AI-2

## 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 aeroplane 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 −

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| **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. |