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1. **What view of AI do you think it’s interesting and why**

Thinking rationally (the laws of thought approach); these laws govern the operation of the mind and is initiated in the field of logic. This view of artificial intelligence is more important because programs can be given more time and memory, take a description of a problem in a logic notation and find the solution to the problem if one exists.

1. **From the video playlist shared in the introduction, describe two positive and negatives of AI**

**Positives**

The chances of error are almost nil and accuracy is achieved.

Intelligent machines can replace human beings in many areas of work i.e. computing complex calculations

**Negatives**

Artificial intelligent machines cannot retrieve the enormous amount of data stored as humans

1. **To what extent are the following examples of artificial intelligence?**
2. **ATM machine**

This is a simple reflex agent since it responds to a given percept with pre-programmed response. Surveillance using uncanny vision. This involves human activity recognition.

1. **Recommender systems**

They assist in sorting through the vast amount of information that the internet can provide. They are artificially intelligent in that they function by taking in some type of user information such as preferred music artists and provide recommendations for a new item based user’s previous choices. The agent gives and receives information and the item is whatever entity is being rated and searched by the user.

1. **Automated answering machine**

There is conversion of caller’s message into a stream of bytes. A microcontroller digitizes the caller’s voice using an analogue-to-digital converter and stores it in low-power RAM. So let us say a caller leaves a 10-second message that may translate into 30000 bytes of digitized data. These bytes are stored at a specific address in RAM. To play the message back, the microcontroller reads 30000 bytes from RAM and plays them through a digital to analogue converter.

1. **Search engine**

An updated algorithm is used to separate high quality content from low quality spam. Artificial intelligence protects search engines from manipulation but it also helps them with their ranking algorithms. The ranking algorithm makes the engines create an optimal list from a set of possible outcomes learning from each of the variables over time.

1. **Give the PEAS description of the task environment of the following activities**
2. **Playing checkers with a clock**
3. P- Capture all opponent’s checkers, not to get your checkers captured, capture, as many opponent’s checkers as possible with a single move, do not break checkers rules.

E- Checkers, Checkers Board, The opponents, Checkers rules

A- Hands to move checkers, mind, and clock memory.

S- Camera, clock arm to move the checkers, Eyes.

1. **What characteristic does (a) above have?**

**Discrete-** the number of distinct and clearly defined precept’s and actions are limited since a player can only make one move at a particular time

**Deterministic**

Here the next state of environment is completely dependent by the current state of the environment

**Fully observable**

Here the agent’s sensors have access to the full view of the environment.

**Static**

In this scenario, the environment does not change as the agents are deliberating on their moves

1. **Imagine the task of learning how to skate under the guidance of an instructor, how would you fit this task into the model of a general learning agent**
2. The learning agent has two separate goals whereby the first one is to improve the outcome i.e. how good it performs the skating and the second one entails the time it uses to learn how to skate. The design of the learning element is affected by the representation of those components, the feedback available from the instructor and the prior information it has of the skating process mainly provided by the instructor.
3. **Watch the video below and explain briefly the working of DFS, BFS and UCS an AI perspective of what search is**

**Depth First Search**

The strategy it uses is to expand the deepest node first and the fringe is arranged in a LIFO stack. When working with DFS it is guaranteed to find a solution if one exists and it is guaranteed to find the least cost path

**Breadth first search**

Expanding the shallowest node first and the fringe is implemented using FIFO queue

**Uniform cost search**

Expanding the cheapest node first and the fringe is implemented using priority cumulative cost