ARTIFICIAL INTELLIGENCE INFORMATION TECHNOLOGY

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The paper is devoted to the development of artificial intelligence technologies. The material presents the key directions and methods of research in this field. It also deals with the technology application at present and in the future. The purpose of the paper is to explore the concept of artificial intelligence and systematise knowledge in the realm. Special attention is given to prospects description in technology, which can significantly affect the development of science in general.

Over the past decade, computers have been trained to solve quite complex problems. Machines are actively conquering many life aspects like identifying people, traffic on a busy highway, playing chess, etc. Today, computer systems are able to analyse human preferences and help with content selection: the news we read, the movies we watch, the music we listen to. Now smart systems choose all these apps. Artificial Intelligence (AI) is a field of research aimed at creating computers that start performing functions better than a human being at present. We mean the functions that deal with the ability to perceive, analyze, reason, use knowledge and plan actions. The principle of this technology is to scan a large amount of information, to find some certain features and patterns. So in this way a computer learns. AI is a complex discipline with many theories, techniques and technologies. Many scientists are engaged in the development of the technology: symbolists, connectionists mathematicians, psychologists, and of course programmers [1].

In recent years, the main area of AI study has been machine learning. The algorithm of operation is based on three basic components: data, attributes, and methods. The material for system training can be obtained in many different ways. The better the data, the more efficient the program will work. This is a set of properties, characteristics or attributes that describe the model [2].

Any neural network is a set of neurons or functions and connections among them. The task of a neuron is to accept input numbers, perform certain instructions, and output the result. Deep learning is one of the branches in machine learning. The technology is based on artificial neural networks (ANNs). These ANNs receive training algorithms and ever-increasing amounts of data to improve the efficiency of learning processes. The larger the amount of information is, the more efficient the process is. The learning process is called deep because neural network manages many levels. The deeper this network penetrates, the higher its performance. The deep machine learning process consists of two main phases: learning and inference generation. The learning phase should be considered as a method of labelling large amounts of data and determining their respective characteristics. The system compares these characteristics and remembers them in order to draw the right conclusions next time when it encounters similar data [3].

In conclusion, mention should be made about the prospects of the technology in this paper. With the advent of AI, human involvement in well-functioning production processes is considerably reduced to a minimum. Production time is reduced while productivity is increased. Computer does not get tired and make mistakes in processing a large amount of data. The technology has already found applications in many areas of our life. AI systems with cameras and motion sensors are able to monitor social border in the streets, predict dangerous situations and thoroughly check documents. In medicine smart programs are widely used to diagnose cancer, predict genetic diseases and cardiovascular problems. Modern business and marketing inseparable from smart systems. At present it is evident that AI integration makes our life more comfortable and safer. Engineers believe that the current level of AI usage does not fully reflect its great potential [4].

References:

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