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«ИССЛЕДОВАНИЕ ЭТИЧЕСКИХ ПРОБЛЕМ ВНЕДРЕНИЯ ТЕХНОЛОГИЙ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В ВОЕННОЕ ДЕЛО».

Аннотация. В данной статье описана история искусственного интеллекта, курс развития искусственного интеллекта, обзор состояния различных исследований и разработок на текущее время, применения искусственного интеллекта в различных отраслях человеческой деятельности, в том числе чат-бот с искусственным интеллектом ChatGPT. Также исследование анализирует этические аспекты использования искусственного интеллекта (ИИ) в военной сфере. В статье рассматриваются моральные и правовые вопросы, связанные с автономностью, прозрачностью, ответственностью и безопасностью при использовании ИИ в военных технологиях. Будут выявлены потенциальные риски и вызовы этого явления, а также рассмотрены существующие этические рамки и нормы.

Ключевые слова: Искусственный интеллект, технологии, программа, алгоритмы.

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«ӘСКЕРИ САЛАДА ЖАСАНДЫ ИНТЕЛЛЕКТІНІ ҚОЛДАНУДЫҢ ЭТИКАЛЫҚ МӘСЕЛЕЛЕРІН ЗЕРТТЕУ».

Аңдатпа. Бұл мақалада жасанды интеллект тарихы, жасанды интеллектті дамыту курсы, қазіргі кездегі әртүрлі зерттеулер мен әзірлемелердің жай-күйіне шолу, жасанды интеллектті адам қызметінің әртүрлі салаларында қолдану, соның ішінде ChatGPT жасанды интеллектпен чатбот сипатталған. Зерттеу сонымен қатар әскери салада жасанды интеллектті (AI) қолданудың этикалық аспектілерін талдайды. Мақалада әскери технологияларда AI қолдану кезіндегі автономия, ашықтық, жауапкершілік және қауіпсіздікке қатысты моральдық және құқықтық мәселелер қарастырылады. Осы құбылыстың ықтимал тәуекелдері мен сын-қатерлері анықталып, қолданыстағы этикалық негіздер мен нормалар қарастырылады.

Түйінді сөздер: Жасанды интеллект, технологиялар, бағдарламма, алгоритмдер.

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"EVALUATING THE ETHICAL IMPLICATIONS OF ARTIFICIAL INTELLIGENCE IN MILITARY OPERATIONS."

Abstract. This article describes the history of artificial intelligence, the course of artificial intelligence development, an overview of the current state of various research and development, the use of artificial intelligence in various branches of human activity, including the chatbot with artificial intelligence ChatGPT. The study also analyzes the ethical aspects of the use of artificial intelligence (AI) in the military sphere. The article examines the moral and legal issues related to autonomy, transparency, responsibility and safety in the use of AI in military technologies. Potential risks and challenges of this phenomenon will be identified, as well as existing ethical frameworks and norms will be considered.

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Ключевые слова: Искусственный интеллект, технологии, программа, алгоритмы.

Introduction. President of the Republic of Kazakhstan Kassym-Jomart Tokayev, speaking at a meeting of the Council of Foreign Investors, noted that the widespread introduction of new concepts and technologies, such as artificial intelligence, blockchain, Internet of Things (IoT) and Big Data, leads to a change in the rules of the game in almost all industries: from agriculture to finance. Addressing the Address "The Economic Course of a fair Kazakhstan" on September 1, 2023, the President of the Republic of Kazakhstan stressed that over one trillion dollars will be invested in the field of artificial intelligence in the next few years in the world. The successful development of this sector can provide significant GDP growth to individual countries. This article is aimed at analyzing the ethical aspects of the use of artificial intelligence (hereinafter - AI) in the military sphere. The article aims to address the moral and legal issues related to the use of AI in military technologies, as well as to identify potential challenges and risks associated with this phenomenon. The analysis will address issues of transparency, responsibility, autonomy and security in the use of artificial

intelligence in the context of military operations, as well as possible ethical frameworks and norms that may regulate its use in this area.

The purpose of the study is to provide an extensive understanding of the ethical aspects of the use of artificial intelligence in the military sphere, as well as to offer specific recommendations for the development of ethical standards and legal frameworks.

Research objectives:

1 Description of the history of artificial intelligence, the course of artificial intelligence development, an overview of the current state of various research and development.

