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IMPROVING THE QUALITY OF THE EDUCATIONAL SYSTEM OF HIGHER EDUCATIONAL INSTITUTIONS BY MEANS OF THE INVOLVEMENT OF STUDENTS IN THE EDUCATIONAL PROCESS WITH THE USE OF ANALYTICAL POSSIBILITIES OF NEURAL NETWORK TECHNOLOGIES

Abstract: *The goal is to improve the quality of continuing education in higher education institutions based on the use of neural network technologies, for analyzing images received from video cameras installed in classrooms. An analytical review of the current software solutions and approaches to the implementation of systems for recognizing emotions, including such stages as "Pattern Recognition" and "Processing of Visual Information", has been performed.*

Key words: *gesture recognition, continuing education, recognition of educated neural networks, matlab, differentiated approach.*

Language: *English*

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Introduction

In the field of creating an effective human-machine interface and control by means of gestures, today there are a sufficient number of technologies: There are two categories of effectiveness of distance learning: 1. Distance learning should provide the greatest possible interactivity between the student and the teacher, feedback between the student and the educational material. 2. It is extremely important to provide highly effective feedback so that students can be confident in the correctness of their progress along the path from ignorance to knowledge [1].

Materials and methods.

Today, with the help of innovation, it is possible to introduce modern methods into the educational process, new solutions that can make teaching people with disabilities most comfortable. One of these methods is the artificial immune systems approach. Its use allows predicting the learning outcomes and efficiently managing the process of acquiring knowledge in real time. The second modern approach is the possibility of using neurointelligent systems.

A neural network is a machine interpretation of the human brain, which contains millions of neurons that transmit information in the form of electrical impulses; it is a sequence of neurons connected by synapses [2].

One of the urgent tasks is the recognition of visual images. Machines capable of recognizing paper signatures, symbols and emotions, which greatly facilitate human labor and speed up the work flow, while reducing the risk of error due to lack of a human factor [3].

Neural network technology is used to analyze the conducted pair based on neural technologies. How during the pair, the neural network will track the involvement of students in the educational process, record what topic the teacher is teaching at this time and what the student's involvement in this or that information received [4].

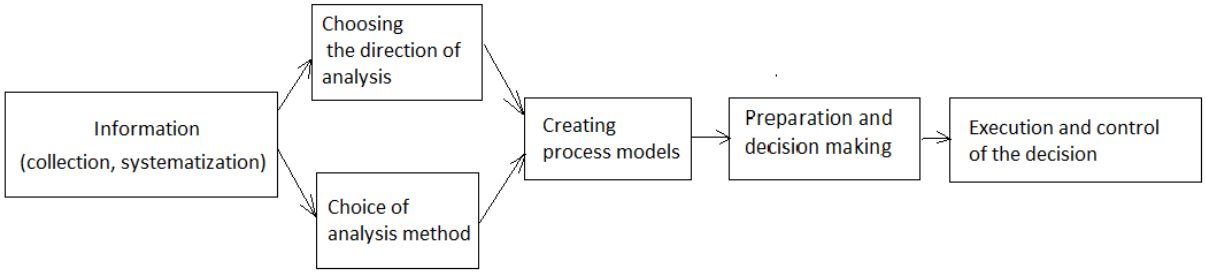
At the end of the lesson, the system will identify gestures and emotions, which the system will classify as negative (that is, the student does not understand what is happening on the pair) and the positive jelly understands what is happening on the pair. Then, using face recognition technology, certain body movements will be assigned to a specific student. And an algorithm will be proposed that will ask personalized topics for each student to work out the material that he does not understand.

In the course of this technology, it is planned:

1. make the educational process more personalized;
2. to improve the general level of students' literacy;
3. a differentiated approach (to use a task depending on the level of preparedness of students).

It should be borne in mind that:

Intellectual analysis, used for the above subtasks, currently has a wide range of mathematical methods and information technologies implemented on their basis. These include methods of multivariate statistical analysis (factorial, variance, regression, correlation, cluster, analysis, etc.), specific methods of intellectual analysis - artificial intelligence methods (artificial neural networks), decision preparation systems. Moreover, some of these methods or their combination can be used both for the operational analysis of the available data and for fundamental research of problems in a particular area of the educational process [5]. The general scheme of the analysis of the educational process using information analytical systems can be represented in the form of Picture 1.



Picture 1. Analysis and decision tree

For a practical assessment in the university of the capabilities of information and analytical systems in the implementation of this scheme at the level of the faculty link or the graduating department, the accumulated databases of the faculty on teaching a group of students from the first to the final year were considered [6].

The structure of the developed template for the model of using neural networks to improve the quality of education is justified by the fact that the main goal of educational institutions is to provide high-quality and relevant education, which directly depends on the organization of the educational process.

Conclusion.

Thus, the system of improving education using neural network technologies is an actual technology today, and in a rapidly changing world, a huge number of information flows and the conjuncture requirements of the labor market, and modern realities, will inevitably require flexibility and individuality of the educational process The speed of changes in the demand and extinction of certain knowledge will only increase with time, the continuity of the educational process, only this will be a guarantee of economic stability, both of an individual member of society and society as a whole, which in turn imposes strict requirements not only on students, but and to existing educational models. And to include in them the latest technological developments today in the field of the educational system.

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