

# Comparative Study of Artificial Intelligence

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## Abstract

This paper is based on the development and application of Artificial Intelligence (AI). Artificial Intelligence (AI) is based on creating machines that can show intelligent behavior like a human being. The ability to create intelligent machine is area of interest of human being since ancient times, with progression in AI technologies, the smart machine is becoming reality in today's world. With the advent of AI techniques researcher becomes able to create machine that can perform task that are required intelligence or reasoning power like human beings. Find out how the military is applying AI logic to its hi-tech systems, and how in the near future Artificial Intelligence may impact our lives. Intelligence has been defined in many different ways- including abstract thought, reasoning, knowledge retaining, emotional knowledge that are mainly found in human beings but sometimes has also been observed in animals and plants. Artificial intelligence is programming intelligence feature found in human beings and animals into machine by using programming tools and techniques.

**Keywords:** AI.

## 1. Introduction

Artificial intelligence techniques enable machine to solve complex problems dealing with wider areas of real world in human like fashion. This generally involves features of human intelligence applying them to real world problems in systematic manners to find the solution of problems with the help of machine. Approach to solve the problem may be flexible or inflexible depending upon the requirements established. AI is the inter disciplinary branch of computer science having associations with other fields such as Math, Psychology, Philosophy and many more branches dealing with the real world. With the help of AI the developer can combine knowledge from various fields and by using this knowledge and converting these knowledge into rule based by use of programming techniques we were able to create an artificial intelligent being. With the help of communication technologies world become smaller and national and international societies are working with close cooperation for the development of various technologies. AAAI also undertook many steps to increase public understanding of artificial intelligence. This society has contributed in improving teaching and training of AI practitioners, and provides assistance to various funders regarding the potential of current AI developments and future directions.

## 2. Applications of AI

Artificial Intelligence in its various forms like expert system is used to solve the complex problems in many industries that are beyond the human abilities. Artificial intelligence is used in various industries for making their operation smooth and efficient. Artificial intelligence technologies used for combining the accuracy and efficiency of machines with the human reasoning by using programming language and solve the problems that is complex in nature.

**Finance:** Artificial Intelligence techniques are for analyze financial data and the result of analysis is used to predict the trends in stock market. Artificial intelligence is used for fraud detection, credit risk scoring and churn prediction.

**HealthCare:** Artificial Intelligence main used in healthcare is accurate diagnosis of the patients. With advances in AI technologies robotics machines are used to perform operations that need high degree of accuracy with the assistance of doctors. Thus with the help of AI techniques diagnosis of patient are done accurately and also AI techniques are used to reduce the work of already overloaded medical practioners.

**Data Security:** Artificial Intelligence is used for data security. With the help of Artificial Intelligence techniques bug in the software and cyber attack can be detected. Platform like AEG bot are used to determine software bugs and cyber attack.

**E-Commerce:** Artificial Intelligence is techniques are used by various E-commerce sites which help their customers to shop the product with the parameters matching their choice such as brand, color, size etc. AI enabled customer assistance application is available in many of E-commerce websites.

**Heavy Industries and Space:** Robotics and cybernetics have taken a leap combined with artificially intelligent expert systems. with the help of Artificial enabled machine industries are handling task that are high precision and task which are complex in nature or hazardous for handling human beings such as handling radioactive material. AI driven system are used to match pattern with historical events and predict the future outcomes which help in informed decision making beneficial for many industries.

**Gaming:** To simulate human player in games Artificial Intelligence is used. With the help of Artificial Intelligence strategic games can be played very easily. The major uses of Artificial Intelligence in game development is to defining a way a computer opponent behaves for which AI enabled systems need to think of a large number of possible places or option available to them.



**Travel and Navigation:** AI powered travel assistance is used by large no usurers to search local landmarks. With the help of chatbots travel industry interact with customers for travel recommendations, better booking prices, and good response time. AI enabled Mapping provide essential information about the location of destination and also AI used routing algorithms to find optimal route that has been taken by traveler to reach their destination by bus or car etc.