2. To sort out what the three main types of artificial intelligence are today and at what stage they are.

Materials and methods. The research was conducted by studying literary sources, as well as materials from open media sources in the field of information technology. The study was conducted using a theoretical level of cognition.

Artificial intelligence is a field of computer science that deals with the creation of systems and programs to perform tasks that usually require a human mind.

Besides that, there is another definition. Artificial intelligence is a complex of technological solutions that allows you to simulate human cognitive functions, including self–learning and the search for solutions without a predetermined algorithm and to obtain results comparable, at least, with the results of human intellectual activity when performing specific tasks. Later, artificial intelligence began to include a number of algorithms and software systems, the distinctive feature of which is that they can solve some problems the way a person thinking about their solution would do.

By introducing artificial intelligence, humanity solves many problems by teaching this technology, implementing it in all spheres of human activity - in banks and shops, in medicine and industry, transport and even security-related issues.

Since the advent of modern computer technology, people's lives have changed radically. It is expected that artificial intelligence, which will be comparable to human intelligence, will receive a wide range of applications.

There are three stages in the development of artificial intelligence:

1. In the 1950s, work on artificial intelligence began for the first time, it consisted of solving two specific tasks. First, in 1954, the REND Corporation began to create a chess program with the assistance of Alan Turing and Claude Shannon. The second was in 1963, at a conference on artificial intelligence at Dartmouth University, programmer John McCarthy presented the programming language "LISP", designed for functional programming.

2. The second stage of the development of artificial intelligence includes the development of logical programming and the creation of expert systems in the late 60s. Meanwhile, the development of machine translation systems has progressed significantly. Machine translations became especially relevant during the Cold War.

The second stage also involves the development of more advanced applications for checkers and chess. The first chess championship was held for machines playing chess with each other. It is important to emphasize the achievement of the Kaisa chess program, the victory became world-class news in 1974.

3. Today, interest in artificial intelligence is reviving again – this is the third stage and differs from the first two in both scope and volume, today there are both technical means and significantly advanced developments in this area to solve the problem of artificial intelligence. The beginning of the third stage is considered to be the victory of the Deep Blue machine over the world chess champion G. Kasparov in 1997.

The current stage is characterized by a very sharp development of artificial neural networks. These are networks that mimic the work of biological neurons. The simplest artificial neural network has three layers of neurons. The first layer receives signals from the outside world, the inner layer processes these signals, well, and the output layer generates and outputs the result. However, there can be many internal or hidden layers.[1]

Today, experts in the field of computer systems distinguish three main types of artificial intelligence:

Weak artificial intelligence (Narrow AI) - specializes in solving specific tasks and has a limited area of expertise and does not have self-awareness or general intelligence. As an example, the following voice assistants can be used: Siri, Alice, Google Assistant, recommendation systems, automatic classification algorithms, etc.

Strong Artificial Intelligence (General AI) - this type has the ability to understand, learn and perform tasks in different fields, similar to human intelligence, and is also able to solve a variety of tasks and adapt to new information.

Artificial intelligence of the highest order (Super AI) is a hypothetical level that surpasses human intelligence in all aspects, has the ability not only to understand and solve problems, but is also able to think creatively, as well as improve oneself. However, such a level of artificial intelligence has not yet been achieved.

Artificial intelligence is currently at the first stage of development - representatives of "weak" artificial intelligence "work" as voice assistants, "watchmen" who recognize faces and other areas where machine learning systems are applicable, as a subspecies of artificial intelligence. For example, a well-known online translator is also a representative of weak artificial intelligence.[2]

The ability of artificial intelligence to analyze data flows and identify certain patterns has been actively used in various commercial projects to study consumer behavior. Artificial intelligence algorithms can analyze the solvency of bank customers to identify potential malicious defaulters. Artificial intelligence is used in medicine for the initial diagnosis of various diseases based on certain studies (for example, artificial intelligence can detect viral pneumonia from tomography images). At the height of the coronavirus, programs analyzed parameters such as the patient's voice and breathing, and the presence of a cough over the phone to identify signs of infection. There are programs that process unlimited amounts of information, images and other data. They write articles, make translations and much more. Voice assistants such as Siri or Alice make it easier for users to navigate and optimize many other processes.

