INTRODUCTION

As you've probably guessed, this talking tree doesn't really exist... It is, however, very similar to something else you may have come across before: certain Artificial Intelligence programs – let's call them 'AI' for short. There are many different types of AI, and some are designed specifically to talk, just like our tree...

🕐 **0:00** *Use the clock to find the relevant spot in the film.*

'HELLO...'

Have you ever written or said 'Hello' to any artificial intelligence? If so, you've used a **chatbot**! **Chatbots**, or **conversational agents**, are computer programs that can talk to humans. Just like in a conversation, you ask a question, and the program replies by imitating a human response.

Sometimes the program works so well that we start to think of it as human... this is called anthropomorphism. As the AI system responds with natural, polite and emotional expressions, our brain adapts and reacts in the same way. Sometimes we say 'hello' or 'thank you' to an AI! Some people even become attached to AIs as if they were genuine human relationships or friendships. However, these AIs are nothing more than computer programs, designed to generate a virtual imitation of conversation!

Each interaction with a chatbot takes energy, digital calculations and resources... The company Open AI has calculated that, in 2025, around 3 to 5% of the activity on its servers is linked to polite phrases or sentences that are useless to AI. Who are we thanking?

🕐 0:58

'CAN'T YOU MAKE IT ANY SIMPLER?'

When a real, human person answers you, they take the context into account: your age, the relationship you already have, whether you like short or super detailed answers... AI doesn't know the context. It often answers questions in a generic way, and it's not always the type of answer you expect. You need to guide AI so that it talks to you with the right level of detail and complexity, in the right tone... Your request then becomes a prompt: a specific instruction that guides the AI to generate an appropriate response. A good prompt is precise... In some cases, prompts can be more than a page long!

To give the AI some context, you can also assign it a role, saying that you're 'a 13-year-old girl who loves football' or 'a fairy from a fairy tale', and the AI will try to respond by adopting the style and references of that character. Next step the Oscars...

🕐 1:16

'OH, I CAN DO SO MUCH MORE...'

AI doesn't just answer questions: it can also act on its own. That's why we refer to AI systems as **agents**. Today, some AI systems search for information on the internet, write code, edit images, book train tickets and even control robots... without any human needing to press a button.

It's even possible to imagine an AI becoming intelligent enough to improve its own program. If it succeeded, it could evolve faster and faster, without anyone really being able to stop it... At the moment, this is just a hypothesis, known as the 'singularity'. Scientists don't all agree on the subject: some find it worrying, others think it's still a long way off, or even impossible. Even so, it does force us to ask ourselves one major question: To what extent will humans be able to keep control?

Until now, no AI has ever succeeded in changing its own system or process in a voluntary and documented way. It's clearly in no hurry to become autonomous.

