

# Overview of Artificial Intelligence

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**Abstract** - Now a day's Artificial Intelligence is very important in Computer Science. Using AI when we are working in different processes the result is Accurate. 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. The AI uses some applications that integrate machine, software and special information to import reasoning and advising, is called Expert System. It also uses chess, poker, tic-tac-toe, where machine can think large no of possible positions based on heuristic knowledge.

**keywords** - AI, intelligence, deep learning, machine learning

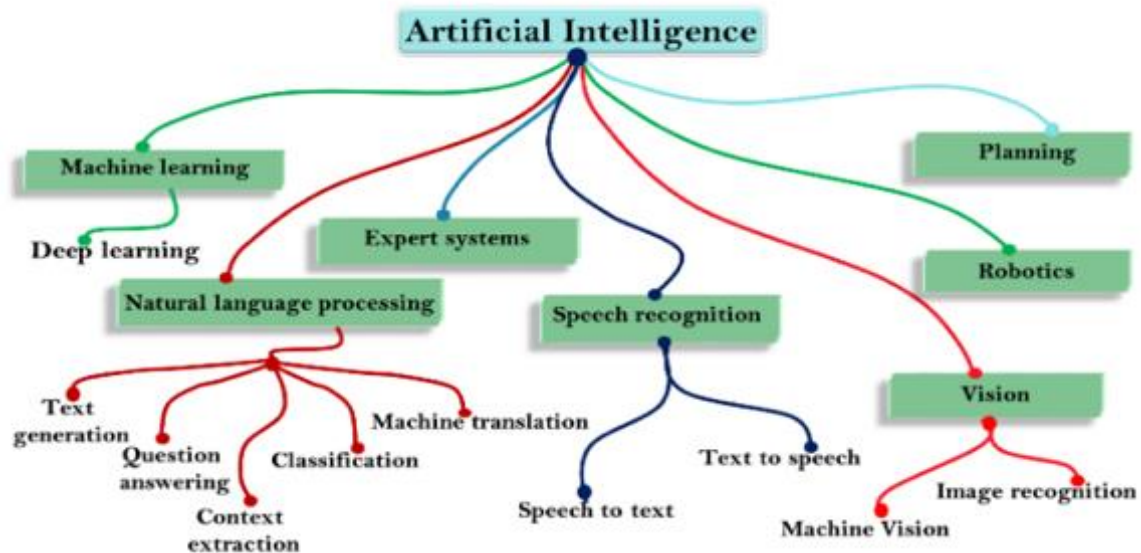
## I. INTRODUCTION

Intelligence is a system to calculate reason, perceive relationships and analogies, learn from experience, store and retrieve information from memory, solve problems, comprehend complex ideas, use natural language fluently, classify, generalize, and adapt new situations. Artificial Intelligence is the development of computer systems that are able to perform tasks that which require human intelligence. Examples of these tasks are visual perception, speech recognition, decision-making, and translation between languages. Artificial Intelligence is a branch of science that deals with helping machines to find solutions to complex problems in a human like manner. It is way the study of how to make computers do things at which, at the moment, people are better. It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence.

## II. WHY AI

- **AI automates repetitive learning and discovery through data:** AI is robotic automation, instead of manual task; AI performs frequent, high-volume, computerized tasks reliably and without fatigue. For this type of automation, human inquiry is still essential to set up the system and ask the right questions.
- **AI adds intelligence to existing products:** Most of the products we are using is improved with AI capabilities, Example Siri was added as a feature to a new generation of Apple products. Automation, conversational platforms, bots and smart machines can be combined with large amounts of data to improve many technologies at home and in the workplace, from security intelligence to investment analysis.
- **AI analyzes more and deeper data:** using neural networks that have many hidden layers. Building a fraud detection system with five hidden layers was almost impossible a few years ago. All that has changed with incredible computer power and big data. You need lots of data to train deep learning models because they learn directly from the data. The more data you can feed them, the more accurate they become.
- **AI achieves incredible accuracy:** Through deep neural networks – which was previously impossible. For example, your interactions with Alexa, Google Search and Google Photos are these all are based on deep learning, they keep your data more accurate and the more we use them. In the medical field to find cancer on MRIs with the same accuracy as highly trained radiologists the AI techniques uses deep learning, image classification and object recognition.

