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ARTIFICIAL INTELLIGENCE, ETHICAL CONSIDERATIONS, FUTURE TRENDS AND CHALLENGES

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ABSTRACT

Artificial intelligence has somehow become the force that has transformed various sectors, including the military. Moreover, AI technology has revolutionized the military with its ability to rapidly process large amounts of data, make decisions, and analyze complex patterns.

Analyzing the question of how it is used and what ethical norms exist in military structures is not an easy task, because artificial intelligence components are supported by the defense sector in many directions - autonomous weapons and vehicle systems, intelligent command and control systems, predictive maintenance performance, logistics and maintenance services. , cyber security, intelligence and surveillance, decision support systems, simulations and training, artificial intelligence applications and more. We have already discussed these issues in detail in the main part of the book, analyzed and discussed all the relevant issues related to the introduction, use and development of artificial intelligence technologies.

The development of artificial intelligence has raised hopes of bringing great benefits, which can be reflected on the one hand in the Internet of Things (IoT), a huge set of capabilities, such as unmanned surveillance and targeting, health monitoring of soldiers, situational awareness and other critical applications. The trend is that decisions in future wars will require seconds, minutes, or even hours rather than days and weeks. This implies that the operational environment should be analyzed. By using artificial intelligence and machine learning, rapid information can be delivered to the frontline, which also means rapid decision-making. The Internet of Military Things is known to encompass many different tools, from battlefield sensors and weapon systems, to surveillance, intelligence, communications, wearables, and sensors on ships, aircraft, tanks, and the body. These tools collectively share an unprecedented amount of information in real-time during the war. The success of this issue depends on the ability to collect and store huge amounts of data from thousands of devices. However, a much more problematic issue is to quickly understand this information and deliver results to the fighters so that said information is useful and can be used.

Ethical norms for the use of artificial intelligence differ from general ethical standards, artificial intelligence is more automated and scalable than most other processes, roles also include ethical risks - risk mitigation, legal risks reduction, human discrimination reduction, etc.

Keywords: artificial intelligence, ethics, norms, military field, security, war, challenges, technologies, defense, attack

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INTRODUCTION

Ethical considerations are relevant worldwide, representing an important "tool" for eliminating the shortcomings of artificial intelligence and controlling its development. In the direction of artificial intelligence, we can present three main problems:

1. Biased data;
2. Improper use;
3. Wrong algorithm.

Often, when the data is biased, the analysis, response is limited and limited by the data the AI technology is working on. As for misuse, many issues can be combined, but the most important thing is who gets into the hands of this or that artificial intelligence tool. In the hands of hostile states and non-state actors, AI can become a weapon. If the algorithm is wrong, then the whole working principle is wrong, which cannot give us any positive results. In general, ethical norms represent various methods of what and how to do things correctly, according to standard. The only difference between ethics and the ethics of using artificial intelligence technologies is automation and scale. Various ethical challenges of artificial intelligence are automated due to its essence and nature. It is, in a way, like a piece of software, where partly the decision must be coded and partly not, or it can be completely coded, as is the software. Determining proper ethical norms in this direction is difficult, because even the desire to be automated can lead to a violation of ethical norms, because it can be aimed at power, wealth.

MAIN PART

Here we can cite as an example the words of the ancient Greek philosopher **Aristotle**: "Ethical behavior is virtuous behavior, and virtue is the golden mean between two extremes." Therefore, we can say that ethics is the pursuit of perfection in virtues.

The German philosopher **Immanuel Kant** says: "We must act so that the maxim of our actions is a universal law."

This implies being guided by rules, acting, which is not a very comfortable issue for the work of artificial intelligence - it is difficult and even dangerous in some cases. Here there are also differences between ethics, as normative ethics, there are also many theories of applied ethics. For example, an action for the common, global good may be harmful to an individual person, which is difficult to regulate in practice. If we are guided by utility, in this case we may make individual damage permissible, but if we are guided by principles and put utility in the background, in this case the mentioned issue will be regulated differently. Principles and rules sometimes do not coincide with each other, they are mutually exclusive, therefore, they must be reconciled. There are also case-based methods based on which an ethical framework is

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developed. Since artificial intelligence is essentially automated, humanity is faced with an ethical framework that poses a major challenge. People who work on ethics and norms agree that ethics are the determinants of what is right and just. In addition, there are criteria that lead to differences of opinion - how to evaluate right and wrong. Often the theories related to ethics are contradictory.

The United States Department of Defense defines five key ethical principles for artificial intelligence, based on the recommendations of the Defense Innovation Council:

1. responsible/Responsible;
2. Fair (equal) /Equitable;
3. Traceable (visible) /Traceable;
4. Reliable/Reliable;
5. Governable.[3]

Adherence to the mentioned five basic ethical principles will significantly improve the use of new technologies that work on artificial intelligence algorithms in all fields, but it should be noted here that it is difficult to implement, implement and develop, because ethical standards and norms are not the same on a global scale, all countries are trying to to observe own opinions and standard approaches. Consequently, the world is facing the development of new technologies that will be out of control. For example, scientists and technological mega-organizations are developing robots of their own creation, which are slowly appearing around us in all fields. According to some experts, robots will completely replace humans in wars in the future, countries will fight only with technological advances, where there will be minimal human casualties. To what extent this can be reality, we cannot say for sure, but the matter goes here. There are many nuances in this case, for example, robots will not run away from the war in times of danger, they will not disperse, they will not leave the army, they will not start robbing the population. In this case, it is easier for the military leadership to know what combat resources they have and what can be done. There is less chance of making a mistake and there will be no need to think about how to evaluate one's abilities, there will be no room for overestimation and illusion.

