ARTIFICIAL INTELLIGENCE »

CONTENTS

- Introduction
- Definition
- Applications of AI
- Advantages and Disadvantages
- Growth and Future of AI
- Conclusion
- Bibliography

Introduction

- Intelligence : "The capacity to learn and solve problems."

- Artificial Intelligence : Artificial Intelligence (AI) is the simulation of human intelligence by machines.
    1) The ability to solve problems.
    2) The ability to act rationally.
    3) The ability to act like humans.

- The central principles of AI include :
    1) Reasoning, knowledge, planning, learning and communication.
    2) Perception and the ability to move and manipulate objects.
    3) It is the science and engineering of making intelligent
        machines, especially intelligent computer programs

Definition

- Computers with the ability to mimic or duplicate the functions of the human brain.

- Artificial Intelligence is the intelligence of machines and the branch of computer science which aims to create it.

- "The branch of computer science that is concerned with the automation of intelligent behaviour" (Luger and Stubblefield. 1993).

History of AI

History of Artificial Intelligence

1950 — The time when it all started.

1955 — John McCarthy coined term 'Artificial intelligence'.

1974 — Computers became faster & affordable

1980 — The year of Artificial Intelligence.

2000 — Landmark of AI establishment achieved.

Application of AI in Medicine

➤ A medical clinic can use AI systems to organize bed schedules, make a staff rotation and provide medical information.

➤ AI has also application in fields of cardiology (CRG), neurology (MRI), embryology (sonography), complex operations of internal organs, etc

➤ It also has an application in Image guided surgery and image analysis and enhancement.

Applications of AI in Music

➤ Scientists are trying to make the computer emulate the activities of the skillful musician.

➤ Composition, performance, music theory, sound processing are some of the major areas on which research in music and AI are focusing on.
   Eg : chucks, smartmusic, etc.

Application of AI in Telecommunications

➢ Many telecommunications companies make use of heuristic search in the management of their workforces.

➢ For example BT Group has deployed heuristic search in a scheduling application that provides the work schedules of 20000 engineers.

Robotics and AI

➤ A ROBOT is a mechanical or virtual artificial agent, usually an electro mechanical machine that is guided by a computer program or electronic circuitry.

➤ Robots can be autonomous or semi-autonomous.

➤ A robot may convey a sense of intelligence or thoughts of its own.

Application of AI in Gaming

➤ In the earlier days gaming technology was not broadened.

➤ Physicist Willy Higinbotham created the the first video game in 1958.

➤ It was called "Tennis For Tow" and was oscilloscope.

➤ But, now AI technology has become vast and standard has also been increased.

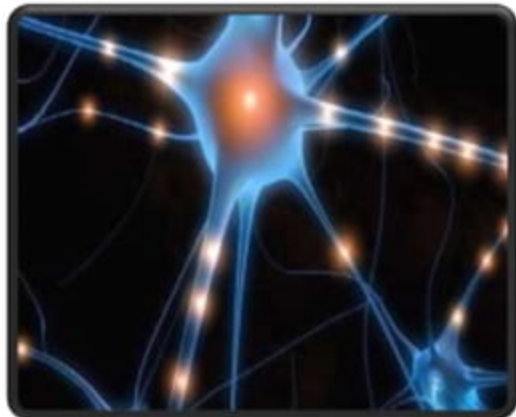➤ For Eg : Sudoku, Fear, Fallout, etc

Applications of AI in Banking :

> Organize operations, invest in stocks, and manage properties.

> In August 2001, robots beat humans in a simulated financial trading competition.

> Some other applications include loan investigation, ATM design, safe and fast banking, etc.

Some Other Applications :

- Credit granting
- Information management and retrieval
- AI and expert systems embedded in products
- Plant layout
- Help desk and assistance
- Employee performance evaluation
- Shipping
- Marketing
- Warehouse optimization
- In space workstation maintainance
- Satellite controls
- Network developments
- Nuclear management

Artificial Intelligence :

Advantages :

- More powerful and more useful computers.

- New and improved interfaces.

- Solving new problems.

- Better handling of information.

- Relieves information overload.

- Conversion of information into knowledge.

Disadvantages :

- Increased costs

- Difficulty with software development – slow and expensive

- Few experienced programmers

- Few practical products have reached the market as yet.

Future of AI

▸ Looking at the features and its wide application we may definitely stick to artificial intelligence. Seeing at the development of AI is it that the future world is becoming artificial.

▸ Biological intelligence is fixed, because it is an old, mature paradigm but the new paradigm of non-biological computation and intelligence is growing exponentially.

▸ The memory capacity of the human brain is probably of the order often thousand million binary digits. But most of this is probably used in remembering visual impressions, and other comparatively wasteful ways.

▸ Hence we can say that as natural intelligence is limited and volatile too world may now depend upon computers for smooth working.

Humanoid Robot and AI

‣ Sophia is a social humanoid robot developed by Hong Kong based company Hanson Robotics.

‣ Sophia was activated on April 19,2015.

‣ She made her first public appearance at South by Southwest Festival in mid–March 2016 in United States.

‣ In October 2017 Sophia became a Saudi Arabian citizen, the first robot to receive citizenship in any country.

The Explosive Growth of AI

Since AI is applicable in almost all fields, they become the needs of our life. It is the reason behind the explosive growth of AI.

The growth can be divided into two parts based on the application area and what purpose they serve, they are as follows:

- ❑ Growth in positive sense (useful to society)
- ❑ Growth in negative sense (harmful to society)

Conclusion :

▸ Till now we have discussed in brief about Artificial Intelligence.

▸ We have discussed some of its principles, its applications, its achievements etc.

▸ The ultimate goal of institutions and scientists working on AI is to solve majority of the problems or to achieve the tasks which we humans directly can't accomplish.

▸ It is for sure that development in this field of computer science will change the complete scenario of the world. Now it is the responsibility of creamy layer of engineers to develop this field.

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Thank You !!