interference by preserving existing knowledge, which in turn speeds up learning."[4] In other words, it is correct to assume that human intelligence is actually faster at learning than AI, at least at the moment, but since AI can be trained with massive amounts of information the memory these store is greater than the knowledge a single individual can have throughout their lifetime. But does that prohibit it to be classified as real intelligence?

To know if Artificial Intelligence is intelligence we also need to consider the aspect of creativity. When taking 151 humans and 151 instances of ChatGPT GPT-4, "The results of this comparative study offer compelling insights into the creative prowess of GPT-4. Notably,

an independent sample t-test revealed no significant differences in total fluency between humans and GPT-4, indicating a level playing field in terms of the quantity of generated ideas." However the author on the same article states the following, "Creativity, in its purest form, is often seen as an expression of something uniquely human—some may even say the soul. It's this manifestation of the innermost thoughts and feelings that transcend mere linguistic or conceptual novelty." [5] It is true that if you properly observe an art piece, specially if you are an art expert, you can notice what art pieces are made using AI and which ones are done by a human due to the emotions involved the the pieces. But the originality and mixture of ideas can be just as unique as the variations obtained by humans.

Another crucial aspect we need to consider is autonomy. Artificial Intelligence as it is right now cannot be considered autonomous. It depends on the work and labour or programmers and experts in the field to make sure AI runs. Unlike humans, AI cannot obtain the energy needed to keep itself running, although in some cases it could be programmed to talk with us almost fluently simulating human thinking and rationality, it must be programmed by a human to do so and it must be trained to be able to provide educated answers to complex questions, in order to conversate with ordinary humans. "It may eventually be possible for humans to create artificial life that can physically replicate by itself, and only then will we have created truly artificial intelligence. Until then, machines will always only be surrogates of human intelligence, which unfortunately still leaves open the possibility of abuse by people controlling the AI." says Dr. Dayeoul Lee, Bloomberg professor of neuroscience, psychology and brain sciences in a questions and answers session of John Hopkins Medicine [5].

Conclusion

Given the results obtained, we can conclude that the only difference between Artificial Intelligence and what we call real intelligence is the fact that one is artificial and relies on the other for its own existence. AI heavily relies on training and maintenance given by humans. Henceforth it has low to no autonomy and poor reasoning and therefore cannot be considered real. Therefore Artificial Intelligence truly is not real intelligence that is just artificial.

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