

UDC 342.9

DOI <https://doi.org/10.32849/2663-5313/2023.1.07>**Yuliia Turia,**

Candidate of Technical Sciences, Associate Professor, Associate Professor at the Department of Civil, Commercial and Environmental Law, Dnipro University of Technology, 19, Dmytro Yavornytskyi avenue, Dnipro, Ukraine, postal code 49005, tiuriayuliia@ukr.net

ORCID: orcid.org/0000-0001-7732-3535

Turia, Yuliia (2023). Epistemology of the concept of "legal doctrine in the field of artificial intelligence" in Ukraine. *Entrepreneurship, Economy and Law*, 1, 39–44, doi <https://doi.org/10.32849/2663-5313/2023.1.07>

EPISTEMOLOGY OF THE CONCEPT OF "LEGAL DOCTRINE IN THE FIELD OF ARTIFICIAL INTELLIGENCE" IN UKRAINE

Abstract. Purpose. The purpose of the article is to study the state of doctrinal consolidation of artificial intelligence and to highlight the prospects for further development with due regard to global trends. **Results.** The article addresses important issues of the legal nature and doctrinal consolidation of artificial intelligence in Ukraine. We present the ways of defining the concept of "artificial intelligence" in various aspects, including philosophical ones, and its active application for decades, especially in recent times, as IT breakthrough is only one side. Like any social relationship, the result of human activity in modern conditions requires legal consolidation to be fully implemented. The areas of application of artificial intelligence in Ukraine are diverse. It is impossible to imagine humanity refusing to use artificial intelligence, but in addition to its development, improvement, and implementation, it requires doctrinal consolidation. As of today, Ukraine does not officially recognise the concept of "artificial intelligence", the scope and limits of artificial intelligence, or the status of entities related to artificial intelligence at the legislative level. As for the actors, they may be the developers of the programme, the owners of the programme, or the users of such a programme. A separate question arises as to the liability of the machines themselves, which are carriers of artificial intelligence, and the final determination of the limits and specifics of legal liability. Since Ukraine has been actively conducting research in the field of artificial intelligence in recent years, using various software programmes, but legally we can refer to only a branch of intellectual property, including the product, that is, a computer programme, as a carrier of artificial intelligence. This gap in the legislation is currently being filled by analogy, following the example of the doctrinal consolidation of intellectual property. However, these issues can only be resolved in relation to developers, owners and users of software as carriers of artificial intelligence. Therefore, the article addresses important issues of eliminating the gap in legislation and doctrinal consolidation of artificial intelligence in Ukraine. **Conclusions.** The strategy for the development of artificial intelligence in Ukraine is aimed at developing and using artificial intelligence provided that the rule of law, fundamental human rights and freedoms, and democratic values are respected, and the implementation of these values should be ensured by appropriate guarantees, including the possibility of unimpeded human intervention in the functioning of the artificial intelligence system. The protection of human rights and freedoms involves ensuring the right to work and providing citizens with the opportunity to acquire knowledge and skills to successfully adapt to the digital economy.

Key words: artificial intelligence, artificial intelligence system, actors of the legal process, intellectual property, copyright.

1. Introduction

The active introduction of artificial intelligence into human life necessitates the regulatory framework for this branch. The doctrinal basis for the use of artificial intelligence in Ukraine is absent and the application of legal provisions by analogy with intellectual property and copyright law cannot fully replace the regulatory framework for artificial intelligence. The branch of artificial intelligence goes beyond the usual regulatory framework,

both in terms of the subject matter and actors. Therefore, today the issue of doctrinal consolidation of the concept of "artificial intelligence" and the scope of artificial intelligence is quite acute and requires significant attention and practical implementation.

Some issues related to the doctrinal consolidation of artificial intelligence were covered in the works by: V.H. Androshchuk, T.H. Katkova, Yu.V. Kryvytskyi, Ye.O. Kuptsova, Ye.O. Michurin, O.E. Radutnyi,

S.K. Ramazanov, A.I. Shevchenko, and others. However, as we have noted, the problem of legislative consolidation of artificial intelligence in Ukraine is quite acute and requires careful research for practical application.

