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Artificial Intelligence and Its Future

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ABSTRACT

Artificial Intelligence is a branch of Computer Science, aimed at creating computers or machines having level of artificial intelligent similar to human beings.

Keywords: computer, efficiency, human, innovation, intelligence

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INTRODUCTION

The innovation of computers by human being is the biggest achievement of the past centuries. The proficiency to perform various tasks went on improving by computers. The power of computer systems in has changed in terms of their working domains, speed, efficiency and size with respect to time by the continuous efforts of humans [1–3].

WHAT IS INTELLIGENCE?

In context of living things, intelligence is the capacity of thinking, perception, characterization, consciousness, self-awareness, and rejection, self-defense, response to stimuli. But, when considered to specifically humans, humans possess the power of cognition, the ability to learn, frame concepts, understand, reason, and think logically. They are adept to recognize patterns, realize ideas, plan, solve problems, take decisions, retain information, and the best one is the use language to communicate. Intelligence enables humans to experience and think and respond according to the need of situation.

But machine intelligence is the ability to think, reason, perceive and analyze, learn from experience, store and retrieve information from memory, solve problems, comprehend complex ideas, use language fluently, classify, generalize, and adapt new situations [4].

WHAT IS ARTIFICIAL INTELLIGENCE?

Artificial Intelligence is a systematic approach of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the intelligent humans think. John McCarthy is the father of Artificial Intelligence, according to him; Artificial Intelligence is "The science and engineering of making intelligent machines, especially intelligent computer programs". AI involves study of how human brain learn, think, work and take decisions, solve problems, and collecting the data based on the outcomes of the study serves as the source for developing intelligent software and systems [5].

Idea of Artificial Intelligence

While exploiting the power of the computer systems, the interest of human, inspired him to think about the ability of a machine to think and behave like humans. Thus, the development of AI started with the objective of creating machines having intelligence similar to humans.

Objectives of Artificial Intelligence

(1) Creating Intelligent and Proficient Systems: The systems which can demonstrate intellectual behavior, can learn and adapt from environment, explain, and assist the users.

(2) Making use of Human Intelligence to form Machines having man like intelligence: The systems can understand reason, learn, and act like humans.

Applications of Artificial Intelligence

Artificial Intelligence has been used in various fields such as:

(1) Gaming: It is used in strategic games such as chess, poker, tic-tac-toe, etc., where machine can think about maximum number of possible locations based on experiential knowledge.

(2) Natural Language Processing: Making computer that can understand natural language spoken by humans.

(3) Expert Systems: Making applications to integrate machine and software, and special information to communicate with users and provide reasoning and advice.

(4) Vision Systems: Such systems understand, interpret, and plot visual input on the computer.

(5) Speech Recognition: Such systems are capable of understanding the language in terms of sentences and their meanings and respond accordingly.

(6) Handwriting Recognition: The software reads the text written on paper by a pen or on screen by a stylus. It can recognize the shapes of the letters and transform into text.

(7) Intelligent Robots: Such robots can perform the tasks provided by a human. Due to presence of sensors, they detect physical data from the real world such as light, sound, heat, temperature, movement and pressure. They have multiple sensors and huge memory. They can adapt to the new environment.

History of Artificial Intelligence

(1) In 1923, a play named "Rossum's Universal Robots" (RUR) by Karel Capek's opens in London, first used the word "robot" in English.

(2) In 1943, the seminal paper by McCulloch and Pitts on artificial neurons provided the motivation for early neuron network research.

(3) In 1945, Isaac Asimov, a Russian science-fiction writer coined the term Robotics in his novel Runaround.

(4) In 1950, Turing Test was introduced by Alan Turing, for the evaluation of intelligence and published Computing Machinery and Intelligence. Claude Shannon published Detailed Analysis of Chess Playing as a search.

(5) In 1956, John McCarthy coined the term Artificial Intelligence and demonstrated the first running AI program at Carnegie Mellon University.

(6) In 1958, John McCarthy invented LISP programming language for AI.

(7) In 1964, the dissertation at MIT presented by Danny Bobrow's showed that computers can understand natural language, solve algebra word problems correctly.

(8) In 1965, ELIZA was built by Joseph Weizenbaum at MIT; it was an interactive problem that carries on a dialogue in English.

(9) In 1969, Shakey was the robot, equipped with locomotion, perception, and problem solving was developed by Scientists at Stanford Research Institute.

(10) In 1973, Freddy, the famous Scottish robot, capable of using vision to locate and assemble models was developed by the Assembly Robotics group at Edinburgh University.

(11) In 1979, Stanford Cart was the first computer-controlled autonomous vehicle came.

(12) In 1985, Aron: the drawing program was created demonstrated by Harold Cohen.

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(13) In 1997, Garry Kasparov was beaten by the Deep Blue, chess playing computer developed by IBM.
(14) In 2000, Interactive robot pets become commercially available. MIT shows Kismet, a robot with a face that expresses emotions. The robot Nomad explores remote regions of Antarctica and locates meteorites.

Future Advances in Areas of Artificial Intelligence
(1) Significant developments in machine learning
(2) Development of Case-based reasoning
(3) Multi-agent planning and scheduling
(4) Data mining, Web Crawler
(5) Natural language and understanding and translation.
(6) Vision, Virtual Reality
(7) Gaming

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