

the website can be done without any problems. Such plasticity, in combination with the ease of searching for digitized information due to the possibility of its indexing, creates unprecedented conditions for creating derivative works based on it. For a person of the digital age, freedom means not only the freedom to express one's opinion, as well as not only the freedom to have access to information, but also the freedom to create, implying the right to process and transform the information received.

The possibility of simultaneous access and use of a single copy of the work in electronic form by many people. If an analog copy of a work (printed book or cassette) can potentially be used by a very limited circle of people at the same time, then a file hosted on the server can be used by a large number of subjects simultaneously. This creates the conditions for the distribution of digital content by providing access to it online, as well as by ensuring the availability of information resources in general.

Any person who has access to the Internet can act as a publisher of digital content. On the one hand, this entails unprecedented opportunities to bring their ideas and works to the attention of third parties without the participation of publishers, distributors and other intermediaries. On the other hand, the more content is available to the user, the more difficult it is for him to orient himself in this array and find the right one, as well as the more difficult it is to draw his attention to a specific object. For subjects of Internet business, the diversity of digital content entails turning the user's attention into a resource, the value of which is due to its limitations. User attention is becoming a special kind of product, which is reflected in new models of advertising, which is becoming more targeted and causes a number of problems in the field of the protection of users' personal data and their right to privacy.

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#### **CREATIVITY AND ARTIFICIAL INTELLIGENCE**

**Key words:** *intelligence, artificial intelligence, computer, technology.*

Questions about the abilities of artificial intelligence are worried by humanity from the nineteenth century, from the time of research by C. Babbage, inventor of the first analytical computer, which was not destined to be realized due to lack of funding.

Today, society is concerned about issues related to ethical rules and legal regulation of the field of artificial intelligence; in the EU, Japan is developing commonly accepted rules in the field of artificial intelligence.

The above confirms that humanity is on the verge of change. The prospects for accelerating technological progress, the rapid development of artificial intelligence, neural networks, the integration of human with computer technology, and the enhancement of the abilities of the human brain at the expense of biotechnology – all this has called the science fiction writer Wendy to suggest in 1992 the concept of technological singularity, which, according to his predictions, should come about in 2030 as a hypothetical moment of complication of technological progress, after which it would be inaccessible to understanding.

At this time there are two approaches to constructing artificial intelligence, which are conventionally called algorithmic and with the help of self-study. In the first case, all the rules on which the intelligence operates is manually written, and in the second one an algorithm is created which itself learns on a certain large amount of data and allocates these rules independently. An algorithmic path that has its own positive aspects, such as predictability and ability to function within the programmed limits, has been defeated.

At the same time, artificial intelligence is built on the principle of self-learning, with the ability to develop and teach itself on the basis of the accumulated data, it allows you to act differently in similar situations, depending on previous actions, indicating that the potential of artificial intelligence remains uncertain and before the end is not explored. It should be borne in mind that the identification of artificial intelligence and robots is incorrect, since the latter are a form of embodiment and application of artificial intelligence.

At present, all the diversity of definitions of artificial intelligence can be reduced to the following three: weak artificial intelligence, strong artificial intelligence and artificial superintelligence:

«Strong artificial intelligence» (Strong artificial intelligence, ASI, proposed by philosopher John Searle, University of California, Berkeley, 1980), Artificial General Intelligence (AGI) is an artificial intelligence that is focused on solving all tasks that a person performs or can perform. Proponents of the theory of strong artificial intelligence believe that human thought is completely algorithmic, but it can be divided into a number of mathematical operations, and that engineers reproduce the human mind and create a truly self-conscious artificial intelligence, full of emotions and feelings that can fulfill any human task. But it must be emphasized that the developers of robotics and artificial intelligence should ensure that the person at any time will be able to control it.

«Weak Artificial Intelligence (WAI)», «narrow artificial intelligence» or «artificial intelligence» (Artificial Narrow Intelligence, NAI) is an artificial intelligence that is aimed at solving one or more tasks that a person performs or can perform. Lately, weak artificial intelligence is increasingly called Applied Artificial Intelligence (AAI). Proponents of weak artificial intelligence believe that it is possible to model human behavior, but artificial intelligence can never become a person because of the lack of self-awareness.

«Artificial superintellect» (Artificial Superintelligence, ASI, the term proposed by philosopher Nick Bostrom, Oxford Institute for the Future of

Mankind, 1998) is an intelligence that is much smarter than a better human intelligence in virtually every field, including scientific creativity, general wisdom and social skills. Assume also that he can have consciousness and have subjective experiences.

