AN OVERVIEW OF APPLICATIONS ON ARTIFICIAL INTELLIGENCE

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ABSTRACT

Intelligence is a human enquiry of both natural and artificial intelligence at the reductive embodying levels of neural, cognitive, functional, and logical from the bottom up. The taxonomy and nature of intelligence. It analyzes roles of information in the evolution of human intelligence, and the needs for logical abstraction in modeling the brain and natural intelligence. A formal model of intelligence is developed known as the Generic Abstract Intelligence Mode (GAIM), which provides a foundation to explain the mechanisms of advanced natural intelligence such as thinking, learning, and inferences. A measurement framework of intelligent capability of humans and systems is comparatively studied in the forms of intelligent quotient, intelligent equivalence, and intelligent metrics. On the basis of the GAIM model and the abstract intelligence theories, the compatibility of natural and machine intelligence is revealed in order to investigate into a wide range of paradigms of abstract intelligence such as natural, artificial, Machin able intelligence, and their engineering applications.

INTRODUCTION

This technology is growing very fast, and we are getting in touch with different new technologies day by day. Here, one of the booming technologies of computer science is Artificial Intelligence which is ready to create a new revolution in the world by making intelligent machines. The Artificial Intelligence is now all around us. It is currently working with a variety of subfields, ranging from general to specific, such as self-driving cars, playing chess, proving theorems, playing music, Painting, etc.

AI is one of the fascinating and universal fields of Computer science which has a great scope in future. AI holds a tendency to cause a machine to work as a human. Artificial Intelligence is composed of two words Artificial and Intelligence, where Artificial defines "man-made," and intelligence defines "thinking power", hence AI means "a man-made thinking power.""It is a branch of computer science by which we can create intelligent machines which can behave like a human, think and able to make decisions".

"Artificial Intelligence exists when a machine can have human based skills such as learning, reasoning, and solving problems With Artificial Intelligence you do not need to preprogram a machine to do some work, despite that you can create a machine with programmed algorithms which can work with own intelligence, and that is the awesomeness of AI.It is believed that AI is not a new technology, and some people says that as per Greek myth, there were Mechanical men in early days which can work and behave like humans.

OVERVIEW OF AI

According to the father of Artificial Intelligence, John McCarthy, it is "The science and engineering of making intelligent machines, especially intelligent computer programs".

Artificial Intelligence is a way of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the intelligent humans think.AI is accomplished by studying how human

brain thinks, and how humans learn, decide, and work while trying to solve a problem, and then using the outcomes of this study as a basis of developing intelligent software and systems.

Philosophy of AI

Thus, the development of AI started with the intention of creating similar intelligence in machines that we find and regard high in humans.

Goals of AI

To Create Expert Systems −The systems which exhibit intelligent behavior, learn, demonstrate, explain, and advice its users.

To Implement Human Intelligence in Machines − Creating systems that understand, think, learn, and behave like humans.

Contributes to AI

Artificial intelligence is a science and technology based on disciplines such as Computer Science, Biology, Psychology, Linguistics, Mathematics, and Engineering. A major thrust of AI is in the development of computer functions associated with human intelligence, such as reasoning, learning, and problem solving.

Components of AI

The programming without and with AI is different in following ways −

ProgrammingwithoutAI

AcomputerprogramwithoutAIcananswerthespecificquestionsitismeanttosolve. Modificationintheprogramleadstochangeinitsstructure.   Modificationisnotquickandeasy. Itmayleadtoaffectingtheprogramadversely.

Programming with AI

AcomputerprogramwithAIcananswerthegenericquestionsitismeanttosolve. QuickandEasyprogrammodification.

Applications of AI

AI has been dominant in various fields such as −

- ✓ **Gaming**− AI plays crucial role in strategic games such as chess, poker, tic-tac-toe, etc., where machine can think of large number of possible positions based on heuristic knowledge.

- ✓ **Natural Language Processing**− It is possible to interact with the computer that understands natural language spoken by humans.

- ✓ **Expert Systems**− There are some applications which integrate machine, software, and special information to impart reasoning and advising. They provide explanation and advice to the users.

- ✓ **Vision Systems**−These systems understand, interpret, and comprehend visual input on the computer. For example,

- A spying aero plane takes photographs, which are used to figure out spatial information or map of the areas.

- Doctors use clinical expert system to diagnose the patient.

- Police use computer software that can recognize the face of criminal with the stored portrait made by forensic artist.

- ✓ **Speech Recognition**− Some intelligent systems are capable of hearing and comprehending the language in terms of sentences and their meanings while a human talks to it. It can handle different accents, slang words, noise in the background, change in human's noise due to cold, etc.

- ✓ **Handwriting Recognition**−The handwriting recognition 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 convert it into editable text.

- ✓ **Intelligent Robots**− Robots are able to perform the tasks given by a human. They have sensors to detect physical data from the real world such as light, heat, temperature, movement, sound, bump, and pressure. They have efficient processors, multiple sensors and huge memory, to exhibit intelligence. In addition, they are capable of learning from their mistakes and they can adapt to the new environment.

History of AI

Here is the history of AI during 20th century −

Year   Milestone / Innovation

1923   Karel Čapek play named "Rossum's Universal Robots" (RUR) opens in London, first use of the word "robot" in English.

1943   Foundations for neural networks laid.

1945   Isaac Asimov, a Columbia University alumni, coined the term Robotics.

1950   Alan Turing introduced Turing Test for evaluation of intelligence and published Computing Machinery and Intelligence. Claude Shannon published Detailed Analysis of Chess Playing as a search.

1956   John McCarthy coined the term Artificial Intelligence. Demonstration of the first running AI program at Carnegie Mellon University.

1958   John McCarthy invents LISP programming language for AI.

1964   Danny Bobrow's dissertation at MIT showed that computers can understand natural language well enough to solve algebra word problems correctly.

1965   Joseph Weizenbaum at MIT built ELIZA, an interactive problem that carries on a dialogue in English.

1969   Scientists at Stanford Research Institute Developed Shakey, a robot, equipped with locomotion, perception, and problem solving.

1973   The Assembly Robotics group at Edinburgh University built Freddy, the Famous Scottish Robot, capable of using vision to locate and assemble models.

1979   The first computer-controlled autonomous vehicle, Stanford Cart, was built.

1985   Harold Cohen created and demonstrated the drawing program, Aaron.

1990   Major advances in all areas of AI −

- Significant demonstrations in machine learning
- Case-based reasoning
- Multi-agent planning
- Scheduling
- Data mining, Web Crawler
- natural language understanding and translation
- Vision, Virtual Reality
- Games

1997   The Deep Blue Chess Program beats the then world chess champion, Garry Kasparov.

2000   Interactive robot pets become commercially available. MIT displays Kismet, a robot with a face that expresses emotions. The robot Nomad explores remote regions of Antarctica and locates meteorites.

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