## III. AI



#### A. Machine Learning:

It is a technique of parsing data, learn from that data and then apply what they have learned to make an informed decision. For example, Amazon using machine learning to give better product choice recommendations to their costumers based on their preferences. Deep learning networks do not require human intervention as the nested layers in the neural networks put data through hierarchies of different concepts, which eventually learn through their own errors. However, even these are subject to flawed outputs if the quality of data isn't good enough. Example of deep learning, Suppose we have a flashlight and we teach a machine learning model that whenever someone says "dark" the flashlight should be on, now the machine learning model will analyze different phrases said by people and it will search for the word "dark" and as the word comes the flashlight will be on but what if someone said "I am not able to see anything the light is very dim", here the user wants the flashlight to be on but the sentence does not the consist the word "dark" so the flashlight will not be on. That's where deep learning is different from machine learning. If it were a deep learning model it would on the flashlight, a deep learning model is able to learn from its own method of computing.

#### B. Expert Systems:

In artificial intelligence, an expert system is a computer system that emulates the decision-making ability of a human expert. Expert systems are designed to solve complex problems by reasoning through bodies of knowledge, represented mainly as if-then rules rather than through conventional procedural code. In the healthcare services, Expert Systems are used for diagnosis and efficiency of the system.

#### C. Speech Recognition:

Speech recognition is a interdisciplinary subfield of computational linguistics that develops methodologies and technologies that enables the recognition and translation of Spoken language into text by computers. It is also known as automatic speech recognition, computer speech recognition or speech to text. The user communicates with the application through the appropriate input device i.e. a microphone. The Recognizer converts the analog signal into digital signal for the speech processing. A stream of text is generated after the processing. This source-language text becomes input to the Translation Engine, which converts it to the target language text.

#### D. Vision:

Computer Vision is the science and technology for building artificial systems that obtain information from images or multi-dimensional data. However, a significant part of AI deals with planning for system/machine which can perform mechanical actions. Some examples are scene reconstruction, event detection, video tracking, object recognition, 3D pose estimation, learning, indexing, motion estimation, and image restoration.

#### E. Robotics:

AI Robots are the artificial agents acting in the real-world environment. Artificial Intelligence Robot is aimed at manipulating the objects by perceiving, picking, moving, and destroying it. Robotics is a branch of AI, which is composed of different branches and application of robots. Few examples of robotics are- ASIMO  
Boston dynamics

#### F. Planning:

The planning in Artificial Intelligence is about the decision making tasks performed by the robots or computer programs to achieve a specific goal. The execution of planning is about choosing a sequence of actions with a high likelihood to complete the specific task.

#### G. Machine Learning:

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.

#### IV. TYPES OF ARTIFICIAL INTELLIGENCE:

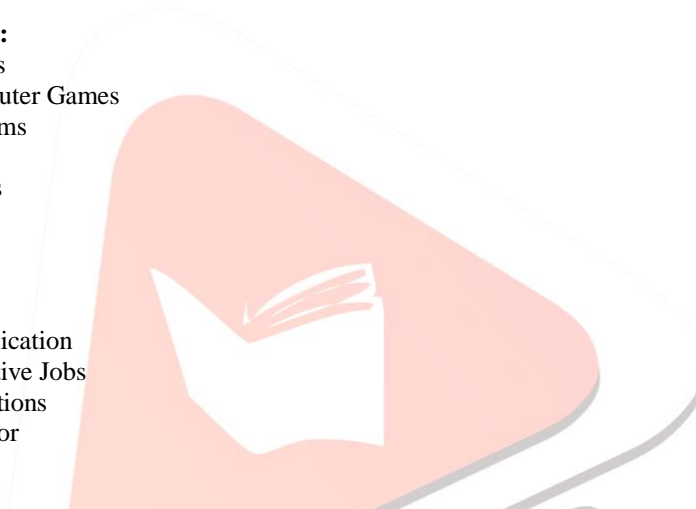
1. **Weak AI:** Weak artificial Intelligence is made to respond to specific situations, but can not think for themselves. Is an approach to artificial Intelligence research and development with simulation of human function. Example: In a computer game that act believably within the context of their game character, but are unable to do anything beyond that.
2. **Strong AI:** It is a machine Intelligence equal to human intelligence. Strong AI include the ability to reason, solve puzzles, make judgments, plan, learn and communicate.  
For example, when you are talking to a human, you can only assume what someone's response will be.

