European Journal of Emerging Technology and Discoveries
ISSN (E): 2938-3617
Volume 2, Issue 10, October - 2024

THE ROLE OF ARTIFICIAL INTELLIGENCE IN THE SYSTEM EDUCATION

Shukurov Shuxrat Zayniyevich
Senior Lecturer of the Military Security Department of the
Academy of the Armed Forces of the Republic of Uzbekistan

Abstract
Today, artificial intelligence (AI) is present in numerous aspects of society, with its influence expanding rapidly. AI is increasingly being applied in various fields, including education. Defined as a branch of science in which machines, particularly computers, perform tasks that typically require human intelligence, AI focuses on enhancing human-machine interactions through technologies like smart systems, natural language processing, speech recognition, and machine vision. Globally, the demand for AI is on the rise. From real estate to digital marketing, AI has transformed numerous industries, and education is no exception. It plays a significant role in teaching and learning processes. Currently, schools and universities are incorporating AI to refine their teaching approaches and achieve better outcomes. This paper discusses the significance of artificial intelligence in the field of education.

Keywords: artificial intelligence, AI, the Internet, education, machine learning, educational data mining, algorithm.

Introduction

Today, in our country, great attention is paid to the field of education. Work is underway to improve the system, including the use of modern technologies to adapt the education system to high standards and modern requirements. Our opinion can be confirmed by observing the implementation of measures aimed at improving the system, such as assisting the integration of modern technologies, adapting the education system to high requirements, and meeting the requirements of the times.

The development and implementation of artificial intelligence (AI) applications for secondary and higher education enables students to learn subjects and teachers to positively change the way they teach. AI applications can offer personalized learning experiences for students and offer innovative solutions to educational challenges. A notable feature of artificial intelligence is its ability to evaluate and take actions that best achieve specific goals. Currently, artificial intelligence includes algorithms and software systems designed to perform various tasks, some of which can be performed by humans.

METHODS

To apply artificial intelligence (AI) effectively in education, a range of techniques and technologies is essential, such as programming (e.g., web and mobile development), machine learning algorithms (including regression, classification, and clustering), and internet connectivity. As mentioned, these techniques play a vital role in integrating AI into educational systems. Programming, for instance, is critical for developing AI-powered applications that users can access via desktop, web, or mobile platforms (Android and iOS). [1, 403-407]

Machine learning algorithms are another key aspect. In educational technology, automation significantly aids teachers in identifying students' success factors and areas for improvement. With adaptive teaching programs, predictive modeling, and personalized learning strategies driven by machine learning and AI, educators can monitor and enhance teaching quality. Analyzing data on students' learning behaviors helps teachers understand individual strengths and weaknesses, fostering a results-oriented learning culture based on accurate information. Through data processing and AI-integrated machine learning frameworks, online learning platforms are continuously improving to provide personalized learning experiences for students.[2]

AI also opens doors to adaptive learning tools and educational games designed to cater to individual student needs. Education 4.0, augmented by intelligent sensors and wearable devices, deepens insights into learning by combining experiential data from online practices with real-time data from various sources. This emerging era of education leverages intelligent sensors and devices to create a connected, data-driven environment where learning experiences are more accessible and customized.

Machine learning (ML) is defined as a field that enables machines to "learn" from data, often through pattern recognition. Applications in ML include dataset mining, semantic processing (recognizing, reasoning, understanding, and interacting), computer vision, and speech recognition, which are instrumental in providing support for engineering and technical education. Technologies like computer-supported cooperative work (CSCW) enable teams to collaborate across locations through software solutions, facilitating group coordination in a project-based learning environment. [3, 464]

Maintaining the functional integrity of computer systems is essential for administrators, who perform diagnostics, troubleshooting, and repairs. In this context, “smart” systems and web-based gadgets catalogued as part of the “smart stuff” infrastructure support both education and administration. Virtual Twin technology models the cognitive processes of educators, helping simulate learning environments. Computational innovations-such as merging simulated and physical learning spaces-continue to redefine the learning landscape. [4, 12-27]

Data mining algorithms, often referred to as machine learning algorithms, are applied to identify patterns and statistical insights that inform future research. Virtual instrumentation combines software customization with modular measurement hardware to create user-defined measurement systems, supporting detailed and flexible analysis within educational environments.

DISCUSSION AND RESULTS

One of the most popular textbooks on artificial intelligence is Artificial Intelligence: A Modern Approach by Stuart Jonathan Russell and Peter Norvig. It was first published in 1995 (the fourth edition of the book was already published in 2020). Artificial intelligence seeks to understand intelligent beings and create new intelligent beings. "Although no one can predict the future in detail, it is clear that computers with intelligence equal to or greater than that of humans will have a significant impact on our daily lives and the future development of civilization," they say.

