LEGAL CHALLENGES OF INTELLECTUAL PROPERTY IN ARTIFICIAL INTELLIGENCE SYSTEMS

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Abstract. This article examines the major legal challenges related to intellectual property rights in artificial intelligence systems. The rapid development of artificial intelligence technologies has transformed creative and innovative activities, raising complex questions concerning authorship, ownership, copyright protection, patent rights, and legal responsibility. The study analyzes how AI-generated content challenges traditional intellectual property frameworks that were originally designed for human creators and inventors. Particular attention is given to issues such as copyright infringement, the use of protected data in AI training processes, plagiarism, and the legal status of AI-created works. The article also explores international legal approaches and emphasizes the necessity of improving existing legislation in order to ensure effective protection of intellectual property in the digital era. The research concludes that modern legal systems must adapt to technological progress by developing flexible and balanced regulatory mechanisms for artificial intelligence technologies.

Keywords: artificial intelligence, intellectual property, copyright, patent law, AI-generated content, digital technologies, legal regulation, plagiarism, innovation, data protection.

Introduction. The rapid development of artificial intelligence (AI) technologies has significantly transformed modern society, creating new opportunities in science, business, education, healthcare, and digital communication. AI systems are increasingly capable of generating creative works, analyzing complex data, making autonomous decisions, and performing tasks that traditionally required human intelligence. As a result, artificial intelligence has become one of the most influential technological phenomena of the twenty-first century.

At the same time, the widespread use of AI has generated serious legal and ethical concerns, particularly in the field of intellectual property rights. Traditional intellectual property law was designed to protect creations produced by human authors and inventors. However, AI systems can now create texts, images, music,

software, and inventions with minimal human involvement, raising fundamental questions about authorship, ownership, copyright protection, and legal responsibility.

One of the major legal challenges is determining who owns intellectual property created by artificial intelligence systems. In many jurisdictions, copyright and patent laws recognize only natural persons as creators or inventors. Consequently, AI-generated works often exist in a legal grey area where the rights of developers, users, and AI systems themselves remain unclear. In addition, the use of copyrighted data for training AI models has intensified debates regarding plagiarism, fair use, and the unauthorized reproduction of intellectual works.

Furthermore, the rapid digitalization of society and the expansion of smart technologies require legal systems to adapt to new technological realities. Modern legal frameworks are often unable to respond effectively to issues related to AI-generated content, algorithmic creativity, data ownership, and cross-border digital regulation. Therefore, the study of legal challenges associated with intellectual property in artificial intelligence systems has become an important scientific and practical issue for contemporary legal scholarship.

This research aims to analyze the major legal problems arising from the interaction between artificial intelligence and intellectual property law, examine existing international approaches, and identify possible directions for improving legal regulation in the digital era.

The world is changing before our eyes. New technologies are changing life, beliefs and values. Any modern technology has a dark, negative side. Including technologies based on artificial intelligence. But in order to minimize their negative consequences, they should be directed correctly. Until then, intellect, consciousness, and intelligence existed only in humans, it was considered a phenomenon with a biological and social basis. But the concept of intelligence has changed a lot in the next 100 years.

Originally, the Czech science fiction writer Karel Chapek wrote about robots with artificial intelligence in the 1920s. Since the second half of the 20th century, various types of robots have been created. Once again, fiction has shown that it can go far beyond both practical scientific research and theoretical hypotheses in advancing some predictions and new ideas.

Starting from Karel Čapek, science fiction writers began to warn not only about strange "intelligent machines", robots, and automatic devices in their works, but also about the danger they pose, the threat to human freedom and life. Until now, the conflicts depicted in such works were considered to be far from real life, a dramatic artistic collision for the genre of fiction. But humanity has reached the time when fairy tales become reality. It is becoming more and more clear that the threat posed by artificial intelligence-based technologies, "hacker robots", can be real.

Artificial intelligence is a "consciousness" created by machines based on a combination of predetermined algorithmic paradigms and programs, as opposed to natural consciousness based on high-level psyche and thought. Machines, especially computer systems, are called artificial intelligence. Scientists and philosophers believe that there are two types of artificial intelligence. One is true artificial intelligence in the broadest sense, while the other is virtual intelligence. Virtual intelligence refers to an artificial mind that draws conclusions on the basis of data previously collected and entered into the computer database and is under human control.