The idea of using robots instead of people in war appeared about a century ago, "In 1935, in Britain, the first unmanned aerial vehicle was invented, which was controlled by a remote control, it had the ability to cover 5 kilometers, and it had a maximum speed of 170 kilometers per hour. It was not a combat vehicle. In 1948, the first aircraft called AQM-34 was

[3] *Fish A., "IoT, AI, and the future battlefield", p. 1, 2022. https://militaryembedded.com/ai/deep-learning/iot-ai-and-the-future-battlefield*

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invented, which could perform combat reconnaissance missions, it was a kind of test use, in 1951 mass production began."[4]

Now it's the 21st century, leading states, international organizations, mega-companies are involved in a kind of global race, developing walking robots, two-legged and four-legged combat vehicles. This process started "since 2005, when a four-legged combat robot that could carry a load of up to 110 kilograms was tested for the first time. One of the biggest disadvantages of this robot was the noise. Such a robot is useless for army standards. Of course, all this is improved over time, the first real military robot was created for reconnaissance and surveillance, which is equipped with a machine gun, grenade, laser weapon, speaker, siren and fire suppression system. The combat vehicle in question is semi-autonomous, it works in autonomous mode, although the operator can intervene in decisions."[5] Then, both defensive and offensive robotic autonomous systems for patrolling and cargo delivery were already developed and created.

Combat robots are gradually being introduced in the military field and their capabilities are expanding every day. From the point of view of use, the above, of course, provides great opportunities, but it is interesting to see how human replacement is possible soon. Robots working on artificial intelligence algorithms should replace highly qualified personnel in the military field, and the problem is also their high cost. At this stage, this fact remains a fact. The United States government claims to be building robots that will be low-cost and can be completely rebuilt or easily replaced if damaged or malfunctioned. However, it is still difficult to talk about this issue.

As for speculation and opinion, according to some experts, artificial intelligence and robotics will increase colossally in new military conflicts. For example, we have the Russia-Ukraine war, where almost all the technological achievements available today are used. Also, up for debate is how well AI technologies can compete with the human brain on the battlefield. Several researchers and experts claim that these systems are quite capable of competing with, and in some cases even surpassing, the capabilities of the human brain on the battlefield. Some in the military argue that this is not possible and that these technological advances can simply be an additional power for humans to have more enhanced capabilities on the battlefield.

Today, military robots on land are mostly wheeled vehicles. Their arsenal of weapons is diverse - autonomous cannons, guided anti-tank missiles, grenade launchers and so on. The unsolvable problem of the organizations working on these issues is the issue of control and

[4] *Leotronics, "Wars of the future: Can combat robots fully replace humans?", p. 1, 2023. https://leotronics.eu/en/blog/wars-of-the-future-can-combat-robots-fully-replace-humans*
[5] *Leotronics, "Wars of the future: Can combat robots fully replace humans?", p. 1, 2023. https://leotronics.eu/en/blog/wars-of-the-future-can-combat-robots-fully-replace-humans*

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throughput. This means that the issue of maintaining communication channels in certain places is much more difficult than, for example, in the air, terrain and buildings present a kind of problem. Therefore, the frequency range of wheeled or other types of military robots is smaller than that of unmanned aerial vehicles. It is also a problem for wheeled and tracked robots to overcome uneven terrain, rubble, rocky areas, and stairs in between. Based on these problems, we can draw the conclusion that at this stage it is unrealistic to completely replace manpower with combat robots. However, they can be good helpers.

The current situation poses great challenges for humanity, as we have already discussed - in the direction of ethics, in the legal direction, in the direction of various artificial intelligence applications, in the direction of intellectual property and others. A full autonomous weapon system powered by artificial intelligence will be a challenge in itself - if something goes wrong, it doesn't matter whether it's a hacking of the system or simply being damaged and out of control. For example, if he starts raiding the civilian population or harming his own military, who will be responsible for all this, who will be judged? The questions are there, the answers are not.

CONCLUSION

Key insights and findings

Wars have always been waged and controlled by humans, they generally arise based on human disagreements, and humans, states, suffer losses. what is war It is an attempt by one party to forcefully change the behavior of the other party.

In general, we can say that the process that started a long time ago is now in an active phase, and it is impossible to stop it, and to adjust and comply with the regulations is difficult, but possible. All this requires joint, coordinated work and agreement. We focus on people, at the end of the day, no matter what technology exists, people are still responsible for everything, a lot depends on their decisions. If there ever comes a time when robots are in charge, it will probably be a different era, and now the main dominant is still man and his mind.

Industry 4.0, as people in the technology field call it, and which represents advances in automation, robotics and the Internet of Things, is invaluable, but the security challenges are also unequivocally increased, both in real and unreal, i.e. cyberspace. Caution, caution, and only caution, it behooves mankind, lest they make a fatal mistake. Let's face it, this will not be a mistake that the same humanity will be able to correct. Technologies, which we call modern today, tomorrow will already be stupid and backward compared to tomorrow, and of course, along with the good, the danger also increases. It is a fact that progress, technological revolution is accompanied by the possibility of setbacks and catastrophes, where there is success, there is also failure. What scientists do today, what they invent, implement and

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develop, it should be used for peaceful life, not for endless wars, massacres, nuclear threats and so on.

A robot - should it be a machine that replaces a person, or should it be an automaton that relieves a person of work and daily routine? Of course, it should be a machine that will not take away a person's livelihood, not replace it, but will help. Of course, the same desire exists in the case of war - it should be a defensive measure, not an offensive one. We understand that war has its laws, unfortunately, we are not yet living in an era when wars will no longer exist at all, but while it exists, while evil has not yet been defeated, what better way than to prepare for war to gain peace.

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