

SECTION 11.

COMPUTER AND SOFTWARE ENGINEERING

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ARTIFICIAL INTELLIGENCE IN THE FIELD OF PROFESSIONAL EDUCATION AND DEVELOPMENT

In today's rapidly changing world, technological advancements demand that professionals continuously update their knowledge and skills. In this context, artificial intelligence (AI) emerges as a powerful tool capable of significantly transforming professional education and development processes. The use of AI enables not only the automation of routine tasks but also the personalization of learning, providing each student or professional with the necessary resources and support to achieve their career goals. This makes professional education more adaptive, individually focused, and aligned with the demands of the modern job market.

AI has already contributed to many aspects of professional education, from learning platforms to corporate training programs. One of the most significant areas where AI is applied is personalized learning. By analyzing large volumes of data related to a learner's preferences, progress, and learning style, AI-based systems can create individualized learning plans that best meet the needs of the student. For instance, platforms like Coursera and edX use AI algorithms to tailor course materials and recommendations based on previous test results and student activity [1].

Another crucial aspect is automated assessment and feedback. AI allows not only for the quick and accurate grading of assignments but also for providing students with detailed feedback that helps them better understand their mistakes and work on improving them. This is particularly important in large educational programs, where human resources for grading assignments may be limited. Through

tools like automated assessment systems, high accuracy and objectivity of results can be ensured, which is critical for maintaining the quality of education.

The corporate sector also actively utilizes AI to enhance employee skills. Adaptive learning systems powered by AI can automatically adjust training programs to the needs of the company and the skill level of employees. This enables quick and efficient preparation of specialists for new tasks, which is crucial in highly competitive industries such as IT or finance. For example, IBM Watson, an AI-powered platform, is widely used to develop personalized learning trajectories for employees, allowing them to quickly acquire new skills and knowledge.

Despite the numerous advantages, the implementation of artificial intelligence in professional education comes with its challenges. One of the main concerns is data privacy. Collecting and analyzing large amounts of personal information from students and employees requires a high level of data security. Additionally, there is the issue of ethical decision-making by AI in the learning process, particularly regarding the potential replacement of human instructors with automated systems [2].

However, the prospects for AI in education and professional development remain overwhelmingly positive. The integration of artificial intelligence into educational processes not only enhances learning efficiency but also offers opportunities for continuous professional growth. In the future, we can expect the emergence of even more adaptive and intelligent systems capable of providing quality education for professionals across various fields at all stages of their careers.

Artificial intelligence is becoming an integral part of modern professional education and development. Its implementation significantly improves the quality of learning, ensures a personalized approach, and enhances the adaptability of educational programs. Despite the challenges associated with integrating AI into educational processes, its benefits are clear. In the future, AI is likely to become a key factor in the success of training professionals who can meet the demands of a rapidly changing job market.

References:

1. ВИКОРИСТАННЯ ШТУЧНОГО ІНТЕЛЕКТУ В ОСВІТІ. (2021). *Modern Information Technologies and Innovation Methodologies of Education in Professional Training Methodology Theory Experience Problems*, 14-22. <https://doi.org/10.31652/2412-1142-2021-59-14-22>
2. Мар'єнко М., & Коваленко В. (2023). Штучний інтелект та відкрита наука в освіті. *Фізико-математична освіта*, 38(1), 48-53. <https://doi.org/10.31110/2413-1571-2023-038-1-007>