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Artificial neural networks

Nowadays we are living in the age of computers, and we are systematically making our way to creating artificial intelligence. In addition, one of possible directions to make AI come true is to find the way of generalizing patterns. Solving this problem will help us not only to create a program that can generate thoughts, but to understand how we think.

Beginning from the middle of XX century scientists have developed a bunch of different mathematical models and algorithms that are now widely used in pattern recognition and classification of objects. Those models are now called artificial neural networks. Now there exist many different architectures of neural networks, which are good at specific tasks. For example, the main tasks that can be solved using this technology are:

1. Clustering
2. Forecasting
3. Pattern recognition
4. Decision making and management
5. Data compression
6. Approximation

Only in recent decades humankind has succeed in creating artificial networks, and now they have become an integral part of our everyday life.

There are many different architectures that differ from each other only with in the choice of the activation function and number of hidden layers of neurons. For creating neural networks I use recurrent architecture, based on logistic or softsign activation functions. This allows to smoothly and more accurately define templates from a small number of training samples, and more precisely recognize these patterns on new data.

Artificial neural networks is one of the most popular directions of research now. Programs based on this technology can now recognize our speech, pattern of different objects, but cannot understand the meaning of these things. Now there are various experiments with AI, which foster the immersion of humanity in the world of artificial intelligence. To my mind, future in IT depends on research in this sphere, so that will help to develop the highest technology of all time.