

## Essay

### Neural networks in our life

People have always tried to make their life easier, if we want to live, we have to work. And then there are two ways of solving this problem: you can work yourself and you can make someone work for you. If we want to make our life easier, we do not choose the first way, and the second way has to variants too. The first is to make another human to work for you, but it is now illegal, so the only thing we can do is to make a machine work for you. People tried to do such things centuries ago, for example mills were discovered thousand years ago, and it is a great way to make the wind work instead if you. But the time has passed, we are now can not be surprised by a mill, all our work is connected with computers and it involves a lot of brain work, not our muscles. So now we need a machine that can think like us. And neural networks can do that, or not?

First of all, let us clarify, what is a neural network? It is not a robotic brain or a thinking machine, that is just an algorithm, that can work with big amounts of data, and make prediction. So, there are several tasks that neural networks can do, the most common of them are classification, optimization etc. Basically, they take an input data and make a decision, based on that data, for example if there is a cat on the photo or not. And neural networks do not think at all, they just perform large calculations, and make a prediction, based on the result of their calculations. AI (artificial intelligence) is not really an intelligence, it is just an algorithm, that can make good predictions, based on big data. But neural networks must be trained, to work properly. The decisions, made by not trained network would be absolutely random, so that is not what we need. There are a lot of different ways of training them, but the main idea is that the networks are trained on really huge amount of marked data, for example a database with 100.000 photos of cats and dogs, where is written on which photo there is a dog and on which one a cat. The

neural network makes a prediction, whether there is a cat on the photo, or a dog. Then it looks at the real answer. If it was right, it remembers its configuration, if not, than it change itself a little, so the next time it would be right. It takes a lot of time to train a neural network, usually its is done on supercomputers.

Now let us talk about the pros and cons of usage of neural networks in our everyday life. Ten years ago, we did not use them at all, but now we use them every day. They are used in voice face recognition, internet search, Augmented reality. Every camera on a smartphone nowadays has an AI in it, based on neural networks. And helps us a lot: you don't need to be a photographer to make great photos, you don't need to correct them in photoshop, all that is made by AI at the moment you take a photo, and you can publish it at that minute. I think its great! But its is not the only usage if neural networks. They a very good at analysis of really big data, for example making weather forecasts. Yandex music advises you songs that are similar to the ones you like, and its also made by neural networks. They are also used in science, fore example in astronomy, they help to find planets, near other stars. So, there are countless usages of neural networks nowadays, new phones and computers have a neural processer, embedded in its CPU, it is made just for neural calculations, to make them faster. To summarize, neural networks are a part of our life, and we cannot imagine it without them.

On the other hand, such automatization leaves a lot of people without their jobs, for example we do not need a security in our houses, we just have cameras and neural network that recognizes faces, you don't need to pay it any money, just electricity. Plus, there a such programs that can forge someone's voice, or even it can change a face in a video. That means that we are going to see a lot of fakes on the internet, where presidents say that they hate all their citizens, or something like that.

But after all we can do nothing with the progress. The problems will be solved, and we all will use neural networks even more, then now. Humans are led by their laziness, so we will always try to automize all our work. And as for the

work of the brain, neural networks are the only way to automatize it. And it is a very popular way of science development nowadays.