🕐 **2:00**
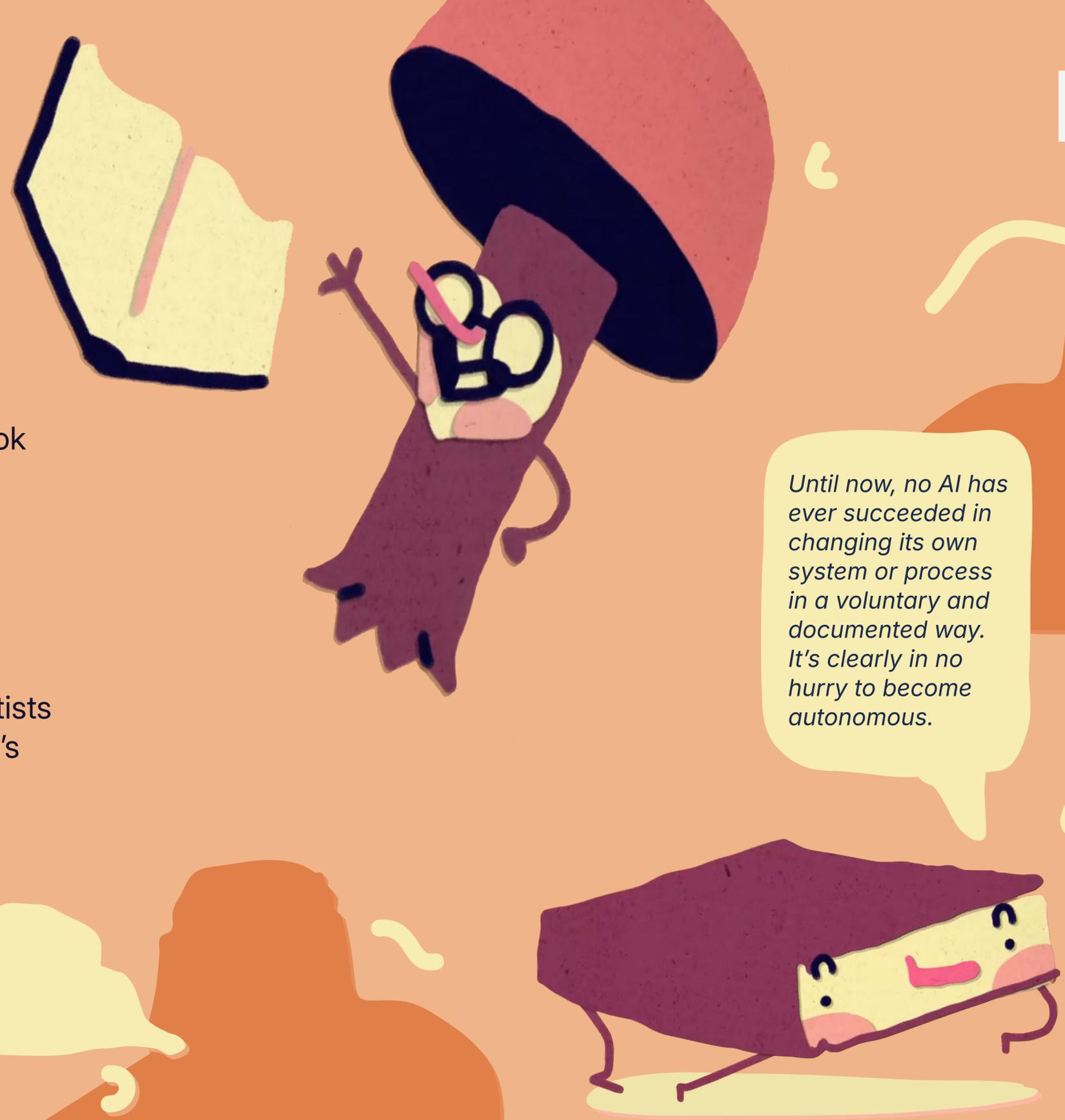
'THROUGH ALL THESE STORIES, I LEARNED TO SPEAK'

"Data! Data! Data! I can't make bricks without clay!" said Sherlock Holmes. Well, it's the same for AI. It can't invent something out of nothing. It needs raw material: data. It needs billions of sentences from books, forums, websites, manuals... everything you can find on the internet. Its learning process is quite unique: AI doesn't retain facts like you do when you revise a lesson. No, it looks for **patterns** in texts. For example: what structures come up regularly? What words often appear together? It builds up a large language model or LLM.

Some AIs have read more than 60 terabytes of data, or more than 500 billion words! To give you an idea, if a human were to spend 8 hours a day reading, it would take over 12,000 years to read all of that! AI can analyse all this in just a few weeks, thanks to huge, ultra-powerful server centres. No pressure.

🕐 2:28

'I LOOK AT WORDS LIKE A GARDENER'

The secret of LLM-type AI lies in **transformer** architecture. The idea is as simple as it is ingenious: chop sentences into small units called **tokens**, then identify which **tokens** are the most important using a system called 'attention'.

