Difference between human and machines in problem solving

Human steps in solving the issue at hand

Human intellect, in principle, defines a common, clear, and usually obvious path. Humans gather data. That data is processed by us. And they make decisions based on the information gathered. These three fundamental stages are described:

Input —> Processing —> Output

Detecting and seeing the objects all over the human living environment provides input. Raw information, like the appearance of sunlight or the smell of a rose, is collected by the organs - sight, hearing, smell, and so on. After that, the central nervous system analyzes the material and decides what measures to take. Information is developed, remembrances are recovered, and judgments and choices are formed during the preprocessing step. Depending on the data analyzed, output is then enacted. For example, one may overhear a siren and notice an ambulance in their side mirror, so immediately draw aside to allow it pass.

Humans must properly digest all of the information they receive in order to securely traverse the social world. This fundamental notion lies at the heart of human intellect, and it may be divided into three distinct segments:

Knowledge/Memory

People acquire information through consuming information and also cultural standards. Furthermore, memory enables us to remember and integrate knowledge from the past to current circumstances.

Inference/Decision

Humans make inferences and choices depending on the basic data they acquire, as well as their recollections and/or prior knowledge. Take, for example, a new dish someone tasted some few hours back that proved to be much too hot for their liking. They will gently reject it the next occasion they're given the meal.

Learning

People may acquire knowledge in a variety of manners, including via experience, instance, and algorithm. Humans may discern the result on their own via observing. Human beings are taught the result by way of illustration. But at the other extreme, studying by algorithm enables everyone to accomplish a project by executing a set of instructions. Handling a long division issue is an excellent illustration of this.

* Describe the steps your intelligent agent is taking to solve this pathfinding problem.

Since an intelligent agent cannot decide for itself, it will follow some lay down steps so as it can be able to solve the pathfinding problem.

This step include:

* Giving it input data so that it can be able to get insight that will enable it to solve the problem at hand.
* From a group of algorithms, it will decide which algorithm takes the shortest time to solve the problem at hand. These algorithms include Depth first search algorithm, shortest path algorithm.
* Through the algorithm that it has and the input and some of the insights it will be able to give the output.

What are the similarities and differences between these two approaches?

Similarities.

* One similarity between both approaches is that both approaches need input data so as to be able derive an output from it.
* Both approaches will not derive to a needed output if the input feed is not correct.

Difference.

* One difference is that for human intelligence the human gathers the information and process it while for intelligent agent they need to be feed input and trained so as to attain the best output.

Assess the purpose of the intelligent agent in pathfinding.

Exploration entails searching the entire sampling unit (investigating the sampling unit), while exploitation entails pursuing the potential regions discovered during the exploration.

Reinforcement training systems may train by doing a trial-and-error scan, understand the structure of the context it is within, and then utilize that model to design the subsequent action all at the same time.

Evaluate the use of algorithms to solve complex problems.

* How did you implement deep Q-learning using neural networks for this game?

To implement the Q-learning using neural networks we have to follow the following steps.

1. Import the required libraries. – such as TensorFlow
2. Build the environment. – This is where the neural network will be trained.
3. Build the learning agent.
4. Finding the optimal Strategy.
5. Testing the Learning agent.