

When conducting a comprehensive career guidance to students, their parents and teachers the student will form the motivation for learning activities, reducing the pressure from parents, the student will no longer be a slave, his choice will become more aware. In addition, to overcome the difficulties of adaptation to the new educational system would be more constructive, the effectiveness of training activities will increase, which is very important.

A. O. Катаев

USING ARTIFICIAL INTELLIGENCE TO FIND THE OPTIMAL SOLUTIONS IN EXPERT SYSTEMS

Artificial intelligence is the science and technology to create intelligent machines, especially intelligent computer programs. Artificial intelligence is associated with the task of using computers to understand human intelligence, but not necessarily limited to biologically plausible methods.

The expert system is a computer program that can partially replace a specialist expert in resolving the situation.

In computer science, expert systems are considered together with knowledge bases as models of behavior experts in the particular field of study using the procedures of logical inference and decision making, and knowledge base - as a collection of facts and rules of inference in the chosen subject areas.

To find the optimal solution of the problem identify several types of artificial programming:

1) A logical approach to creating artificial intelligence systems aimed at the creation of expert systems with logical models of knowledge bases using the language of predicates.

Educational model of artificial intelligence in 1980 was adopted by the language and logic programming system Prolog. Knowledge base, written in Prolog, are sets of facts and rules of inference, written in the language of predicate logic.

The logical model of knowledge bases can record not only the specific information and data in the form of facts on the Prologue version, but also summarizes with the rules and procedures of inference, including the definitions of logical rules that express some knowledge as a specific and generalized information.

2) Agent-oriented approach or an approach based on the use of intelligent (rational) agents. Under this approach, intellect - a computational part (planning) the ability to achieve its goals of intelligent machines. Itself is such a machine would be

an intelligent agent, perceiving the world around him with the help of sensors, and able to work on objects in the environment through actuators.

This approach focuses on the methods and algorithms that will help the intelligent agent to survive in the environment when carrying out its task. So, here is much more careful study algorithms for finding ways and making decisions.

3) The hybrid approach assumes that only the synergetic combination of neural and symbolic models reaches a full range of cognitive and computational capabilities. For example, the expert rules inference can be generated by neural networks, and generating rules are obtained by statistical learning. Proponents of this approach believe that a hybrid information systems will be much stronger than the sum of the different concepts separately.

The structure of the expert system can identify the following components: user interface, user, editor of the intellectual knowledge base, expert, knowledge engineer, working (RAM) memory, knowledge base, inference engine, explanation subsystem.

Artificial intelligence is used in the mechanism of information output from the knowledge base, which is explained by complex interactions of different calculation rules, relationships and patterns originally made by experts in the future are compared with the responses of users and displayed the most accurate result. In this case, the process of comparison may vary from a simple iteration of the rules written to highlight the fundamental rules of issuing them a "weighting" in relation to other rules, not to be essential, and in the future based on them made the final decision. In different approaches of artificial intelligence programming will be made and the way to solve this problem. The most frequently used a hybrid approach, where training of the expert system is based on artificial intelligence, provided that the user makes the rules, and your PC is already recording the rules of expression in the formal-logical record in the knowledge base, and keeps track of the rules are not repeated and were a real character. In the future output as occurs when using artificial intelligence, which evaluates the input given and outputs the results - as noted above.

In conclusion I would like to note that the use of expert systems in education and in other spheres of life is innovative and is now little used, due to the complexity of the programming, but I think that in future this area of information systems development is rapidly develop.