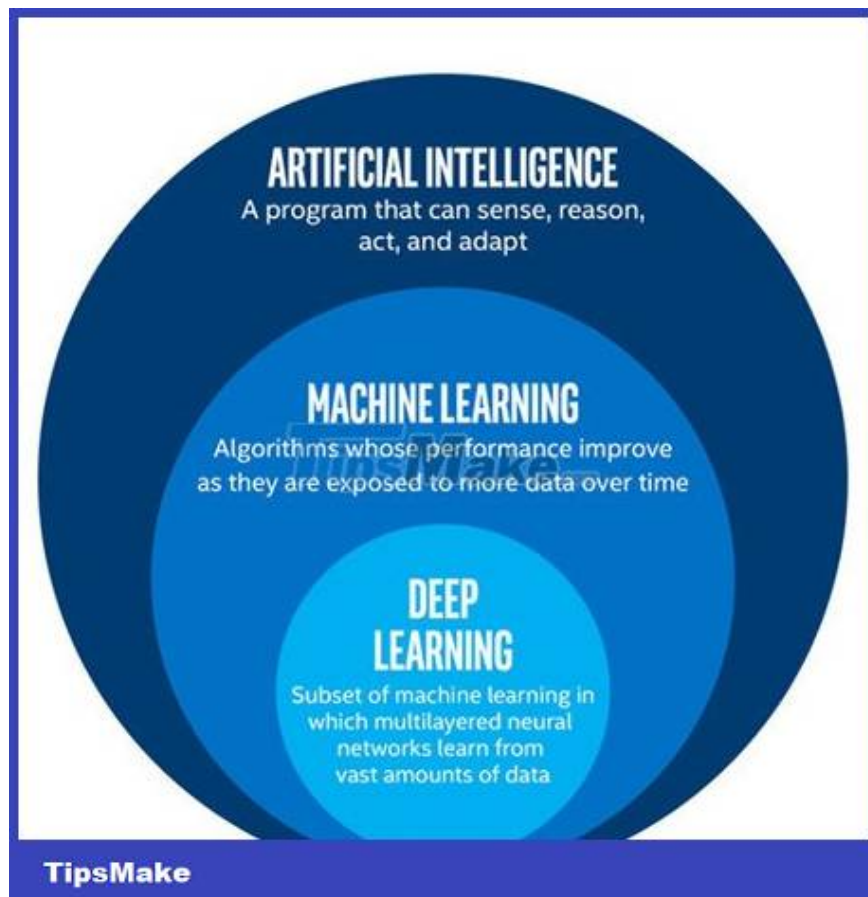


What is machine learning? What is deep learning? Difference between AI, machine learning and deep learning

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In recent years, along with the explosion of the industrial revolution 4.0, terms such as artificial intelligence (AI), machine learning and deep learning are gradually becoming popular. and become concepts that citizens of the 4.0 era must grasp.

The relationship between these three concepts can be explained by thinking of them as circles, where AI - the earliest idea - is the largest circle, followed by machine learning - the concept that comes after. , and finally deep learning - which is driving the current AI boom - is the smallest circle.



Building an AI system is of course extremely complicated, but understanding it is not so difficult. Most current artificial intelligences are just really good guessing machines (similar to our brains). You give the system a group of data (such as the digits 1 through 10) and ask the system to create a model ($x + 1$, starting at 0) and make predictions. (The next number will be eleven). There's no magic, this is what the human brain does every day: using what we know to make guesses about the unknown.

What makes AI different from other computer programs is that instead of having to create specific programs for each case, we can completely teach AI (machine learning), and it also has the ability to automatically deep learning. These three concepts can be basically defined as follows:

Artificial Intelligence (AI): a machine that can mimic human behavior and thinking.

Machine learning: An AI feature that allows experts to train the AI to recognize data patterns and make predictions.

Deep learning: A small technique of machine learning that allows machines to train themselves.

The relationship between AI, machine learning and deep learning

1. What is AI?
 1. Artificial intelligence - human brain in the form of a machine
2. What is machine learning?
 1. Machine learning - an approach of AI
3. What is deep learning?
 1. Deep learning - a technique of machine learning
4. Conclusion

What is AI?