The purpose of the article is to study the state of doctrinal consolidation of artificial intelligence and to highlight the prospects for further development with due regard to global trends.

2. General principles of artificial intelligence existence

We agree with the authors on the prospects for the development of science in the near future in the IT sector and specifically the use of artificial intelligence. For example, the authors underline that the definition of the initial fundamental parameters of order and their prospects in the global world, the concepts and principles of creating an artificial intelligence system, its structure and important aspects and principles of the development of future science and technology in the field of analysis and synthesis based on synergistic approaches, innovative, information, convergent technologies, considering the design of future viable, safe and sustainable development in the context of industry and society. The main scientific and technological factor in the 21st century will be the development of artificial intelligence, nanotechnology, bio-, media-, cognitive and socio-humanitarian technologies. More specifically, it is the modern development of innovative technologies. Therefore, it should be noted that the principles of intellectualisation, integration, convergence, co-evolution, and socio-humanitarian technology should be considered. It is important and necessary to allow for the modern principles of designing sustainable and secure artificial intelligence systems and to solve the problem of harmonisation between the two worlds: real and virtual, especially when they are hybridised. Our near future is a hybrid non-linear world. Today, we need important intelligent information and innovation technologies and systems, in particular, artificial intelligence systems and technologies (Ramazanov, Shevchenko, Kuptsova, 2020).

From a practical point of view, artificial intelligence can be defined as a software product that receives a specific request, collects and processes data, and then produces a ready-made solution. Such a solution is often perceived as the result of a programme's work that demonstrates intelligent behaviour and works in a manner similar to human thinking. Since artificial intelligence is a software product similar to a computer programme, the regulatory framework for artificial intelligence can be applied by analogy to the regulatory framework for a computer programme. Currently, in

Ukraine, the regulatory framework for a computer programme is equated to a literary work (Klian, 2022).

In his study, Yu. Kryvytskyi considers the controversial issues of legal aspects of artificial intelligence and argues that the spread of artificial intelligence technologies in the modern world is gaining momentum. Soon enough, people will not be able to imagine life without artificial intelligence systems, which are likely to become the largest innovative project in the history of human civilisation. Currently, there is no unified approach to understanding the nature of artificial intelligence in the technical sector, which leads to some uncertainty in the legal, social, moral and ethical sectors. There is a discussion between different groups of experts in law on the legal aspects of the benefits, advantages, threats and risks of artificial intelligence development; possible recognition of the legal personality of artificial intelligence robots; the need to develop new mechanisms for legal liability and compensation for damage in the context of artificial intelligence. Obviously, it is difficult or almost impossible to stop the development of artificial intelligence (Kryvytskyi, 2020).

Indeed, we can agree with the author's discussion of the threats and benefits of artificial intelligence development. In our previous works, we have considered such risks and benefits. The benefits are obvious, and humanity will not be able to refuse the advantages of artificial intelligence. Risks, of course, can also arise, as well as threats. However, in human activities the risks of using familiar objects (without the use of artificial intelligence) also arise constantly and doctrinal consolidation of any human activity gives a sense of protection in the event of such risks, for example: compensation for damages in case of violation of rights. The same principle should be taken as a basis for the application of artificial intelligence. The idea of legal personality of robots with artificial intelligence seems to be interesting, quite logical and is actively considered in other countries.

In the era of the global redistribution of everything, the need to improve the entire legal doctrine and its individual aspects related to robotics and automation, the Internet of Everything, the Internet of microorganisms, artificial intelligence, Big Data, cloud computing, 3D and 4D printing, digital human, bioengineering, genetic engineering, nanotechnology, high-tech implants, RFID tattoos, new substances and materials, quantum technology, etc. becomes a priority for experts in law (Radutnyi, 2021).