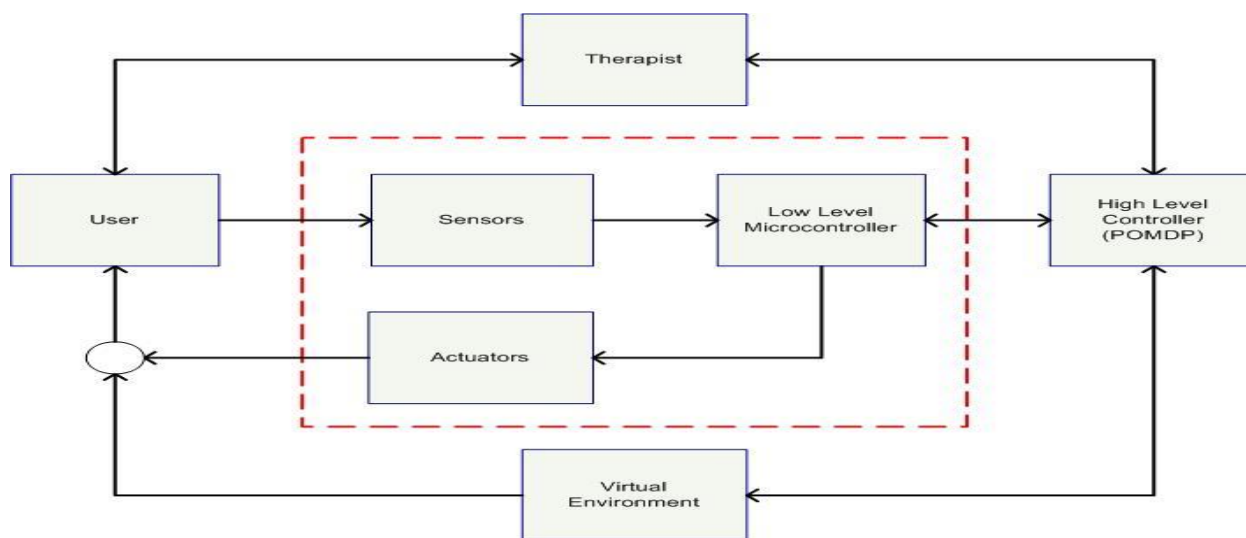
**Smart home Devices:** Smart home devices that are in your home use AI techniques to learn your behavior and provide you smother experience as much as possible. Smart light are examples of smart devices that can change intensity and color based on time. Temperature can be adjusted by smart home devices by using thermostat based on user preferences.

### 3. Goals of artificial Intelligence

The goal of artificial Intelligence is to develop a technology

1. Intelligent behavior by simulated persons or other actors in a computer game.
2. Mobile robots in hostile or dangerous environments that behave intelligently.
3. Intelligent responses to user requests in information search systems.
4. Process control systems that supervise complex processes and that are able to respond intelligently.
5. Intelligent execution of user requests in the operating system and the basic services standard computers.
6. One of the most important goals of Artificial Intelligence is to create Expert Systems which will show intelligent behavior and work on the bases of rule based system and gives advice to its users.
- 7) Inculcate human like intelligence in the machine is also goal of the Artificial Intelligence

### 4. Block Diagram of Artificial Intelligence



The block diagram in Figure 1 depicts the overall intelligent haptic robotic system, representing three research and development focus areas, consisting of a hardware device, an artificial intelligence controller, and a virtual reality user interface.

### 5. The Advantages for Artificial Intelligence (AI)

- **Reduction of Human Error:** Artificial Intelligence is used to take Decisions that are based on previously gathered information by applying a certain set of algorithms. so there are very little chances of errors and accuracy can be reached with the greater degree of precision.
- **Takes risks instead of Human:** AI enabled machines like Robot can do risky things for us which in term is very risky when performed by the human beings. Ai enabled machine can be used for going to mars and some other risky activities like exploration of Oil, defusing bomb and handling radioactive material etc.