There are several approaches to the implementation of the idea of artificial intelligence, one of the most well-known and widespread – copying the work of the human brain (according to P. Wangu, this is the first version of the definition of the term – by structure). But, sharing the opinion of N. Bostrom, we believe that at the current level of understanding of the mechanisms of human brain work, this may somewhat restrict the search for possible variants of technological, algorithmic and programmatic construction of artificial intelligence. In our opinion, the most rational approach is seen in the detailed description of the functions of the brain (cognitive functions) of a person, functions of a rather high level of abstraction, which could be described in an algorithmic language. After such a description, there are wide opportunities for implementing the acquired algorithm for a specific brain function with a variety of software and hardware methods, methods and means that are known today or will be developed in the future.

Based on the foregoing, we will put forward the hypothesis that for legal science there is a sufficient representation of artificial intelligence in the form of a «black box», which is described by the function of «input-output», that is, the functional interconnection between input and output signals (information), which is equivalent a certain cognitive function of the human brain, but for which there is no known technical and technological details of the internal structure and functioning. In other words, if the input artificial intelligence is a set of some data, then the output according to a certain function can have information or «recognizable (recognized)» static or dynamic object (state of the object), which corresponds to this set of data, or about the result of the analysis (for example, correlation, cross-factor, etc.) of a large data set, or about the decision to change the position in the space of the states of the dynamic object (aircraft, the position of the firm in the market or the position of the state in foreign policy, etc.), or about the forecast of development with tuatsiyi or to change the purpose of operation and more.

This means that artificial intelligence carries out the processing (transformation) of the input information in accordance with the algorithms that implement the functions of the human brain, and knowledge pre-embedded in artificial intelligence or acquired in the process of self-development, into new information that can act as a direct or informational influence to manage some processes, or to act as source information for a new (next) stage of information processing.

Thus, artificial intelligence is a certain set of software and hardware methods, methods and means (computer programs) that implement one or more cognitive functions equivalent to the corresponding cognitive functions of a person.

Powerful development of robotics, artificial intelligence technologies, stable neural networks and cloud computing infrastructures, fuzzy systems technologies, entropy control, rooting intelligence, evolutionary calculations,

etc. led the European Parliament to adopt the resolution of 16.02.2017 with proposals to the European Commission regarding the norms of civil law in the field of robotics, governing their production, use, autonomy and impact on society in 2016 (2015 / 2013INL).

Notable in the Resolution are the three laws of robotics, that is, the mandatory rules of conduct for robots, which were first formulated by A. Azimov in the story «I, the robot» (1941), as well as the zero law proposed by him in a later work «Works and the empire» (1986). The first law proclaims that a robot can not harm a person, or by his inactivity to allow a person to be harmed. In accordance with the second law, the robot must obey the orders of a person, with the exception of those who contradict the first law. According to the third law, a robot must defend itself, unless its actions are in conflict with the first and second laws. A zero law proclaims that a robot can not harm humanity or its inactivity to allow humanity to be harmed. At the same time, the document stresses that the said laws should be addressed primarily to developers, manufacturers and operators of robots capable of self-study and autonomous functioning, since the corresponding laws can not be translated into machine code.

Thus, responsibility for the implementation and observance of these fundamental ethical principles of the operation of robots has been postponed at the stage of their invention, production and use.

Thinking about the growing role of artificial intelligence, K. Bower of the Law School, Curtin (Australia), says that society is inclined to consider robots as an object, while if machines are able to make decisions and act on their own accord if they can cause harm or to be responsible for committing an action, it will be time for them to be treated not as an object of ownership, but as a person possessing some kind of rights.

The EU Resolution recognizes the increase in autonomous and cognitive abilities of robots (software that controls them), which translates them into more than simple tools and makes ordinary rules of liability, such as contractual and tort liability, insufficient. The question of the possibility of applying to complex robots of structures of a physical, legal entity (for example, corporation), animals or objects is analyzed. Taking into account the analysis conducted there is a proposal to give the most complex works the legal status of "electronic persons".

At the same time, given that computers still have a long way to go in line with human intelligence, it is suggested that the introduction of the category of «electronic entities» in the EU resolution is premature.

The EU Directive on liability for damage caused by work, provides for liability for damage caused by industrial defects, the responsibility of the manufacturer. Nevertheless, as scientists improve the skills of artificial intelligence to learn and adapt in a new environment in unpredictable circumstances, the manufacturer is more difficult to predict problems that could be harmful to work.