According to Yu. Kryvytskyi, the creation, implementation and use of artificial intelligence should be prioritised, be socially ori-

ented and meet the interests of human security, preservation of personal space, freedom and self-awareness. Moreover, artificial intelligence systems should be developed and used only consistent with the rule of law, fundamental human and civil rights and freedoms, democratic values, and appropriate safeguards in the implementation of such technologies. In recent years, examples of the implementation of artificial intelligence systems in various fields and segments of social activity have been emerging at an intensive pace, with mostly positive results. The fundamental and undeniable advantage of artificial intelligence technologies is that decisions are made and implemented in real time based on the collection and processing of a huge amount of data; identification of all actors and objects involved in the processes; and the use of special mathematical algorithms and robots (Kryvytskyi, 2020).

On the contrary, O.E. Radutnyi notes that the participants of the legal space are not actually living people, but parties to legal relations - the intersection of social forces of different significance, the most important thereof are those symbolic formations that contain normative elements. One of these intersections may be new phenomena – artificial intelligence, which can easily overcome obstacles to its recognition as a party to legal relations, and a natural person whose consciousness, intelligence and personality are transferred to a digital medium. Modern legal science should differ from religion in the following ways: 1) A willingness to admit ignorance, which is based on the Latin precept *ignoramus* ("we do not know") and is based on the premise that we do not know everything and that there are no theories or ideas beyond reasonable criticism; 2) The desire to acquire new knowledge; 3) Constant expansion of opportunities; 4) The search for the elimination of contradictions" (Radutnyi, 2018).

Ukraine has not yet considered the concept of artificial intelligence as a party to law relations, although, as we can see, it is actively used in various fields. It is necessary to consider artificial intelligence from different perspectives, namely as a subject matter of social relations, an object of law, a right of ownership, and a "party" to legal relations.

The importance of determining whether to theoretically consider artificial intelligence as an object or an actor arises in connection with its participation in legal relations. Since the object and the actor are elements of civil legal relations, the theoretical definition of these elements of artificial intelligence depends on whether it (artificial intelligence) will be a party to real legal relations or whether other actors of legal relations will enter into transactions with it,

be granted property rights, etc. The literature review reveals another issue, which will be discussed in more detail below, that is, the granting of certain rights to artificial intelligence. According to some researchers, such a "digital being" should be endowed with such rights because of the need for humane treatment. However, for the purposes of our discussion, it should be noted that the mere granting of certain rights does not mean "legal personality" in civil law. After all, by analogy, although animals are endowed with certain rights (to respect, not to be subjected to ill-treatment or cruelty, etc.), they are objects of civil law (Michurin, 2020).

With regard to the practical state of the doctrinal position in the field of artificial intelligence, T. Katkova refers to EU Resolution 2015/2103(INL), where the authors understand artificial intelligence as an *object*. The current legislation of Ukraine allows for the legal framework to be established for relations arising in connection with the use of artificial intelligence, in particular, in the case of determining the owner's liability for the actions of artificial intelligence, and in the case of such actions as a result of defects of the manufacturer and programmer, through the use of the concept of recourse. However, the legislation is not tailored to such situations, which can lead to difficulties in law application practice. In the future, in order to grant legal personality to artificial intelligence, lawmakers should answer the main question: Do developers and users of artificial intelligence want to disclaim liability for the actions of artificial intelligence or do developers and users want to control the functioning of artificial intelligence? (Katkova, 2020).

3. Processing of personal data by automated systems

The state of doctrinal consolidation, as noted above, is reduced to the analogy of the law, since there is no clear consolidation and regulatory framework for artificial intelligence. Thus, it is considered within the scope of personal data protection, copyright, and intellectual property. Let us consider the aspects we have mentioned.

Protection of personal data. One of the options for raising a person's awareness of the collection of data about them is the mechanism of differentiated consent to the processing of personal data. With this approach, the user can allow or prohibit the collection of certain types of data or can pay a certain amount for using the application, refusing to provide it with one's data. At first glance, this may seem to make their situation worse, as they have to pay for a product that was previously free, but in fact, such a relationship recognises the value of personal data and shapes their understanding of data rights. Therefore, the developers

of the Artificial Intelligence Regulatory Mapping should decide on the approach to personal data protection: whether to use the mechanism of informed consent or differentiated consent to personal data processing. In addition, the Artificial Intelligence Regulatory Mapping should define a separate area of personal data protection and medical AI, which should be developed with the involvement of medical professionals (Katkova, 2020).