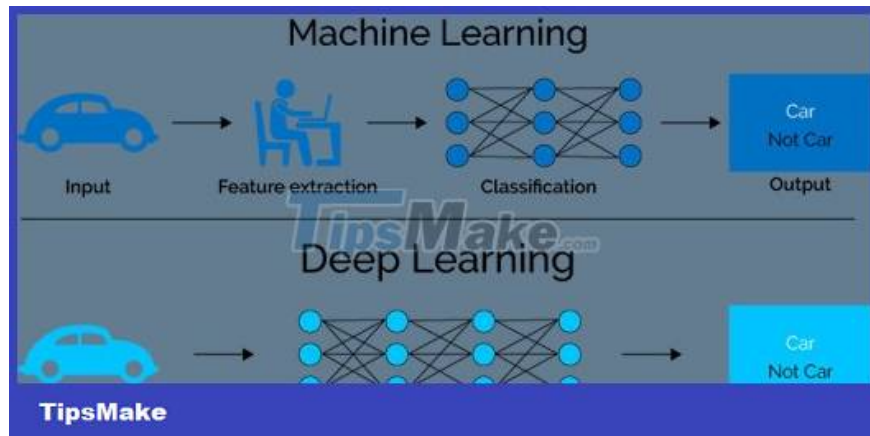
Artificial intelligence - human brain in the form of a machine



AI can be defined as a branch of computer science that deals with the automation of intelligent behaviors. AI is a part of computer science, and therefore it must be based on sound, applicable theoretical principles of the field. Simply put: it is the intelligence of machines created by humans. This intelligence can think, think, learn, . like human intelligence. Process data at a larger, more scale, systematic, scientific, and faster level than humans.

What is deep learning?

Deep learning - a technique of machine learning

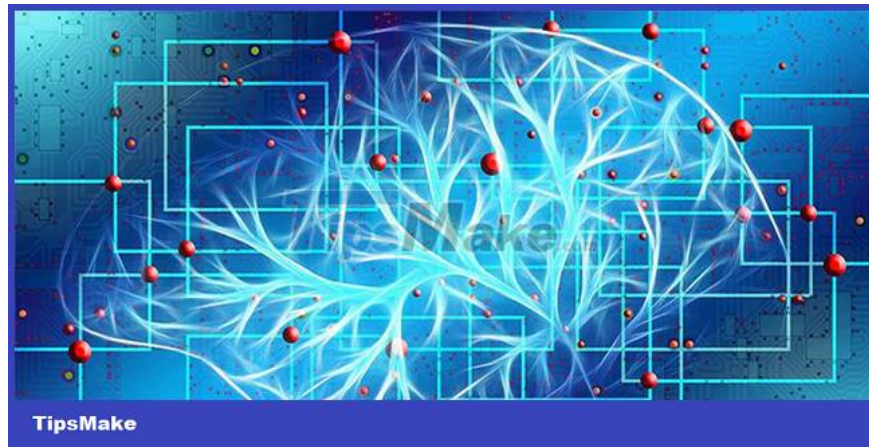


It can be said that up to now, AI has achieved quite a lot of great strides. Think of it as a kind of machine learning with deep "neural networks" that can process data in a similar way that a human brain can. The main difference here is that humans won't have to teach a deep learning program what a cat looks like, but just provide it with all the necessary images of cats, and it will figure it out on its own. , self learning. The steps to do are as follows:

1. Give the machine a lot of pictures of cats.
2. The algorithm will check the image to see the common features and details between the images.
3. Each image will be decoded in detail on many levels, from large, general shapes to even smaller and smaller tiles. If a shape or lines are repeated many times, the algorithm will label it as an important property.
4. After analyzing the necessary images, the algorithm will now know which patterns provide the strongest evidence of cats, and all the humans have to do is provide the raw data.

Bottom line: Deep learning is a type of machine learning in which the machine trains itself. Deep learning requires a lot more data input and computing power than machine learning, but it has already begun to be implemented by big tech companies like Facebook and Amazon. Among them, one of the most famous names in machine learning is AlphaGo, a computer that can play Go against itself until it can predict the most accurate moves enough to beat. many world champions.

Conclusion



Deep learning has enabled the application of many real machine problems while expanding the overall field of artificial intelligence. Deep learning disrupts the ways humans work by making all kinds of assistive machines workable, close to or identical to humans. Driverless cars, better health care... All are realized in this day and age. AI is the present and future of the world. With the help of deep learning, AI can realize the sci-fi dream that we have imagined for a long time.

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