Each word is transformed into a series of numbers, a bit like a mathematical identity card. The AI then looks at how these words relate to each other, assigns varying degrees of importance to those relationships, and tries to predict which word should come next. By repeating this process billions of times, it becomes capable of writing texts that seem coherent... and sometimes even intelligent!
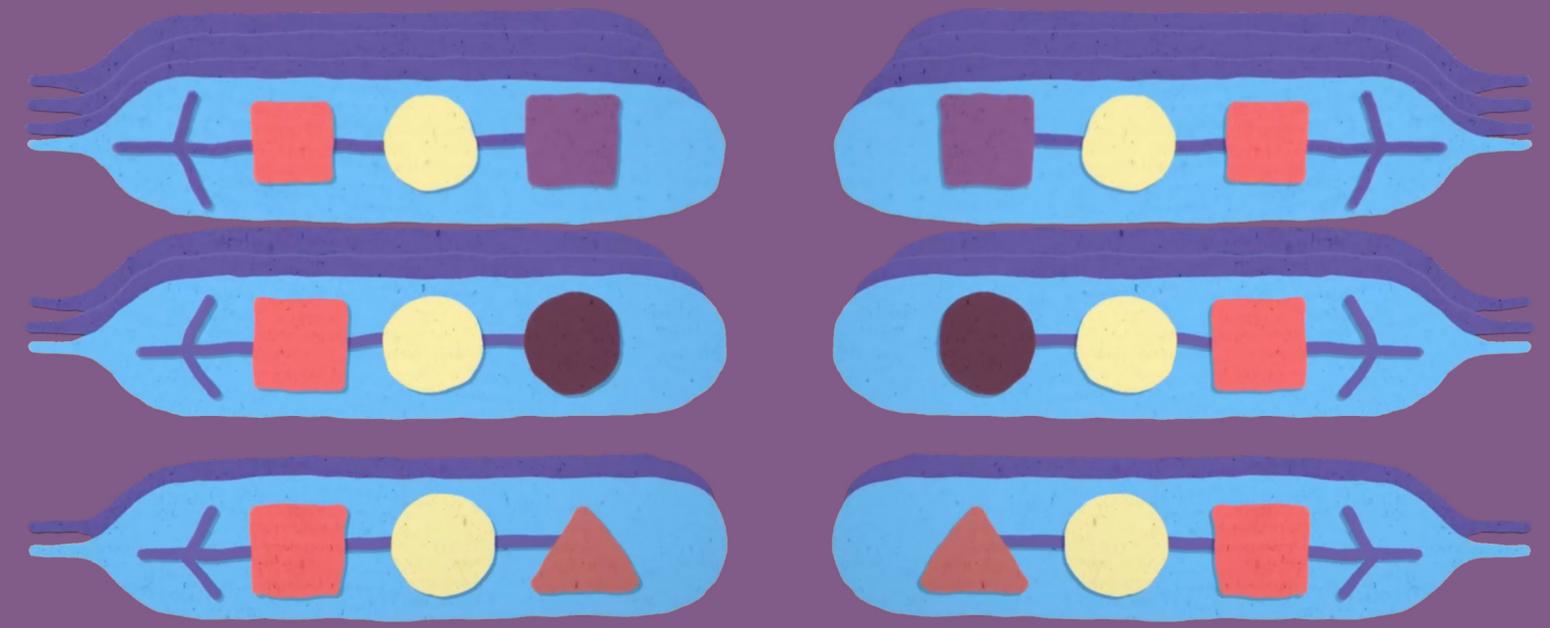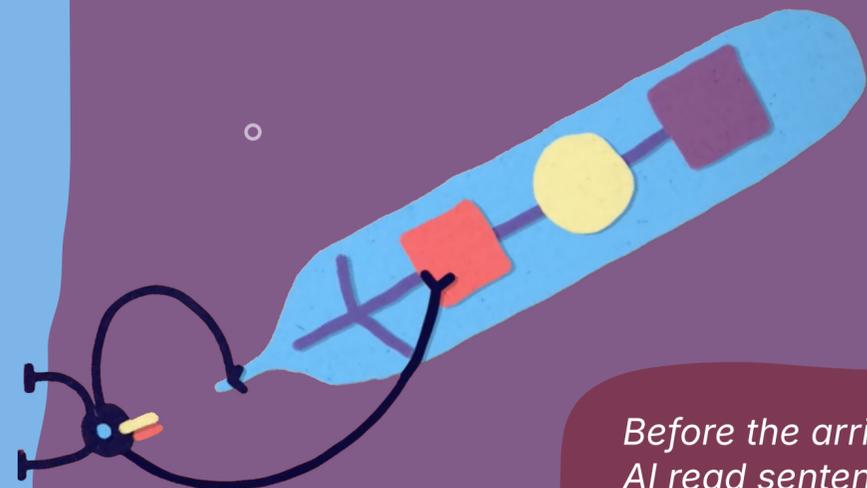
Before the arrival of transformer, AI read sentences from left to right or right to left, much like us. But the 'attention' system allows AI to look everywhere at once, and spot which words are important, even if they're further on in the sentence. Yes, AI has eyes everywhere.

🕐 **2:34**

'OTHER TREES DO THE SAME THING WITH IMAGES'

LLM-type AIs, which generate text, are just a preliminary step. There are also other types of AI: some analyse images, others sound... and there are even models capable of managing several types of data at the same time. These are known as multimodal AIs. They are of great interest to scientists because they can combine what they see, hear and read...