For example, Article 1 of the Law of Ukraine "On Protection of Personal Data" states that: "The law regulates legal relations with respect to the protection and processing of personal data and is aimed at protecting the fundamental rights and freedoms of man and citizen, in particular the right to privacy, in connection with the processing of personal data. This Law applies to the processing of personal data carried out in whole or in part with the use of automated means, as well as to the processing of personal data contained in a file or intended to be included in a file, with the use of non-automated means" (Law of Ukraine On Protection of Personal Data, 2010).

Therefore, the Law provides for the processing of personal data by automated systems, while the Law does not define the extent of liability for the disclosure of personal data, since Article 4 of the Law contains an exhaustive list of parties to relations with respect to personal data.

These include personal data actor; personal data owner; personal data manager; third party; and the Ukrainian Parliament Commissioner for Human Rights (Law of Ukraine On Protection of Personal Data, 2010).

Comparison of the concepts of "intellectual property" and "artificial intelligence". According to the report of the UK Intellectual Property Office (IPO) *Artificial Intelligence: A worldwide overview of AI patents and patenting by the UK AI sector*, the number of published patent applications related to artificial intelligence has increased by 400% over the past decade. The number of patent applications on using artificial intelligence technology filed in the US doubled between 2002 and 2018. WIPO has launched a series of consultations on artificial intelligence and intellectual property. The question of whether artificial intelligence creations should be protected by copyright, design rights, patents or sui generis rights, or not protected at all, is being discussed. There are well-known "controversial" examples of AI inventions, such as the unusual but effective antenna developed in 2004 for NASA by "evolutionary" software, and at least one issued patent has been attributed to an inventive AI. US patent No. 6,847,851 issued in 2005 refers to a scheme whose inventor is John Koza, although it was later revealed

that it was developed using genetic programming (Androshchuk, 2020).

Copyright and artificial intelligence. Similarly, copyright is the main legal regulator in Ukraine for software development. According to T. Katkova, "the use of artificial intelligence in the creation of new inventions increases the risk of concentration of economic power in the market by individual entities to obtain numerous patents. E. Fraser gives examples of how computer software can help or independently generate textual patent applications. For example, Cloem is an example of a commercial service in which a human operator uses a computer algorithm to create variants of existing patent applications. The algorithm creates a large number of permutations of the original application by rearranging phrases and replacing terms with alternative definitions, synonyms or antonyms" (Katkova, 2020).

Compensation for damage caused by artificial intelligence. The only way to ensure that decisions do not systematically disadvantage members of non-protected groups (immigrants, internally displaced persons) is to reduce the overall accuracy of all definitions provided to the algorithm. In addition, AI decision-making can have discriminatory results if the system learns from discriminatory, sometimes outdated, data. For example, in 2018, Amazon.com.Inc. was accused of creating discriminatory artificial intelligence. The company developed a recruitment programme that rejected women's CVs when reviewing application forms. This was due to the fact that artificial intelligence was "trained" by examining the resumes of hired employees for 10 years, among which men dominated, given the general trend of their greater number in the technology industry (Katkova, 2020).

Cautions to be considered when developing the Strategy for the Development of Artificial Intelligence in Ukraine. Ukraine's existing government programmes and legislative documents have not fully developed a paradigmatic vision of artificial intelligence development that would include the following components: a clear understanding of the purpose and scope of technological transformation in the world; determining Ukraine's place in the global distribution of innovation production and practical mechanisms for achieving this place. The Strategy for the Development of Artificial Intelligence in Ukraine should develop the existing regulatory documents, such as the Strategy for the Development of the Information Society in Ukraine, the Concept for the Development of the Artificial Intelligence Sector in Ukraine, but allow for the constant development of technologies and the growing responsibility (including moral) of people who introduce arti-

ficial intelligence technologies into public use (Shevchenko, 2022).