According to experts, a universally powerful artificial intelligence is a human-made mind that collects information, stores it in memory, programs itself, "thinks" independently, makes its own conclusions, makes its own decisions, and provides solutions to problems . It is not an independent, natural formation as a result of evolution, but a product of human activity. That is why it is called artificial. Such a powerful artificial intelligence does not yet exist, but some elements and features of it are emerging. It even scared some scientists and industry experts. Because those who are connected to the Internet independently began to collect new information, which the owners did not bother, relying on the program they have.

Today's average artificial intelligence is getting better and better. Google's online translation system used to translate words and sentences in chunks when translating from one language to another. This had a negative impact on the quality of the translation, so the network independently abandoned this method and switched to full sentence translation. As a result, a new translation method was created, the translation speeded up and the quality increased. The new translation began to come out clearly and distinctly, without any nonsense. This was a major breakthrough in the field of machine translation.

The computer began to teach the Bot to talk, negotiate, communicate, which is one of the first manifestations of artificial intelligence. It is interesting that the experts conducting the tests did not even notice that they were communicating with the computer. The bot has repeatedly shown interest in an unrelated field several times in order to achieve its goal. He tried to pretend that he was coming to an agreement by distracting his interlocutor. The testers were surprised to learn that the computer was acting independently and cunningly. Testers had serious doubts about this behavior of artificial intelligence. Having learned about this, the famous businessman and inventor Elon Musk addressed the US administration: "You still see that iron men with artificial intelligence pose a great danger to humanity. We don't need artificial intelligence, we just need an artificial memory that remembers a large amount of information [1]," he says. Stephen Hawking, a famous British physicist, expressed a

[1]Electronic resource : www . orbit en site

similar opinion to Elon Musk's: "Human capabilities are limited by the gradual evolutionary process, we cannot compete with machines, we will lose [2]." Computers are already beating even the most talented chess grandmasters with ease. They deliver, process and edit news on their own without human help or journalists. Today, many media centers, television and radio companies, and news agencies of the world are operating with the help of computers with artificial intelligence.

Another amazing thing is that the personal artificial intelligence in the form of a robot, which communicates with a person for a long time during his life, is aware of his biography, history, fate, preserves the character and character of his owner in the database, even after the death of a person with short sentences. can communicate. In addition, artificial intelligence can predict the death of a person. In the same way that you can tell when a car is running out of fuel by looking at a sensor, artificial intelligence can tell when the life-sustaining energy and resources in the human body are running out. At the same time, artificial intelligence can protect a person from emotional, mental pain and stress, which are dangerous for his health.

The sensor of the personal artificial intelligence connected to the human body monitors the beating of the heart and blood vessels and delivers the data to the personal database in your polyclinic. Information about your health is analyzed in artificial intelligence computing machines, after seeing the results, your doctor will tell you the necessary advice, treatment methods, and necessary medicines. Now this method is very useful in monitoring the health of astronauts in China.

Automation of artificial intelligence production, robotization will lead to conflicting social consequences. On the one hand, a person gets rid of heavy mechanical work, and on the other hand, it squeezes a person out of many areas of production and service. As a result, the employment problem may worsen. At the annual meeting of the American Association for the Advancement of Science in Washington, DC, it was concluded that 70 percent of manufacturing workers will be out of a job due to the development of robotics.

On the basis of today's programs, a person's facial structure, fingerprints, speech, voice timbre are determined without error. According to experts, self-driving cars will be on the road in the near future. Medical devices that quickly and accurately diagnose serious diseases will be activated. Robots sweep our yards, clean our homes, and make scientific discoveries automatically.

"There is not much time left for the era of powerful artificial intelligence to be widely used, but there is no need to be worried, afraid, or depressed about it, we should only use it based on mutual agreement and contracts and direct it to good works

[2]Argumenty i fakty 22 (2011) June 5, 2019

[3]," said the creation of artificial intelligence in China. working on, the country's largest Baidu Inc. Zhang Yanxin, head of the company.

Of course, if any innovation is used for a positive purpose, if artificial intelligence develops under control, it will be useful for the development of society. But no one can guarantee that artificial intelligence will not be directed to malicious goals: aggression, world domination. Also, what will happen if artificial intelligence disobeys people in the process of development, attacks people like in fiction and movies?

Mark Sukenrberg, the founder of Facebook, says: "In 5-10 years, we will spend a large part of our company's budget, and the main attention of our scientific and practical experts, to sharpen the light of the human eye, improve the ability to hear, increase the richness of the language, expand the range of thinking, in a word, the human we focus on creating artificial intelligence that heals, rejuvenates and serves to live happily [4]. It is good to heal a person with the help of artificial intelligence, to treat the deaf, dumb and blind, paralyzed patients. But who can guarantee that at some stage there will not be an attempt to create a super-human, a super-fighter, a super-assassin, a super-terrorist. Types of artificial intelligence are currently developing positively. But this is just the beginning: nanomaterials 200 times stronger than steel and a million times thinner than a hair, and the first 3D-printed liver transplants are already being developed.

