What actually is artificial intelligence?

Level: Beginner

Let's start with what it is not. Artificial intelligence, otherwise known as A.I or machine learning, is not an evil force trying to kill off mankind.

Another misconception is that all A.I can think like a human. It goes from nothing to brilliant in one step. This is not true.

Think of it as having the intelligence level of a house brick extending up to that of an earth worm then maybe up to a squirrel. (Squirrels are actually very clever, it would take a fantastic amount of computing power to come anywhere near to the mind of a squirrel).

Also, just to labour the point, A.I does not need to think like us nor does it need to perceive the world in the same way we do. A.I works with data – mainly just numbers.

You want your home helper robot to put eight apples in a bowl. It has two in one hand and three in the other.

2 + 3 = 5

A normal computer program would only be able to put five apples in the bowl. But your home helper robot has A.I, it knows that five apples is not enough. So it tries to find a solution to the problem.

2 + 3 + 3 = 8

By you telling the robot that five apples is not enough and that you want eight apples in the bowl caused the A.I to refer to it's data. "How do I make five apples into eight apples? The most likely answer is - I need to find three more!"

Once eight apples are in the bowl you tell your robot that you are happy and the A.I in the robot knows that the task you set it has been completed successfully.

How does A.I write stuff?

You ask an A.I a question, "What is your favourite animal?"
The A.I sees that you are asking a question which requires an answer.

The A.I starts to string together words that should make sense to you as a sentence and in the context of the question you have just asked. To do this it looks at all the data it has access to and completes the sentence one word at a time.

music   frog
food   cat

Answer: My favourite animal is a dog.

city   snake
colour   rabbit

For example; what is most likely word to come after "favourite" taking into account the question you asked, and the sentence it has created so far – music, food, animal, city or colour? The most likely word is "animal" based on all the sentences the A.I can read in it's data and what was in your question.

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Artificial intelligence is incredibly difficult to create. It takes extreme amounts of time, effort and money to complete even the very simple tasks in this paper.

However, as computers get every more powerful, data storage becomes bigger and cheaper, and programmers can look back on successes and failures when writing code, more complex A.I systems become possible.

We hope that this paper has sparked your interest in A.I and that you will continue to learn about this rapidly evolving technology.

There is so much more to discover!

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