ADVANTAGES OF USING ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN INFORMATICS AND IT SCIENCES

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Abstract

This article will analyze the advantages of using artificial intelligence (SI) technologies in Computer Science and IT. Artificial intelligence allows for a personalized approach to computer science and IT in the educational process, the introduction of automated assessment systems, the analysis of students' knowledge in real time, and the development of interactive and innovative teaching methods.

Keywords: Artificial intelligence, digital learning, adaptive learning, automated assessment, educational technologies, interactive learning, innovative learning, inclusive education.

Introduction

The education system of the 21st century is developing based on modern technologies. As a result of the rapid development of digital education, the involvement of artificial intelligence technologies in the educational process has become a pressing issue. The capabilities of artificial intelligence allow improving the quality of teaching in the educational process, providing personalized educational materials, automating assessment processes, and teaching in accordance with the individual needs of students.

Today, artificial intelligence is widely used in education systems around the world. For example, in the USA, China and European countries, educational platforms based on artificial intelligence, virtual teachers and adaptive curricula are being introduced.

The digital education system is further developing with the help of artificial intelligence technologies. The role of AI in the educational process of Informatics and IT is of great importance in the following areas:

1. Personalized education using artificial intelligence

In the traditional education system, the same curriculum is provided to all students in Informatics and IT. However, the level of knowledge and learning ability of each student is different. Artificial intelligence creates personalized learning opportunities and helps to provide education in Informatics and IT that suits the needs of each student. For example, in online education platforms such as Khan Academy, Coursera, EdX, artificial intelligence analyzes the level of knowledge of students and recommends appropriate courses and exercises for them. This allows students to learn more deeply.

2. Automated assessment systems

For teachers, assessing the level of knowledge of students in Informatics and IT takes a lot of time and effort. With the help of artificial intelligence, this process can be automated. For example:

AI Quiz System automatically evaluates test questions and analyzes the results in real time. This system not only simplifies the work of teachers, but also ensures the impartiality of the assessment process.

3. Optimization of the learning process

With the help of artificial intelligence, the learning process can be effectively managed and optimized. For example, AI-based systems identify which subjects students are having difficulty with and recommend additional materials to them.

Through such systems, Informatics and IT teachers will have accurate information about the level of mastery of each student and will be able to apply an individual approach.

4. Interactive and innovative teaching methods

Artificial intelligence will allow the implementation of virtual reality (VR) and augmented reality (AR) technologies in the educational process.

- Platforms such as Google Expeditions, zSpace, Nearpod allow students to learn lessons interactively through virtual laboratories and simulations.

- With the help of virtual teachers and chatbots, Informatics and IT students can get answers to their questions in real time.

5. Increasing the inclusiveness of education.

The capabilities of artificial intelligence will expand educational opportunities for people with disabilities.

- Text-to-Speech technologies help visually impaired people to master educational materials in science.

- Speech-to-Text systems provide lessons in written form for students with hearing impairments.

Such innovative technologies help make education open and inclusive for everyone.

In conclusion, it can be said that the integration of artificial intelligence into computer science and IT disciplines in the process of digital education makes the educational process effective, based on an individual approach and innovative. With the help of AI, the educational process is enriched with new approaches such as automated assessment, personalized learning and interactive teaching. In the future, further development of educational technologies based on artificial intelligence is expected, which will lead to an increase in the quality of education and an expansion of digital education opportunities.

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