At the end of 2022, ChatGPT, an artificial intelligence chatbot, was launched and attracted attention with its extensive capabilities.

ChatGPT (from the English Generative Pre-trained Transformer "generative pre–trained transformer") is an artificial intelligence chatbot developed by OpenAI and capable of working in an interactive mode, supporting queries in different languages. ChatGPT is a large language model, which was trained using the methods of teaching with a teacher and reinforcement learning. This chatbot is based on the language model from OpenAI - GPT–3.5, an improved version of the GPT-3 model. On March 14, 2023, the GPT–4 language model was released.

In the new version, artificial intelligence has the ability to process and write code, create texts, translate, get accurate answers and use the context of the dialogue for answers, although its actual accuracy has been criticized.

In early February 2023, Reuters, citing the Swiss holding company UBS, reported that in 2 months the audience of active ChatGPT users reached 100 million people. Thus, the application set a historical record for the growth of visitors. In mid-2023, the official ChatGPT app was released for the iOS and Android operating systems.

Since the spring of 2023, due to the growing public concern about the rapid development of artificial intelligence technologies, the training of the new ChatGPT-5 neural network model has currently been suspended.

The use of artificial intelligence benefits humanity in terms of reducing time and money costs. His ability to improve every day promises good prospects for the future in terms of accelerating the economy. The participation of artificial intelligence makes it possible to improve life and make it more comfortable, and work much more efficient.[3]

Experts believe that the advent of strong artificial intelligence should be expected no earlier than half of this century, and given the aggressive development, it is possible earlier. A distinctive feature of artificial intelligence will be self-awareness, at this stage machines can show emotions, for example, show emotions for a pre-programmed reason. This will take the machines to a whole new level of intelligence. The next super artificial intelligence will seriously surpass humans in

intellectual terms, as it will be endowed with the ability to improve itself and create parallel algorithms.

Also, the use of artificial intelligence in the military sphere is playing an increasingly important role, bringing innovations to the field of defense and security. Here are a few aspects of using artificial intelligence in military operations:

Data exploration and analysis. AI provides more efficient and faster analysis of a variety of data, such as satellite images, video recordings and text information. Machine learning algorithms allow you to identify hidden patterns and trends, improving the quality of intelligence information.

Cyberwar aspects. AI is used to analyze cyber threats and detect attacks in real time. Machine learning algorithms help identify anomalies in cyberspace and predict potential threats. AI is used to create virtual training environments where military personnel can conduct exercises and simulate various scenarios. This helps to improve the training of forces and reduce risks in real combat conditions. However, despite all the advantages, the use of artificial intelligence in the military sphere also raises important ethical and legal issues that require careful attention and regulation.

Ethical issues in the use of autonomous artificial intelligence systems capable of making decisions about the use of force raises questions about morality and ethics in military operations. The introduction of artificial intelligence increases vulnerability to cyberattacks. Attacks on artificial intelligence control systems can have serious consequences.[4]

Loss of human control. Autonomous systems may encounter situations that were not foreseen by programmers, which can lead to unpredictable results and loss of human control.

The spread of military technology. Artificial intelligence technologies in the military sphere can be used for unfriendly purposes, threatening global stability.

Creation of autonomous weapons. The development and use of autonomous military weapons raises concerns about possible violations of international norms and treaties, as well as the loss of a human component in making decisions on the use of force.

Economic costs. The introduction of artificial intelligence in the military sphere requires significant financial investments, and unsuccessful projects can lead to large losses. In general, balancing the benefits and risks of using artificial intelligence in the military requires careful consideration and regulation to minimize potential negative consequences.[5]

Conclusion. At the stage of the emergence of artificial intelligence, it was mainly assumed that only the functions of text translation, object recognition and the meaning of spoken words would be available to it. But today it becomes clear that its possibilities are almost limitless. Artificial intelligence is included in a variety of areas of life. Now the "weak" artificial intelligence acts as an assistant and assistant, but progress is inexorable and no one can say for sure what the intellectual growth of AI to the "super" stage will turn out for humanity. However, the use of artificial intelligence (AI) in the military sphere is a dual sword, combining potential benefits and negative aspects. On the one hand, integrating AI into military operations can improve the efficiency, accuracy and responsiveness of decision-making. On the other hand, there are serious ethical and legal issues regarding the safety, control and potential misuse of this technology.

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