Nowadays, the capabilities of the so-called "intelligent" machines, that is, the "owners" of artificial intelligence, are not at the level of human thinking. The maximum result that can be obtained from them is to quickly check scientific hypotheses, mainly mathematical theorems, and similar issues, which require the analysis of several thousands of specific and general cases, which are complex, time-consuming, and based on specific conditions.

Experts estimate that a full-fledged artificial intelligence capable of many operations will be created by 2029. In cooperation with the IBM concern and the Polytechnic Institute in Lausanne, Switzerland, he said that by 2025, that means in two to three years, an artificial model of the human brain will be created [5]. Many scientists are conducting research on the creation of an artificial model of the human brain, especially in several scientific laboratories in the United States, and how much money is being spent by sponsors.

Is artificial intelligence dangerous, can it seriously harm humanity? There is no complete answer to this problem. The management of the search network Facebook shut down the system that powers artificial intelligence machines when they learned that they were starting to communicate independently in their own language. Touched

[3]"Science, education , innovation - youth in the eyes of Sh. Shomukhammedov in the name of young of shark scientists second forum materials t ' collection 2018, May 14, 291 pages
[4] that's it source , 290 pages
[5]Argumenty i fakty 89 (3022) February 17, 2022

by the fact that artificially intelligent computers speak only one language - English, they created their own independent (secretly from their owners and incomprehensible to them) language and began to communicate in it. Computers were shut down after seeing computers begin to communicate in a human-like manner and because it was not known what was in their brains and the danger it posed [6].

The intellectual potential of robot-androids, which are sometimes hyped by various mass media, is not the level of knowledge of, let's say, a high school graduate. Nevertheless, intellectual systems are already becoming our close assistants in lightening the human burden, in facilitating and, most importantly, in making jobs that require difficult and intense mental effort. As a bright example, we can cite information and analysis systems that serve to coordinate flights at airports. They control the general situation, summarizing the current meteorological situation, aircraft arrival and departure schedules, distance, speed and hundreds of similar parameters, and provide the human engineer with information about the optimal mode.

The autopilot capabilities of the planes themselves can also be added to this list. He can lead the line. But in emergency situations not provided for in the algorithm, an independent creative (creative) unconventional decision cannot be made. However, the pilot abandons the autopilot and relies on his own knowledge and experience.

While the rapid development of artificial intelligence is helping machines solve their own problems, it is also creating new challenges that can affect the economic, legal, and moral foundations of our society. For example, the automation of the production process regularly reduces the number of jobs. And artificial intelligence will speed up this process even more. World scientists express different opinions about this. "People should not be afraid of being out of work in the era of artificial intelligence, being displaced by robots . Work is available to everyone. Only new professions will appear, and people will be required to adapt to it. As artificial intelligence progresses, it will remain in the role of a learner, while humans will coach it [7]."

How much impact does artificial intelligence have on global security? This issue was discussed at the UN Security Council on July 18, 2023. Why is there so much anxiety about the unknowns of artificial intelligence? The reason is that machines based on artificial intelligence can harm people. Terrorism, crime, cyber-attacks - if artificial intelligence is used for these nefarious purposes, it can have very serious consequences for global security. Malfunctioning AI systems are another major concern. Artificial intelligence has enormous potential to serve both good and evil. Inventors predict that humanity may face even bigger, more devastating, and

[6] UN news site
[7] Paul R. Daugherty H. James Wilson " Human+machine. Reimagining Work in the Age of Everything"HarvardBusinessReviewPress

unexpected threats from artificial intelligence. As UN Secretary General A. Guterres said, "If we do not take measures to eliminate these threats, we will not fulfill our duty to the present and future generations [8]."

The development of artificial intelligence systems creates a number of challenges and controversies in terms of legal regulation. Copyright and intellectual property rights are controversial in many countries of the world where artificial intelligence is developed. Who owns the "creation" of artificial intelligence?", "Who gets the patent?" there is an urgent issue. A US District Court ruling ruled that works created by artificial intelligence are not protected by copyright.

