Machines again cannot invariably learn

Technology, Artificial Intelligence

To fully appreciate a concept or to know a person must apply different methods to acquire knowledge. A machine can never truly know. Machines just merely recreate what humans tell them to do. They cannot apply the methods that humans use to acquire knowledge. There are many ways of acquiring information; however I will illustrate 6 main methods; Empiricism, perception, Intuition, language, past experience, and thought are essential in the art of knowing. However, before I allude to my main argument I firstly want to discuss the main limitations that computers possess.

Machines are not human and thus they cannot possess the ability to act like humans. Machines are pre-programmed and react in a particular way in a particular circumstance. However, machines can think and only can reach knowledge that has already been proven. An example of this is a designing program called Aaron created by Harold Cohen in 2001. He has given the program a knowledge base full of information about how people look and how their bodies move. The program also understands composition, brushwork and how to paint.

However it is also obvious that computers will never obtain the human attributes of creativity from inspiration or observation as they don't have minds. As we can see, the program Aaron is just another machine based on the calculation of the binary numbers of 0's and 1's. Thus, everything that the computer performs is based on the relationship between these numbers. Our ability to think seems to be infinite but the machine's ability to think would be limited to the programming of the machine. The first method of acquiring information is through thoughts.

According to computer scientist and artificial intelligence researcher, Eric Baum, thought or the ability to think is a mental process which allows beings to model the world and allows them to deal with it effectively. As I stated before, a human's ability to think is infinite and we are not limited as machines are to just one particular function or to the program which is installed. The ability to think also gives us the ability to express and possess our own unique ideas. This is another factor that separates our ability to obtain knowledge better than machines.

We can think rationally and mould our own ideas to any given problem and area of knowledge. Empiricism is another method of knowing and is derived through careful observation of phenomena and by extrapolating laws or principles from these observations. Science often employs this empirical method of learning. For example, in chemistry when testing a particular reaction, I observed a brown colour. Immediately I believed it to be the element Bromine. However, when analysing the results for the data that I obtained for the same practical beforehand, I realised that I had made a mistake and the colour corresponds to Iodine.

The two elements were however very similar to each other in terms of colour. The holes of my knowledge were filled from the experience. In terms of a computer they cannot rely on this type of method to gain knowledge as they do not have feelings or senses in order to comment or study observations. With empiricism comes perception. Perception is subjective and is affected by beliefs, assumptions, other knowledge and the senses. For

instance, when I looked at a coin from a certain angle, it seemed to have an elliptical shape.

However, my mother doesn't see an elliptical shape but a round shape. Thus, our perceptions of the coin were different due to our senses acting differently. On the other hand, a machine is unable to achieve knowledge through perception and the use of the senses. Both cannot be translated into a numerical equivalent for the computer to recognise. However, the problem with empiricism is that it includes experience as well as sense perception. Knowledge of the physical world is considered a generalisation and can never reach more than a high degree of probability.

Yet another method of ascertaining information is through language. Natural language use is determined by context and experience. A natural language can be understood in a variety of ways on the basis of the information it contains. Language owes some of its fundamental properties to the fact that it is used to express, store and convey information. Machines on the other hand understand information not by the use of language but by binary codes. As such, the computer translates information into binary in order for it to understand the information given by a human.

Therefore, a computer would not understand slang, vague or socially unaccepted words. Sometimes these words are used to convey different types of knowledge. Hence, machines again cannot invariably learn these words to convey something in a particular way a human could. The last method of obtaining knowledge is through past experience. Mistakes or

things learnt from the past can aid in predicting or understanding knowledge in the future. Machines don't rely on the past to obtain new knowledge.

They also don't know when they have made a mistake unless it is programmed to find errors-such as the spell check feature in Microsoft Word. An example of using past experiences was in mathematics when solving a quadratic equation. To do this I would have had to understand factorisation. Factorisation is based on algebra and algebra on basic arithmetic. Without the sequence of mathematical progression, solving a quadratic equation would prove impossible. Without the basic knowledge from past experiences, my mathematical knowledge would not have grown in the future.

Intuition is the final way of knowing and needs no justification. Intuition is not gained by following a series of facts to a conclusion. Instead, we know intuitional truth simply by the process of introspection and immediate awareness. For example I intuitively knew that my sister had stolen my wallet. There is no justification for it but because she is my sister and I know that she is the kind of person who takes my belongings I used my logic to come to a conclusion. This process can never be learnt by a machine. They don't have senses or the ability to observe their surroundings.

Machines only know the facts given to them. According to the writer C. S. Lewis, intuition is the way we start knowing everything. He wrote that " If nothing is self-evident, nothing can be proved. " Thus, there are certain things you must know immediately in order to have the tools needed to obtain knowledge. Philosophers call this kind of knowing prior knowledge which a person has prior to sense experience. An example of this is given by

the University of Mississippi ethicist Louis Pojman: " If John is taller than Mary and Tom is taller than John, Tom is taller than Mary.

" In this case, you would not have to know John Tom or Mary or know whether they exist or not to know if the proposition is true. All that is needed to solve this problem is the understanding of the concepts involved. This would include someone being taller than someone else. Thus, No particular experience is needed for the claim to be solved. However, a computer would not be able to solve this problem as they would only look at this knowledge from a language perspective. They would just be able to read the words on the page, or for others that are programmed, a mathematical way to solving the problem.

However, due to us humans seeing these types of questions from our past experiences, and our ability to relate to vague language a lot easier, we can solve the problem much more quickly than computers as the answer comes intuitively. As we can see machines need to know the ways in which humans acquire knowledge in order to 'know'. Machines have the ability to learn an abundance of facts and information, however this doesn't constitute to knowing. Knowing something stems a lot further than just information. Machines cannot have the same awareness, observatory skills, thoughts or experiences that humans have.

As such their knowledge is limited to specific subjects whereas humans can learn new and different types of knowledge everyday.

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