- **Useful in Repetitive Jobs:** By using Artificial Intelligence enabled system can enhance productivity of the system by handling Repetitive Job with the help of AI enabled system. By handling these tasks to Artificial Intelligence enabled machines we can shift these tasks from human being and can increase their productivity and creativeness.
- **Digital Assistance:** Artificial intelligence enabled systems are used now a day for providing digital Assistance. Customer often Chat with the AI enabled machine about the product they are looking for without even having the knowledge that they are chatting with human beings or a human beings.
- **Faster Decision:** AI enabled machines with the help of other technologies can be used take decision faster than other than a human. AI enabled machines can perform those work for which it is to be programmed without analyze emotional and practical factors so in certain type of situations they are found very useful as compared to human beings.
- **Handle Low level tasks:** AI enabled system is used to handle low level task in our daily life like cleaning the floor of our homes/offices. Low level tasks are handled by AI enabled machine which let human beings to focus on more high level tasks that require genuine Intelligence

## 6. The Disadvantages for Artificial Intelligence (AI)

- **High Cost of Operations:** with the advances in technologies software and hardware used with the AI enabled machines needed to update frequently as per the latest requirements and also with repairing and maintenance cost of these complex machines the overall cost for operations increases.
- **Unemployment:** By shifting the majority of repetitive tasks to AI enabled machines the problem of unemployment arises. Most of the organizations are looking for replacing human beings with AI enabled machine which leads to serious problem of Unemployment.
- **No Emotions:** AI enabled machine can work more efficiently as compared to human beings but they cannot connect with human being to for team concept which is an essential attributes when comes to Team Management. AI enabled machines are not able to make attachment with human, and may sometime harmful for users if not handled properly.
- **No Original Creativity:** AI enabled machines are not create and imaginative. These machines potential cannot be matched with human intelligence and creativity.

## 7. Core working Area of Artificial Intelligence:

These are some core Area or Key area of interest of Artificial Intelligence.

- **Machine Learning:** Artificial Intelligence is widely used in machine learning. AI enabled machines are used to perform real world task by easily collecting, analyzing and processing data from various sources. AI enabled machines with the help of machine learning can take decision without the intervention of human. Many organizations rely on machine learning to improve user experience.
- **Deep Learning:** Deep learning techniques work on a lot of data and create business scenarios and solve problems that are complex in nature. Some of areas where deep learning is yet to be fully explored are recognition and classification of hand written notes and self driving cars.
- **Natural Language processing:** Natural language processing is considered as the future of business. Interaction with human in natural language can transform the way business can be done. With the help of

natural language processing various form data text, audio, and video can be analyzed and used to bring improvements in field of data science.

- **Robotics:** Robotics is most promising area of AI. Engineers are exploring techniques that enable robots to behave like humans, interact like humans and think like humans.
- **Neural Network and Fuzzy logic:** Most processes are so complex that they can no longer control with traditional binary logic. Fuzzy logic Controller are widely used especially in system that contains unstructured information and more complex mechanisms to solve problems.
- **Decision Support System:** Artificial Intelligence is widely used in making Decision Support System. Some of examples of decision support systems are application used in stock market that will give you suggestion about your investment based on the market conditions.

## 8. Conclusion:

Artificial Intelligence is still a growing technology. Artificial Intelligence will surely surpass human in some of the domains. To achieve full potential of this technology certain issues have to be addressed. One of the major issue to be addressed in knowledge representation and other issue is regarding knowledge manipulation. Every new invention will have both advantages and disadvantages, but we have to concentrate more on positive side of technology to create a better world. With the use of AI enabled machine we will improve the way we think and we can achieve new horizons in various fields like space, ocean and Industry. By using AI enabled machines near future things will happen very rapidly. Artificial Intelligence is going to bring rapid changes and innovation in the life of human being

## References:

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