As a statistic, on November 30, 2022, the Chat GPT chatbot was launched and reached 1 million users in just five days. Chat GPT can answer various questions, help programmers write code, write coursework for students. This bot can even write poems and essays. That's why there is a fear in the general public that this technology may leave copywriters, journalists, school teachers and other professionals out of work. Teachers are especially concerned about Chat GPT's ability to "write" essays. For example, in the US, students have already started submitting their creations written by bots. This leads to gross infringement of copyright . One of the biggest challenges of artificial intelligence remains the lack of creativity. He does not have a personal opinion, that is, he does not express a personal opinion on any matter. The Chat GPT chatbot is currently unable to provide new ideas.

The Fourth Industrial Revolution, which is about to begin, is unlike any other process that humanity has ever faced in its size, scope, and complexity. Illustrated by a range of new technologies that combine the physical, digital, and biological worlds, developments are impacting all spheres, including economics, industry, and politics, and are challenging even ideas about what it means to be human.

The basis of the fourth industrial revolution is artificial intelligence. "Artificial intelligence is the development or destruction of humanity?" this question makes everyone think, it causes a lot of debate. The unchecked development of artificial intelligence can lead to catastrophic global threats such as nuclear war and pandemics, as well as threats to human civilization. Is it possible to keep artificial intelligence under control in the future or not? It is not known whether artificial intelligence technologies that make decisions instead of humans directly threaten values other than moral standards. Each innovation has its own pros and cons.

Efforts have already begun in a number of countries to produce legislation that can control the development of artificial intelligence. The European Union hopes to pass a law that divides the risks of artificial intelligence into four categories. In China, the draft law to regulate artificial intelligence was published in 2023. It proposes

[8]UN news site

restricting politically sensitive content and requires developers to get permission before using AI-based technologies.

The fourth industrial revolution is changing not only what we do, but also who we really are. It affects our personality, our sense of identity. It also affects our sense of privacy, ownership, consumption patterns, work and leisure time, career and skill building, interpersonal relationships, and human life in general.

A high-ranking representative of the Christian religion, Mikhail Zakharov, says: "Man is an intelligent, free-thinking being, created by God. Nothing happens in this world without God's will. Suppose an iron body was created that could replace man and even surpass him in some of his abilities. We say that it was created by God's will. After all, man is creating new species and breeds of plants and animals. We say that they were created by the will of God. Therefore, we should treat artificial intelligence in the same way [9]. "

The examples given are of today's level of artificial intelligence development. But these examples actually raise very complex philosophical-ontological problems: what is consciousness, intelligence? Until then, it was said that consciousness was either given to man by God, or a property of highly organized matter, that is, the human brain, and it was an ideal reflection of reality, the universe in the human mind. It was said that the human mind perceives and evaluates the world and reality actively analytically: in time (variety of events) and in space (in the side-by-side, sequential arrangement of things and events) without merely reflecting the world and reality in a passive, mechanical way like a mirror. Necessarily, he tries to change and improve reality, that is, his creativity was emphasized. The dominant view was that consciousness and intelligence exist only in man, and it was formed and improved along with man in a socio-natural evolutionary way. The idealistic views that the universal mind, absolute (absolute) idea, absolute soul is the source of consciousness and reason were in practice only a "scientific" form of religious views.

In the course of the development of science, it became known that highly developed species of animals have a complex psyche, a threshold of consciousness (preconscious). For example, monkeys, horses, dolphins, etc. But it became clear that they could not cross the threshold of consciousness and reach the level of thinking. Views on the nature of consciousness have not changed. Because even highly developed animals do not recycle nature and produce new products. But when artificial intelligence began to be created, traditional views did not satisfy both ordinary people and representatives of science, especially psychologists and philosophers. Especially in the near future, if we move to quantum computers that make extensive use of artificial neural fibers, it will be possible to create powerful independent artificial intelligence. In it, it is necessary to say that consciousness and

[9]Electronic source : www . orbit en site

intelligence are not only the perception of the world in the human brain, but also the conclusions based on the self-management of the information system. How does the language of artificial intelligence differ from human language in terms of content rather than form? Functionally, the difference is only in the inability to evoke emotion. This is just a guess for now. We will not dwell on the difference between the human mind and the artificial mind, their complex features and contradictions, the ontological, functional-methodological, creative-pragmatic and other philosophical issues that it raises . This is a separate independent and narrow scientific topic.

In short, powerful technologies, smart machines, and robots that have become elements of thinking are increasing year by year. At the same time, this process disrupts the balance between the mental and emotional worlds of man, which has been established for centuries, and increases the differences and conflicts between them. The automation of many traditional labor professions, or the use of robots, the transfer of trade, other various communications, including a significant part of education to remote forms, will reduce the working time of people and increase their free time, along with the revision of the nomenclature of future professions and specialties. Free time creates conditions for the physical and spiritual growth of a person, to achieve perfection.

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