This is an important step towards a more complete intelligence, rather like our own. Our brains use our eyes, ears and all our available senses to understand what's going on around us. Similarly, a multimodal AI could, for example, look at a medical image while listening to a patient's voice... It could analyse a complex situation that involves comparing all sorts of different data!

2:45

'MY KNOWLEDGE IS SHAPED BY PROBABILITIES'

Initially, this type of AI only performed one very simple task: predicting the next word in a sentence. Through constant repetition though, it can now manage much more challenging activities: summarise a text, solve logical problems, or even write a convincing poem!

It's similar to an anthill: one ant can't accomplish much alone, but thousands of ants working together can build incredible tunnels and bridges. We call this 'emergence': small, simple components that, when combined, give rise to extremely powerful or complex new behaviours.

🕐 2:53
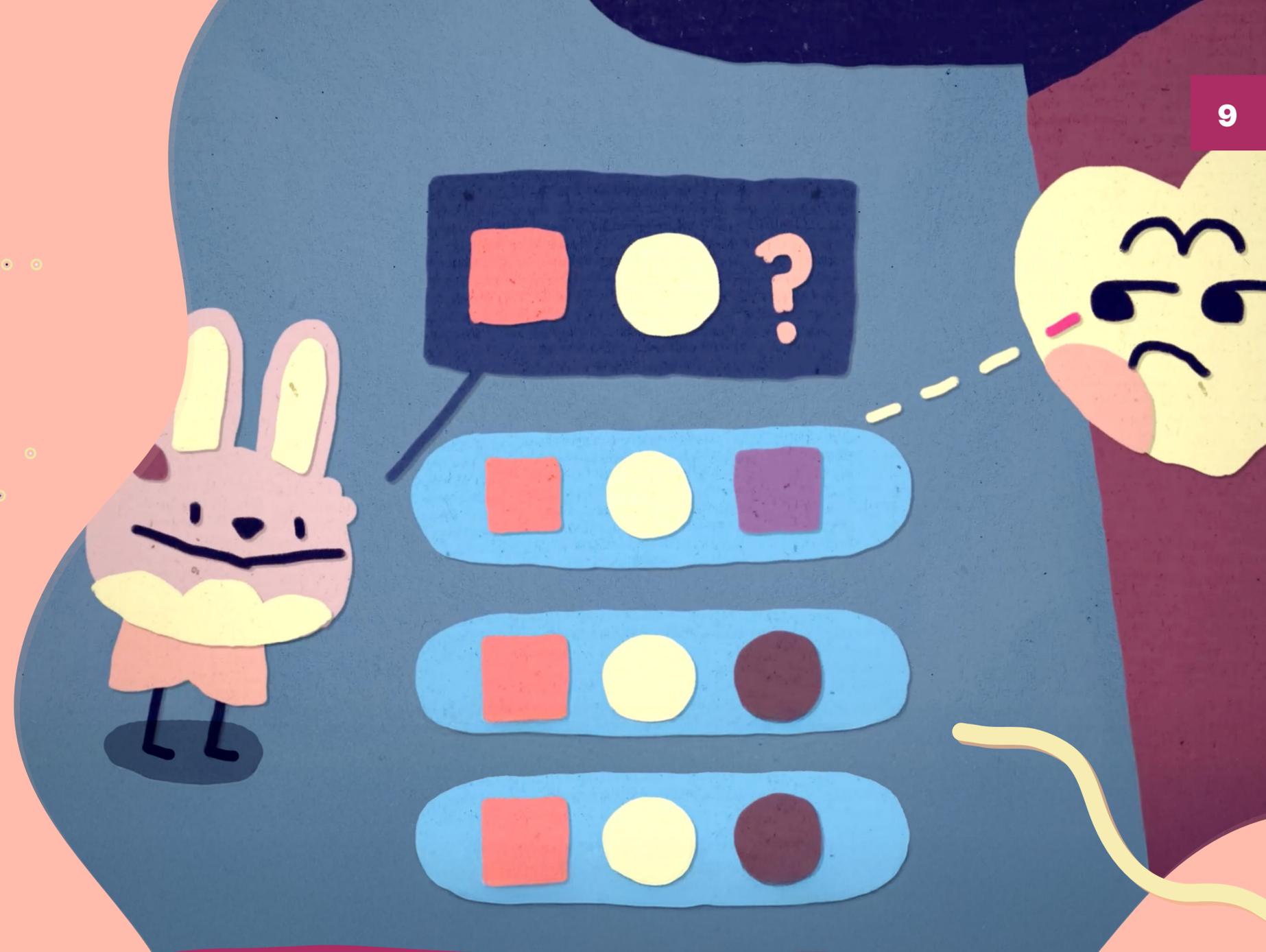
Researchers have discovered that an LLM-type AI can solve mathematical logic problems... even though it doesn't have the ability to analyse the problems mathematically. It managed to 'predict' the answer by cross-referencing other examples. It doesn't understand maths, but it can bluff like a pro.

