

## **Tutorial Sheet-1**

### 1. Discuss various applications of AI?

Ans – Below are some of the applications of AI

- Journalism - In the present computerized world, perusing web journals and articles has turned into a typical practice for a large portion of us yet barely do we understand that some of them are really composed by machines. Despite the fact that it can't be utilized for writing top to bottom articles yet the basic reports that don't require much examination can be effectively arranged by AI.

Organizations like AP and Yahoo! are utilizing AI to get ready basic reports identified with games and decisions that would take a ton of time if done physically. As indicated by Automated Insights which presented Wordsmith, numerous information driven elements including land and web-based business are utilizing this stage.

- Entertainment - Use of Artificial Intelligence is quite popular in the entertainment industry. Whether it's the video games or music apps, we all are well aware of the concept. Talking about games, the idea is not new and is being utilised from the very beginning but today it has just grown exponentially. Games like Middle Earth, Far Cry are known for imparting personalities to the characters where they find objects, shoot, take cover and do everything possible for victory.
- Online Retail Stores - With the introduction of online retail stores, people have started making the online purchase a habit which is quite at its peak right now. These websites also use artificial intelligence in certain ways like recommending the customers what to purchase depending upon his/her past purchases or items put in the search box. Another way is providing chat bots for seeking guidance or for solving queries. Reports say that AI is going to make shopping more personal for the shoppers and simplify things for the retailers. In the next few years, this technology will be playing a significant role in the retail industry. Well, it will be interesting to see what the future holds for the online retail stores.
- Banking and Finance - Owing to the increase in the amount of financial data, a lot of financial services have resorted to Artificial Intelligence. Robots are much quicker in analysing market data to forecast change in stock trends and manage finances as compared to the human counterparts. They can even use algorithms to offer suggestions to the clients involving simple problems. Similarly, banks are using AI to keep a track of the customer base, addressing their needs, suggesting them about different schemes and what not. Often when there is a suspicious transaction from the users' account, they immediately get a mail to confirm that it's not an outsider who is carrying out that particular transaction.

- Smartphones- The most common application of AI can be seen in our mobile phones in the form of Virtual Personal Assistants. Siri, Cortana, and Google Now are some very commonly used digital assistants that are found in iOs, Android and Windows phones. These applications collect information in order to interpret what is being asked by the user and then the required data is fetched to suit the user's preferences. There is a huge amount of learning involved on the part of these assistants and a lot of information is tracked to ensure efficiency.

## 2. Difference between

- Weak and strong AI
- Intelligence and Artificial Intelligence

Ans- a) Weak and strong AI

	Strong AI	Weak AI
Definition	The machine can actually think and perform tasks on its own just like a human being	The device cannot follow these tasks on their own but are made to look intelligent.
Functionality	Algorithm is stored by a computer program	Tasks are entered manually to be performed.
Examples	There are no proper examples for strong AI	An automatic or remote-control device.
Progress	Initial Stage	Advanced Stage

## b) Intelligence and Artificial Intelligence

Intelligence- Human intelligence is something natural, nothing is artificial in it. In all fields, intelligence is something differently perceived and differently acquired. More specifically, human intelligence is something related to the adaption of various other cognitive process in order to have specific environment. Due to which cognitive computing has emerged as a hot area of research these days. In human intelligence, the word "intelligence" plays a vital role because intelligence is with them all it's needs to think and make a step by step plan for performing certain tasks. It's a natural blessing that is with humans since their birth and no one can replace it except GOD.

Artificial Intelligence -Artificial intelligence is designed to add human like qualities in machines, e.g. robots are the most common example of it. Artificial intelligence major function is to make the robots to mimic or act like human beings. In short, we can say that it's basically working to make robots a good of copier of humans. Researchers are all time busy in making up a mind that can behave like a human mind, they are putting efforts in doing this task now a days. Similar to computers they are installing a hard disk in robots so that they can memorize things and can act like humans at specific situations. Weak AI is the thinking focused towards the development of technology gifted with carrying out pre-planned moves based on some rules and applying these to achieve a certain movement or

goal. Strong AI is emerging technology that can think and function same as like humans, not just imitating human behaviour in a certain area.

3. In the original Turing paper (1950), Alan Turing predicts that by the year 2000, a computer will have a 30% chance of passing a five-minutes Turing Test with an unskilled interrogator. What chance do you think a computer would have today?

Ans- The chances to pass original Turing Test with an unskilled interrogator will be close to 70%. Some of the problems are-

- We still haven't agreed on a set of rules regarding the AI's behaviour.
  - Human brain capacity reaches something like 2.5 petabytes (source). We still haven't found a way to store such a massive amount of data and developed algorithms capable of accessing such amount of data real time.
  - We still haven't perfected voice recognition and speech synthesis.
  - We still haven't found a proper way to test the intelligence
  - We still haven't been able to figure out everything happening in the human brain. We can't replicate something we still don't fully understand.
4. Examine the AI literature, to discuss whether the following tasks can currently be solved by computer. For infeasible tasks try to find out what the difficulties are:
- (a) Playing a decent game of bridge.
  - (b) Driving at the centre of the city.
  - (c) Buying a week's groceries from the web/market.
  - (d) Discarding and proving new mathematical theorems.
  - (e) Writing a funny story.
  - (f) Giving competent legal advice in a specialized area of law.
  - (g) Performing complex surgical operations.
  - (h) Translating Spoken English to Spoken Spanish in real time.

Ans-

- a) Yes, AI can play a decent game of bridge.
- b) Yes, AI can drive at the centre of the city, many of the companies are able to make self-driving cars one of them is tesla
- c) Yes, AI can buy a week's groceries from the web/market.
- d) No, AI cannot prove new mathematical theorems but ai is able to solve the theorems which are already solved.
- e) Yes, AI can write funny story.
- f) Yes, Ai can give competent legal advice in a specialized area of law.
- g) No, AI cannot perform complex surgical operations.
- h) Yes, I can do all the language translations.