Instructions for new learners AI: networks of neural networks

What is the artificial intelligence network, how does it work, what purpose is it used, and how to start learning about this technology?

One of the most controversial topics recently is artificial intelligence. While people like Elon Musk warn that someday, robots will ruin people's lives, other experts say that AI is a lot of help and technology is everywhere.

To say who is right and who is wrong is not easy. But if you want to know about AI, it's best to start with deep learning.

AI becomes the focus in the technology world thanks to the development of deep learning. Significant advances in computer vision (computer vision) and natural language processing (natural language processing) - the two most important and useful functions of AI - are directly related to the artificial intelligence network.

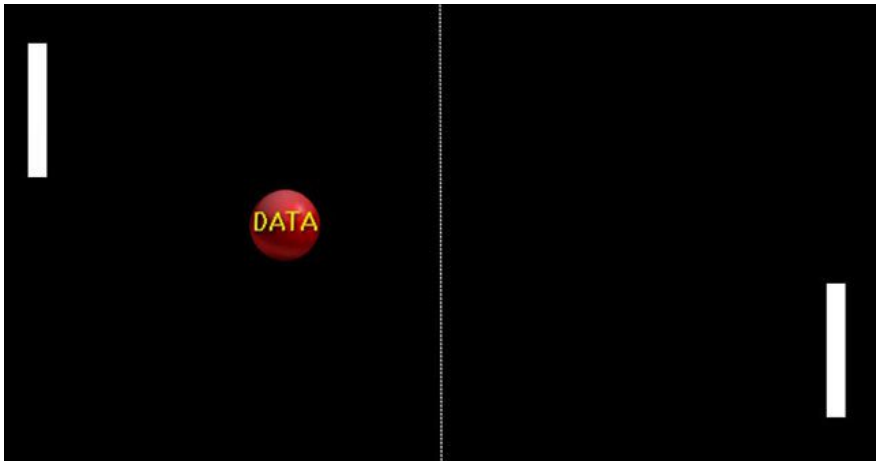
1. 3 benefits of AI with businesses in the future
2. AI can take away the job but will bring a better life

Neural Network - What is an artificial neural network?

Scientists believe that the organism's brain processes information using neural networks. The human brain has about 100 billion synapses - the distance between nerves - creates certain paths when activated. When a person thinks, remembers or experiences something with the senses, it is assumed that the nerve pathway will light up in the brain.

When learning to read, you have to listen to the letters aloud so you can hear them and let the young brain make conclusions. But when you've read the word "cat" enough, you don't need to read it anymore. At this point, you use the part of the brain that relates to memory, not to solve the problem, so use another synapse because you taught your biological neural network to recognize the word.

In deep leaning field, neural networks are represented by layers like synapses in living organisms. Researchers teach computers the word "cat" - or the cat image - by showing him the cat picture as much as possible. The intellectual network sees these images and finds images that resemble it, to know what the cat is.



Today, new data is the most precious thing

Scientists use artificial networks to teach computers. Here are some examples of their applications:

1. Brighten the dark image
2. Analyze MRI and show what you are thinking
3. Play Super Mario Bros
4. Copy yourself
5. .

You may also find that artificial intelligence networks solve a lot of problems.To understand how they work, and how computers learn on their own, let's look at the three basic types of artificial networks.

1. Adobe uses machine learning to detect photos with Photoshop
2. DeepMind of Google teaches AI to work in teams by playing Quake III Arena
3. Train AI tools without knowing code with Google's new tool

There are many types of deep learning and artificial intelligence networks, but let's focus on three types: Generative Adversarial Network (GANs), Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs).

Generative Adversarial Network (GANs)

LIVER. Ian Goodfellow - one of Google's AI experts - created GAN in 2014. GAN is an intellectual network consisting of two opposing parties - the originator and the opposing party fighting together until the originator wins. . If you want to create AI to imitate Picasso's artistic style, for example, you have to show GAN many pictures of this artist.

One side will try to create a trick on the other, making it think it's Picasso's painting. Basically, AI can learn everything about Picasso's work by viewing each pixel on each photo. One side will create a picture and the other decides if it is Picasso's painting. When the AI ??deceives itself, people will see the results to determine whether the algorithm needs to be corrected for better results, or succeeded in mimicking the style.

GAN is used on many AIs, including Nvidia's AI that creates a completely human image.

Convolutional Neural Networks (CNNs)

CNN, in theory, dates back to the 40s, but thanks to the development of hardware and efficient algorithms, they became more and more useful. While GAN tries to trick the opposing party into CNN, the data is filtered through multiple layers and then classified. They are mainly used for image recognition and text language processing.

If there are billions of hours of video to watch, you can create a CNN to verify what each frame shows. CNN is taught by viewing many complex images marked by people. AI learns how to identify cars, cars, butterflies . by looking at images that have been labeled by humans, comparing pixels in photos with stickers that it knows and then arranging in the items it has been taught.

CNN is also a popular neural network, used in many fields.

Recurrent Neural Networks (RNNs)

RNN is mainly used for AI who need context to understand input data. For example, AI handles natural language and interprets human speech. Just looking at Google Assistant or Amazon Alexa is that you understand how RNN is used in practice.

To understand how RNN works, try to imagine AI creating new music based on what people have done. When you play a note, it will try to think about what the next note is. When playing the next note, the AI ??will predict what the song will be like. Each contextual context provides information for the next step and the RNN continually updates itself based on the input data it receives continuously.

Go deeper into artificial networks

There are many types of artificial networks and the above three are just a part of what the article wants to say. But if you've read it here, you probably want to know what an artificial network is and what it does. Here are a few suggestions if you want to continue studying:

1. Summary of online AI courses for free
2. 6 steps to start learning artificial intelligence programming (AI)
3. Online courses on artificial intelligence (AI), certification
4. Free online artificial intelligence (AI) course of Finnish university