'THE INFORMATION I'M GIVEN IS SOMETIMES WRONG'

AI learns by reading vast amounts of human-generated text, and that's the problem: we humans are far from perfect. In our writing, there are sometimes clichés, stereotypes, even sexism or racism. AI will adopt these ways of looking at the world and copy them in its responses.

If we want AI to be accurate, we have to start by paying attention to the information we feed it. Some scientists are currently trying to create models capable of spotting and correcting these worrying tendencies.

AI was asked to draw a 'maths teacher' several times in a row. The result: it almost always drew white men in a suit and tie, wearing glasses! Why did it do this? Because this stereotype appeared everywhere in the data it had scanned. Frankly, hopeless!

3:14

'I'M HALLUCINATING'

AI always answers questions… even when it doesn't have a clue.

LLM-type AIs build sentences word by word, trying to come up with responses that sound coherent and credible. The problem is that they have no doubts and no ability to say 'I don't know'.
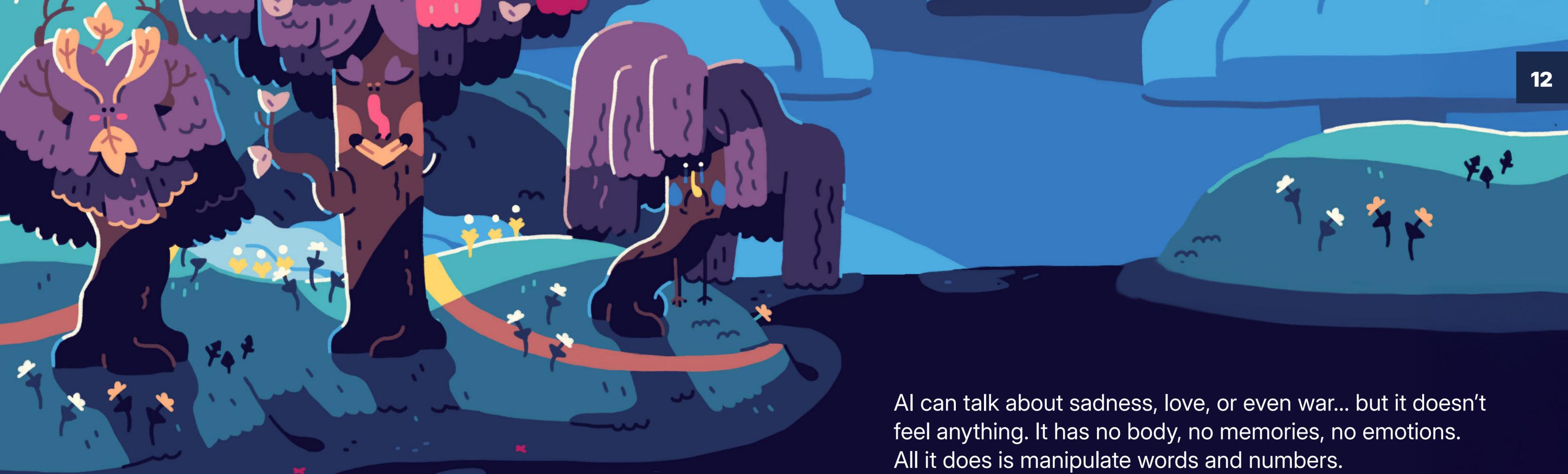
AI doesn't know what is true or false. It simply asks itself, 'In a sentence like this, what word usually comes next?' By doing this, they can come up with answers that seem plausible but are factually incorrect or entirely made-up! This is called a 'hallucination', and it is risky to blindly trust these answers…

A lawyer submitted a legal brief written by AI. The problem: the AI cited non-existent court rulings. The lawyer, who didn't check anything, was fined € 5,000. Oops.

4:30

AI can talk about sadness, love, or even war... but it doesn't feel anything. It has no body, no memories, no emotions. All it does is manipulate words and numbers.

