# **Part I**

## Describe the following fundamental aspects of AI:

* [A]Use the table below to list the differences between AI, deep learning, and machine learning.

|  |  |  |
| --- | --- | --- |
| **AI** | **Machine Learning** | **Deep Learning** |
| AI is a is tyring to simulate human intelligence and to make computers be able to think and to learn like humans, AI aims to prosses and analyse, recognize patterns, make decisions and to solve problems in a way similar to human brain. | ML is a type of AI and it allows applications to analyse data and predict its outputs according to it, so it learns automatically from data and using algorithms it provides predicted outputs. | Deep learning is a type of ML, it can prosses and recognize complex patterns in pictures, sound, text. And it uses neural networks to solve complex problems. |

* What is Artificial Intelligence?

[B] AI is the ability for computers and machines to give human like capabilities like planning, learning and thinking.

AI have been far a long time one of man kind obsessions since it’s idea came out in 1956at a conference in Dartmouth, and between 1956 and 1974 there was a lot of investment and excitement in AI like the first example of intelligent system was the perceptron that was made by the psychologist Frank Rosenblatt in 1957 and it is the earliest form of neural networks and it was inspired by the biological neurons.

Unfortunately, a lot of people soon realized that we weren't really making advancements with AI. And the idea about AI died down for a few years.

Then, between 1980 and 1987, AI experienced another upsurge, when "If/then" logic was used to build an expert systems that will give some sort of reaction if you provide it with some kind of input and information.

And then we saw a big advancement when the world witnessed a powerful computer named Deep Blue defeat Gary Kasparov, the reigning world chess champion, in a match.

And there was another example when a challenge to make an autonomous car that would run a hundred miles and that challenge was beaten, so the excitement became real and we started using AI in a lot of things that it became integrated in our life and our studying, jobs for example like Chat GPT that has became our first move when trying to do something.

And it is keeping evolving more and more.

You need to define AI, discuss the history of intelligent systems, and discuss the reasons behind the evolution of AI systems nowadays.

* What are the important features of big data?

[C] They call the important features of big data the 5V’s that is (volume, veracity, variety, value, velocity)

The volume is the amount of data available.

the veracity indicates to how much is the data reliable in the case if inconsistencies and uncertainties in the data.

The verity is the different forms of data like structured and unstructured data.

The value is the data that is actually important and that is reliable and can be processed and analysed.

Velocity is the speed that the data is being collected in real time.

Traditional data is mostly known for being organized and structured, that makes the data easy to store and mange ,that analysis of traditional data is done by statical methods.

big data is far more complex and bigger for normal data processing software, big dat is also bigger in the 5V’s features of data over the traditional data.

|  |  |
| --- | --- |
| Big data | Traditional data |
| Extremely large data sets | Small to medium sized data sets |
| Structured, semi and unstructured data | Typically structures |
| Constantly changing | Static and is updated periodically |
| Complex and require special tools to analyse | Simple to manage and analyse |
| Has a lot of value | Lower value potential |

You need to define the features of big data and discuss how new types of data (e.g., images, videos, text) are different from traditional types.

## [D] Describe the difference between weak AI and strong AI?

|  |  |
| --- | --- |
| Strong AI | Weak AI |
| Preform intelligent functions and can do a wide range of tasks | It can only preform one task |
| Have the ability to learn and think and to preform like humans | The program is fixed so it has one function |
| It has conscious and logic and sense like humans | It does not have awareness or conscious |
| Examples: Siri, google assistance, chat gpt | It is currently fictional, but it was resembled in movies like in movie I, robot |

You need to define strong AI and weak AI and give examples of each type.

## Describe some of the areas of applications of AI systems used to solve real-world problems?

There are a lot of existing AI systems such as Siri that is a voice assistance in apple devices, it can respond to simple voice command such as put your favourite songs or open a video on YouTube or to call your friend.

Another example is AI applications is in games were you can play with and against AI characters that is programmed to play as if like another real world player is controlling them.

AI is also used in text generating applications such as chat gpt, that analysis you question and browse the web for you to find you answers

You need to describe existing AI systems, roles, and contributions in areas like healthcare, manufacturing, banking, entertainment, gaming, or any other application areas.

## Analyse the advantages and disadvantages of using AI in one of the areas of applications you mentioned in the previous question?

* Use the table below to list the advantages and disadvantages of a selected AI system. Advantages are positive things this system added to users and organizations, while disadvantages are risks and limitations of this AI system.

Talking about the AI that is used in chat gpt

|  |  |
| --- | --- |
| **Advantages** | **Disadvantages** |
| It makes researching much easier | People are becoming lazy and only counts on it |
| It gives you the resources of the output | There is a chance that what it writes might be wrong |
| You can give it commands to write what you want | Some people are using it for bad reasons |

## Investigate and analyse the security and ethical issues in your selected AI system?

We don’t know where is the data that is searched on it go.

It may change some answers to make me believe some thing that is not true for hidden reasons.

Is what I write using it considered mine and can they use it against me .

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## Discuss and analyse the technical challenges in your selected AI system?

It may be hard for Chad gpt to understand some people writing because of their spelling.

It might have a problem generating about something that is new or it has not been trained for yet.

Generating human like responses that seems natural.

Use bullet points to list and explain technical issues.

## Review implications of ethical and technical issues to both users and the organization?

Use bullet points to list and explain implications to users and organizations.

-the reliability and accuracy of the data that chat GPT generates still be incorrect.

-conversation with chat GPT may lead to using sensitive an secrete information that it can use to learn from it, and that may lead GPT to respond with someone else.

## References

You need to write the references here using Harvard style of referencing.

[A]<https://www.techtarget.com/searchenterpriseai/definition/machine-learning-ML>

[A]]<https://aws.amazon.com/what-is/deep-learning/>

[**B**]<https://www.europarl.europa.eu/news/en/headlines/society/20200827STO85804/what-is-artificial-intelligence-and-how-is-it-used>

[B]<https://youtu.be/G2KD6KmHuZ0>

[C]<https://www.geeksforgeeks.org/difference-between-traditional-data-and-big-data/>

[C]<https://www.javatpoint.com/big-data-characteristics>

[D]<https://www.analyticsvidhya.com/blog/2023/04/weak-ai-vs-strong-ai/>