

ANALYSIS OF DIFFERENT TYPES OF NEURAL NETWORKS AND THEIR APPLICATION TO REAL-WORLD CHALLENGES²⁵

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Abstract: Nowadays, there has been a great interest around the term “neural network” in the field of computer science. It attracts a lot of attention from many people. In this article, we will look through the most used variations of neural networks, introduce how they work in brief, along with their applications to real-world challenges.

When we are children, we learn the things with the help we get from the elders. Later by self-learning or practice we keep learning during our whole life. The artificial neural networks are inspired by this processes in the human brain. They learn by detecting patterns in huge amount of information. With the help of neural networks, we can provide solutions of problems for which there is no algorithmic method to be solved with. We don't need to program the neural networks explicitly, they learn how to solve problems by examples.

Neural networks are usually used for statistical analysis and data modelling, in which their role is to serve as an alternative to standard nonlinear regression or cluster analysis techniques. That's why, they are typically used in problems that may be formulated in terms of classification, or forecasting. Examples of their use include image and speech recognition, textual character recognition, and domains of human expertise such as medical diagnosis, geological survey for oil, and financial market indicator prediction.

Keywords: neural networks, deep learning, artificial intelligence

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