

Artificial Intelligence and Expert Systems

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Abstract: Artificial Intelligence (AI) is a specialized field of computer science focused on creating machines that can emulate human intelligence and behaviour. The term "Artificial Intelligence" was first introduced by John McCarthy in 1956 at the Massachusetts Institute of Technology (MIT) in the USA. AI encompasses a variety of applications including game playing, expert systems, natural language processing, neural networks, and robotics.

As of now, no computer systems have achieved true artificial general intelligence, which would enable them to perform any intellectual task that a human can. However, significant progress has been made in specific domains, particularly in game playing. Modern computer chess programs, for instance, have surpassed human players in terms of skill and performance.

In the early 1980s, expert systems were heralded as the future of AI and computing. These systems are designed to mimic the decision-making abilities of human experts in specialized fields such as medicine and engineering. Despite their potential, expert systems have not fully met the high expectations set for them. They tend to be costly to develop and maintain, and their utility is often limited to specific, well-defined tasks.

Currently, neural networks represent one of the most dynamic and rapidly advancing areas of AI. These algorithms, inspired by the structure of the human brain, have demonstrated success in various applications, including voice recognition and natural language processing.

When it comes to programming AI applications, LISP (List Processing) and Prolog (Programming in Logic) are two of the most widely used languages due to their suitability and flexibility for AI-related tasks.

Keywords: Artificial Intelligence, Human intelligence, Expert systems, Machine Learning, Deep Learning.

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