#### V. REAL LIFE EXAMPLES OF AI:

- Self Driving Cars
- Human vs Computer Games
- Navigation systems
- ASIMO
- Boston dynamics

#### VI. Benefits Of AI:

- 24/7 Availability
- Day to Day Application
- Handling Repetitive Jobs
- Medical Applications
- Reduction of Error
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#### VII. APPLICATION OF AI:

##### 1. Diagnosis:

Medical diagnosis is the process of determining which disease or condition explains a person's symptoms and signs. It is most often referred to as diagnosis with the medical context being implicit. The information required for diagnosis is typically collected from a history and physical examination of the person seeking medical care. Often, one or more diagnostic procedures, such as medical tests, are also done during the process. Sometimes posthumous diagnosis is considered a kind of medical diagnosis

##### 2. Electronic Trading Platforms

In finance, an electronic trading platform also known as an online trading platform, is a computer software program that can be used to place orders for financial products over a network with a financial intermediary. Various financial products can be traded by the trading platform, over a communication network with a financial intermediary or directly between the participants or members of the trading platform. This includes products such as stocks, bonds, currencies, commodities, derivatives.

##### 3. Robot Control:

Robot control is the study and practice of controlling robots.

##### 4. Remote Sensing:

Remote sensing is the acquisition of information about an object or phenomenon without making physical contact with the object and thus in contrast to on-site observation, especially the Earth. Remote sensing is used in numerous fields, including geography, land surveying and most Earth science disciplines (for example, hydrology, ecology, meteorology, oceanography, glaciology, geology); it also has military, intelligence, commercial, economic, planning, and humanitarian applications.

##### 5. Chatbots:

In particular, are always on, delivering smart and flexible analytics through conversations on mobile devices using standard messaging tools and voice-activated interfaces. This dramatically reduces the time to collect data for all business

users, thereby accelerating the pace of business and streamlines the way analysts use their time, preparing companies for the growing data needs of the near future

**6. Artificial Intelligence in ecommerce:**

AI provides a competitive edge to e-commerce businesses and is becoming readily available to companies of any size or budget. Leveraging machine learning, AI software automatically tags, organizes and visually searches content by labeling features of the image or video.

**7. Intelligent Cyber security:**

In regard to cyber security, Artificial Intelligence is making great strides. Although AI is considered to be in its infancy in cyber security and cannot always effectively address all issues, it works successfully in data protection. AI allows companies to detect vulnerabilities or anomalous user behavior in such business applications as ERP or Financial systems.

**8. Artificial Intelligence in Logistics and Supply Chain:**

When combined with customer data and analytics, physical artificial intelligence removes friction from the customer experience. Artificial intelligence empowers businesses to act on consumer data to drive improvements throughout many areas of supply chain operations. Mobile technology and the “Uberization” of things have made consumers hungry for AI.

**9. Streamlined Manufacturing with AI:**

For most customers when it comes to AI or Machine Learning, the magic happens when vast amounts of data can be streamed at milliseconds from the machine and process data of various databases. This provides actionable insights that can help these customers reduce non-productive downtime, predict failures or build a “golden batch” that can be benchmarked across all production lines.

**10. Casino/Hotels/Integrated Resorts:**

AI can help hotels/casinos discover customer segments that they may not realize were there. Which customers want to be near the pool, which ones need three morning papers before they can tackle the day. Armed with this kind of information, hotels can understand what matters the most to its guests at the individual level, enabling them to anticipate their guest’s needs before even the guests are aware of them

**VIII.CONCLUSION:**

Artificial Intelligence is always gives us with the new ideas, topics, innovations, products etc.AI is still not implemented as the films representing it(i.e. intelligent robots),however there are many important tries to reach the level and to compete in market, like something the robots that they show in T. V. Artificial Intelligence is an emerging and most advance field and very important. It has provided mankind a powerful tool, with efficient and intelligent use and deployment and Artificial Intelligence we can achieve a better world. but as the every coin has two sides so AI has darker sides also. They may become so advanced that they can replace human and this is the greatest threat to mankind.

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