ISSN (E): 2938-3617
Volume 2, Issue 10, October - 2024

In the modern era, projects have been developed to study foreign experience in improving the field of education, to apply them creatively to practice, and to meet the requirements of the times. [5]

Decree of the President of the Republic of Uzbekistan dated December 29, 2016 "On measures to further improve the general education system in 2017-2021" No. PQ2707, "Measures to fundamentally improve the management of the general education system on" decisions "On measures to further improve the general education system" No. PQ-3261 dated September 9, 2017 and "Further improvement of the management of the general education system" PF-5198 decisions on measures" are part of such efforts.

The results of research on "artificial intelligence" solve the problem of understanding this field, unlocking the secrets of the human mind and creating machines with a level of intelligence comparable to or higher than that of humans. The main ability to model intellectual processes is the ability to perform on an electronic digital computer any function of the mind described in any language with a certain semantic meaning derived from a limited set of words. This process involves the convergence of human and technological capabilities, with technology working together rather than replacing human effort. We can observe an evolution towards artificial intelligence, which will not replace humans but augment human thinking. Directing this system to the field of education creates opportunities for its improvement and digitization. Today's efforts in the field of education are also going in this direction.

Personalized learning: AI applications can be used to provide personalized learning experiences for students. By analyzing student data such as test scores, homework, and learning preferences, AI can tailor learning content and materials to help students reach their full potential.

Improving adaptive learning processes: AI applications can be used to create adaptive learning systems that adjust the level of difficulty and pace of learning based on the individual progress and learning speed of students. This helps to keep students engaged and motivated, while ensuring that they learn the topics at an appropriate level of difficulty.

All-round student support throughout the learning process: AI applications can provide students with various support such as tutoring and counseling services through methods such as chatbots. For example, AI-powered chatbots can provide 24/7 support to students struggling with academic tasks or mental health issues.

Improve administrative efficiency: AI can also be used to streamline administrative tasks such as evaluation and monitoring. This frees up time for teachers to focus on teaching and guiding students, reducing time spent on administrative tasks.

Conduct predictive analytics: AI applications can predict student performance and identify at-risk students who may need additional support. By analyzing data about students' learning processes and achievements, AI can identify students' difficulties and implement the necessary measures to achieve success.

These efforts demonstrate the invaluable role of artificial intelligence in the development of education. As we continue to integrate innovation and technology into education, it is important to recognize the importance of artificial intelligence in shaping the future of education. It has become an important tool in improving the quality, accessibility and effectiveness of education. [6, 438-443]

ISSN (E): 2938-3617
Volume 2, Issue 10, October - 2024

CONCLUSION

If we need to conclude, it is necessary to introduce digital technologies in the field of education and successfully integrate the field of education with them. Information technologies play an important role in the development of people, their place and influence in their personal and professional development, in the creation and formation of their independent skills, and in improving their professional skills.

Nowadays, much attention is paid to the field of education. Encouraging young people in the field of education, organizing their time in a meaningful way, carrying out various spiritual and enlightening activities, and using organized activities instead of roundtable discussions with young people are being implemented. Studying the relationship between criminal proceedings and various legal problems that do not exist for the first time, daily issues with parental feelings, strengthening family ties, etc. problems and issues. We live in a modern scientific society, but our youth are also at war with the times. These systems are being carried out along with the use of a number of different idle networks, which can have a negative impact on the education of today's youth. Therefore, it is necessary to direct the youth to the field of education. In the development of this field and the widespread introduction of artificial intelligence in the field of education, we must adapt the field of education to the requirements of the times.

REFERENCES

1. N.A. Shermukhamedova, Research methodology. T. "Science and technology", 2014, pp. 403-407.
2. Kamilova R.Sh. Abdulatipova M.A. iskusstvennyy intellect // Published in 2013, Vypusk May 2013, Ekonomicheskie nauki.
3. Ayupov R.H., Tursunov S.Q. Digital technologies. Study guide. Tashkent: "Lesson Press" publishing house, 2023. 464 pages.
4. Romero C., Ventura S. Data mining in education //Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery. – 2013. – T. 3. – №. 1. – C. 12-27.
5. Kučak D., Juričić V., Đambić G. MACHINE LEARNING IN EDUCATION-A SURVEY OF CURRENT RESEARCH TRENDS //Annals of DAAAM & Proceedings. – 2018. – T. 29.
6. Ciolacu M. Et al. Education 4.0-Fostering student's performance with machine learning methods //2017 IEEE 23rd international symposium for design and technology in electronic packaging (SIITME). – IEEE, 2017. – C. 438-443.