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NEURAL NETWORKS, ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN DIFFERENT SPHERES OF HUMAN LIFE

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Анотація
У статті розглянуто важливість нейромереж, штучного інтелекту та машинного навчання в різних сферах людського життя, включаючи науку, медицину та технічний розвиток. Висвітлені потенційні ризики використання цих технологій та користь яку можна отримати застосовуючи їх.
Ключові слова*: нейромережа, штучний інтелект, машинне навчання, технологія.*

Abstract
The article examines the importance of neural networks, artificial intelligence, and machine learning in various areas of human life, including science, medicine, and technological development. The potential risks of using these technologies and the benefits that can be obtained by using them are highlighted.
Keywords*: neural network, artificial intelligence, machine learning, technology.*

Neural networks, artificial intelligence and machine learning are an important topic today, as these innovative technologies increasingly occupy not the last place in various areas of human life and even entire countries.

These technologies are used both in civilian life and in the military sphere, in enterprises and business. Their main task is to reduce the human factor due to which a person can lose his life, a business can lose profit, and in computer security not to warn of vulnerability to an attack. Also, their task is to facilitate the work of a person or to replace him in certain areas or to reduce the time for performing the same actions, thereby speeding up work.

Neural networks are a mathematical model that is based on the structure of the human brain, it consists of a network of nodes. Each of the nodes performs simple calculations. Machine learning performs tasks without the need for explicit programming. Among the methods by which machine learning is performed is training with a teacher, this method is one of the most popular and often used for training. When using this approach, the machine learns on certain data for which the answers are known in advance. When comparing neural network with machine learning, it is very important to tell about the actual difference between the two and what machine learning really is [1].

Artificial intelligence is a general term for machine learning. Machine learning is aimed at creating intelligent devices or systems. They can automatically maintain knowledge from experience. Thus, machine learning is a process that is constantly changing and improving. Machine learning tries to work out the actual structure of the data. And also include data in machine learning models that can be used in various areas of life and business [2].

Artificial intelligence is a branch of computer science that studies and creates an imitation of the human mind in computer systems. Artificial intelligence can be used in various computer systems.

Artificial intelligence is based on understanding and analyzing large volumes of data. With the help of machine learning algorithms, neural networks, genetic algorithms and other methods, artificial intelligence is implemented. In today's world, these technologies are an integral part of various industries. The work performed with the help of these technologies is quite reliable, and the result of data analysis is obtained faster than it is done by a person. The biggest advantage is the absence of the human factor. Artificial intelligence is actively used in medicine, banking, transport, technical support and others [3].

However, although neural networks and machine learning have great potential, their use can be dangerous if there was poor input data on which the model was trained or a low number of model evolutions. If a neural network is used to control a vehicle, to guide military weapons, to control a satellite, to control airplanes, the price of risk is human life.

Artificial intelligence can be used to recognize animals and plants in a certain area. You can also track animal migrations. The use of this technology has also gained in weather forecasting.

Neural networks and machine learning are also used in various fields related to medicine. Because their work results are quite accurate. For example, with the help of neural networks, it is possible to recognize pathologies in the images of medical images, which helps to increase the accuracy of diagnosis. In addition, machine learning is used to predict diseases, which allows for the development of more effective prevention and treatment strategies [4].

Another important field of application of artificial intelligence is finance. Machine learning can predict stock market prices and exchange rates. Can help detect fraud and abnormal transactions. The use of neural networks and machine learning in the financial industry allows to reduce risks and increase the efficiency of investment strategies.

Thus, neural networks, artificial intelligence and machine learning can make a significant contribution to various areas of life. For example, speeding up processes and reducing the human factor. But they also have potential risks that require careful analysis and ensure safety, ethics and social justice.

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