This issue does not lose its importance, given that scientists do not stop and continue to work on developing more sophisticated artificial intelligence. So, scientists at the Massachusetts Institute of Technology MIT, who have

been engaged in such a development for more than a decade in a row, presented the artificial intelligence with the thinking of a psychopath killer named Norman, in honor of the character from the movie «Psycho» by Alfred Hitchcock – the murderer of Norman Bates.

Thus, the statement of I. Mask, recognizing along with the high benefit of artificial intelligence (during the diagnosis of cancer and the detection of suicidal behavior), the existence of the danger of its creation through the ability to learn, improve, solve problems and react without the participation of a person is actualized. However, no car can be taught to express emotions, to be guided by morals, to make exceptions, taking into account, for example, the repentance of a guilty person. According to I. Mask, the problem lies in the fact that human feelings are not subject to robots, but it is not known what conclusions can reach the cars that will make them uncontrolled and dangerous as nuclear weapons.

In view of the above, the EU Resolution contains proposals for amending legislation in the event of complication of robotics, its development, the growth of its sophistication, in proportion to the autonomy of robots and the reduction of producers' liability, and the introduction of compulsory liability insurance «without fault».

The proliferation of autonomous mechanisms updates a number of issues regarding legal liability for damages caused by autonomous means of transport, and the possibility of litigation against robotic surgeons.

On the one hand, it is obvious that the responsibility lies with the manufacturers, but there may be difficulties with their identification. If open source software is used by stand-alone vehicles, who will be the defendant and who will be prosecuted if there are millions of «creators» around the world?

In the field of creativity, developers also seek to improve the activities of artificial intelligence. The development of software that creates soundtracks for videos that are no different from natural sounds, robots capable of reproducing a handwriting that is no different from the human, artificial intelligence that wins in the best players in the world of poker is under development.

Facebook develops artificial intelligence that can process and reproduce music from one genre to another, using different musical instruments, by encoding. For example, recording a symphony orchestra performing Bach, turning it into a piano performance.

That is, technologies create not only possibilities for reworking existing works or expanding people's ability to create works of art with software in a new way, but about creating technologies that allow computers to create new works without practicing human involvement.

Acknowledging the rapid growth and development of artificial intelligence, A. Braid says that society is gradually, but rightly, moving in the era of digital authorship, where artificial intelligence will relatively autonomously generate (create) works that will not be different from the works of human authorship.

The question of the possibility of recognizing and protecting works generated by the computer, new intellectual property objects and copyrighted

works remains controversial, since creativity has so far been recognized only by man.

Scientists from various fields of science are discussing the possibility and probability of creating artificial intelligence, able to create creative objects in the same way as a person. The solution to such a question is compounded by the lack of a unified understanding of the notion of creativity in the field of jurisprudence and other branches, and the content of the definition. If creativity is understood from the point of view of human consciousness, at least as in copyright law, then in such conditions, machines will never be able to achieve it, regardless of their complexity, skills and abilities.

Skeptics of the possibility of creating strong artificial intelligence quoted Adu Lovelace, the daughter of Lord Byron, who worked with Charles Babbage and in 1843 warned against excessive optimism about the potential of the developed analytical mechanism, and recommended avoiding exaggerated ideas about the possible abilities of this mechanism.

Acknowledging the achievements of substantial progress and technological advances since the speech of A. Lovelace, it has not lost its relevance yet. Despite the fact that today's computers are more powerful than their predecessors in terms of memory and data processing, they still rely on people who set the rules on which they are futile. Just as a photographer makes a photo, standing behind the camera, programmers are behind the development of each software and neural network. According to A. Lovelace, people create rules, and artificial intelligence follows them, only acting within certain limits.

Taking into account the above, given the rapid development of technology, the issue of legal regulation of artificial intelligence and the generation of creative objects by computing technology becomes more relevant and requires further research.

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#### **LEGAL PROBLEMS OF SUPPLY OF THE CYBER SECURITY**

**Key words:** *cyber security, cybercrime, cyber threat, cyber defense, Internet, website.*

In the Great Explanatory Dictionary of the Ukrainian Language, the terms «cyber» or «cybernetic» are interpreted as referring to the term «cybernetics», which is created and operates on the basis of the principles and methods of cybernetics. And the term «security» describes a state where someone does not threaten anyone, that is, characterizes the absence