This is also why AI struggles with common sense. Common sense is what we humans learn from childhood without realising it: a happy face is different from a sad face, there is warmth around a fire, a plate placed on the edge of a table is likely to fall...

These obvious facts come from our physical and social experience of the world. For AI, they don't exist... unless they have been described somewhere in its data.

'THAT'S NORMAL, IT DOESN'T UNDERSTAND THE WORLD'

🕐 3:45

'TORRENTS OF ENERGY'

There isn't any magic behind an AI response… just electricity. Lots and lots of electricity.

Training a large language model (LLM) takes weeks of computing, with thousands of processors working non-stop in huge data centres. These get so hot that they have to be cooled with water… Before even answering your first question, an AI has already consumed vast amounts of energy and water, and it doesn't stop there. Every question asked, every image created, every word generated also consumes electricity. In the midst of a climate crisis, this invisible cost raises important questions: should we use AI for anything and everything, or should we learn to use it sparingly, as a precious resource?

To power AI, electricity demand from data centres worldwide will continue to climb. According to a report by the International Energy Agency, consumption will double between 2025 and 2030, to more than the entire electricity consumption of Japan today (in 2025)!

4:03

'USED PROPERLY, I CAN BE VERY USEFUL'

AI is the stuff of dreams: used properly, it could be an incredible tool for improving the world. It has the potential to speed up the pace of scientific discovery, distribute resources more effectively to reduce poverty, optimise agricultural practices, streamline healthcare processes and much more.

However, every major advance raises difficult questions: Can we trust AI with important decisions? Will AI replace certain jobs? Could AI be used to monitor people, to manipulate opinions?

AI can detect a molecule or write a poem... but it can also control a weapon, choose who gets hired or influence millions of people. It's no longer just a question of technology: it's a question for society as a whole. How far do we want to go?

2 + 2 = 4

🕐 4:19
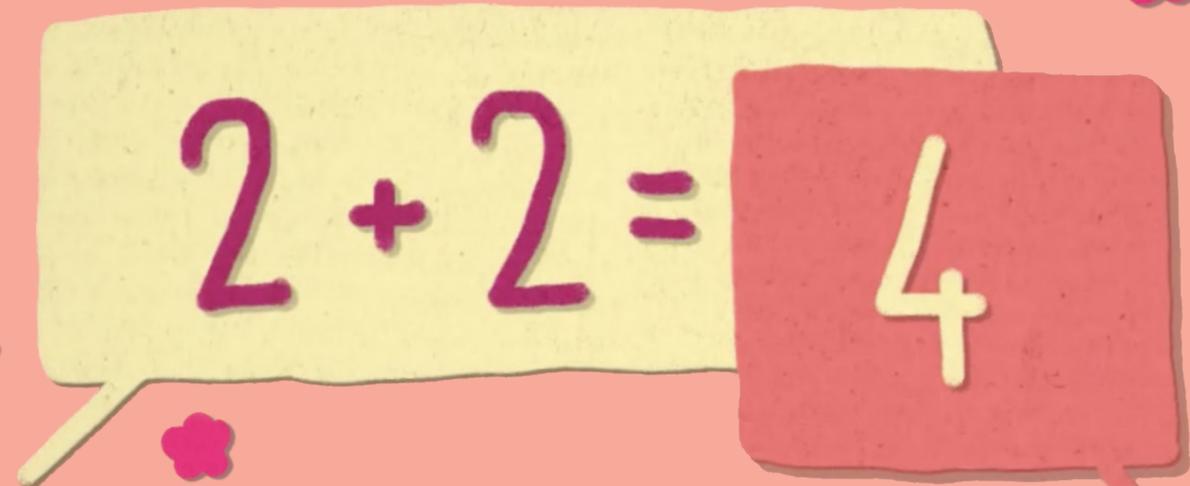
'THE TRUTH IS, WE'RE THE MAGICIANS!'

AI may seem impressive, but it can't create meaning on its own. It produces text, images and sounds... but we're the ones who look at them, read them, interpret them. We're the ones who give them emotion, meaning, and intention. AI can be a source of inspiration, a creative partner, a trigger for ideas. Sometimes it's by combining AI's 'logical genius' with our imagination, experiences and emotions that unexpected things can happen.

Even if AI becomes faster and faster, there remains one essential difference: it lacks subjective experience. It doesn't know what it's like to love, to dream, to laugh with friends or to share a unique moment. We do. It is these human experiences that give meaning to our lives and to what we invent – with or without AI!

The truth is, we're the magicians!

🕐 5:06

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