What Role can Explainable Artificial Intelligence Play in Human Innovation?

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Perspective

Artificial intelligence (AI) has produced superhuman-level computers that can drive automobiles, build chemical compounds, fold proteins, and detect high-energy particles. These AI systems, on the other hand, are unable to explain their decision-making processes. A computer that can master protein folding while simultaneously informing researchers about biological laws is far more beneficial than one that folds proteins without explanation [1].

Early Artificial Intelligence research in the 1950s centred on problem solving and symbolic techniques. The US Department of Defence became interested in this type of work in the 1960s, and began teaching computers to emulate fundamental human reasoning. In the 1970s, the Defence Advanced Research Studies Agency (DARPA), for example, undertook street mapping projects. DARPA developed intelligent personal assistants in 2003, long before Siri, Alexa, or Cortana became popular names. While Hollywood movies and science fiction literature depict AI as humanoid machines that take over the world, the current state of AI technology is far less frightening — and far less intelligent. Instead, AI has progressed to provide a wide range of benefits across a wide range of businesses.. Continue reading to learn about modern applications of artificial intelligence in fields such as health care, retail, and more [2].

Reinforcement learning is a branch of AI that explores how computers may learn from their own experiences. Reinforcement learning is a type of machine learning in which an AI explores the world while receiving positive or negative feedback based on its activities. This method has resulted in algorithms that have learned to play chess at a superhuman level and establish mathematical theorems without the need for human intervention. I utilise reinforcement learning to construct AI systems that learn how to solve puzzles like the Rubik's Cube in my job as an AI researcher.

AIs are learning to solve issues that even humans can't solve on their own thanks to reinforcement learning. This has prompted me and many other researchers to consider what people can learn from AI rather than what AI can learn from humans. A computer capable of solving the Rubik's Cube should also be capable of teaching others how to do so. Unfortunately, we humans are currently unable to access the minds of superhuman AIs. AIs are horrible teachers and are what we call "black boxes" in the computer science world. A black-box AI just tosses out solutions without explaining why it does so. Computer scientists have been attempting to crack this black box for decades, and recent study has revealed that many AI algorithms think in human-like ways. A computer taught to recognise animals, for example, will learn about various sorts of eyes and ears and combine this knowledge to correctly identify the animal [3].

The Rubik's Cube is essentially a problem of path finding. The Rubik's Cube can be broken down into a few broad steps - for example, the first step could be to make a cross, and the second step could be to position the corner pieces. While there are over 10 to the 19th power conceivable Rubik's Cube combinations, a generalised step-by-step instruction is fairly easy to learn and can be used in a variety of situations. Artificial perception has progressed to the point that optical sensors can identify humans, autonomous vehicles can drive at highway speeds, and robots can roam through buildings collecting empty drink cans [4].

References

[1] Minsky M (1961). Steps toward artificial intelligence. Proceedings of the IRE. 49:8-30.

[2] McCarthy J, Hayes PJ (1981). Some philosophical problems from the standpoint of artificial intelligence. In Readings in Artif Intell. 431-450.

[3] Fetzer JH (1990). What is Artificial Intelligence? In Artificial Intelligence: It's Scope and Limits. 3-27.

[4] McCarthy J (1987). Generality in artificial intelligence. Commun ACM. 30:1030-5.