4. Conclusions

Therefore, the issues of the legal doctrine of artificial intelligence identified at the beginning of our work are obvious and require more attention. There is no regulatory framework for artificial intelligence in Ukraine, although the Strategy for the Development of Artificial Intelligence in Ukraine, which we have reviewed, is aimed at developing and using artificial intelligence provided that *the rule of law, fundamental human rights and freedoms, and democratic values* are respected, and the implementa-

tion thereof should be ensured by appropriate guarantees, including the possibility of unimpeded human intervention in the functioning of the artificial intelligence system. The *protection of human rights and freedoms involves ensuring* the right to work and providing citizens with the opportunity to acquire knowledge and skills to successfully adapt to the digital economy. Moreover, the doctrinal concept of "artificial intelligence" should be defined, the scope of liability in case of violation of law in connection with the use of artificial intelligence should be outlined, and the actors of regulatory framework should be identified.

References:

- Androshchuk, H.O.** (2020). Vynakhody shtuchnoho intelektu [Inventions of artificial intelligence]. *Intellectualna vlasnist v Ukraini - Intellectual property in Ukraine*, 11, 56-67 [in Ukrainian].
- Katkova, T.H.** (2020). Shtuchnyi intelekt v Ukraini: pravovi aspekty [Artificial intelligence in Ukraine: legal aspects]. *Pravo i suspilstvo - Law and society*, 6, 46-55 [in Ukrainian].
- Klian, A.** (2022). Pravove rehuliuвання shtuchnoho intelektu v Ukraini ta sviti [Legal regulatory framework for artificial intelligence in Ukraine and the world]. Kyiv [in Ukrainian].
- Kryvytskyi, Yu.V.** (2020). Shtuchnyi intelekt yak instrument pravovoi reformy: potentsial, tendentsii ta perspektyvy [Artificial intelligence as a tool of legal reform: potential, trends and perspectives]. *Naukovyi visnyk Natsionalnoi akademii vnutrishnikh sprav - Scientific Bulletin of the National Academy of Internal Affairs*, 2 (119), 90-101 [in Ukrainian].
- Michurin, Ye.O.** (2020). Pravova pryroda shtuchnoho intelektu [Legal nature of artificial intelligence]. *Forum prava - Law Forum*, 5, 67-75 [in Ukrainian].
- Radutnyi, O.E.** (2018). Tsyfrova liudyna z tochky zoru zahalnoi ta informatsiinoi bezpeky: filosofskyi ta kryminalno-pravovyi aspekt [Digital person from the point of view of general and information security: philosophical and criminal law aspect]. *Informatsiia i pravo - Information and law*, 2(25), 158-170 [in Ukrainian].
- Radutnyi, O.E.** (2021). Pravo ta okremi aspekty svitu atomiv i bitiv (robototekhnika, shtuchnyi intelekt, tsyfrova liudyna) [Law and certain aspects of the world of atoms and bits (robotics, artificial intelligence, digital man)]. *Pytannia borotby zi zlochymistiu - Issues of crime control*, 41, 13-28 [in Ukrainian].
- Ramazanov, S.K., Shevchenko, A.I., Kuptsova, Ye.O.** (2020). Shtuchnyi intelekt i problemy intelektualizatsii: stratehiia rozvytku, struktura, metodolohiia, pryntsyipy i problemy [Artificial intelligence and problems of intellectualization: development strategy, structure, methodology, principles and problems]. *Shtuchnyi intelekt - Artificial Intelligence*, 90 (4), 14-23 [in Ukrainian].
- Shevchenko, A.** (2022). Shchodo proiektu stratehii rozvytku shtuchnoho intelektu v Ukraini na 2022-2030 r.r. [Regarding the draft strategy for the development of artificial intelligence in Ukraine for 2022-2030]. *Shtuchnyi intelekt - Artificial Intelligence*, 93, 8-157 [in Ukrainian].
- Zakon Ukrainy Pro zakhyst personalnykh danykh: vid 01.06.2010 № 2297-VI [Law of Ukraine On Protection of Personal Data: dated 01.06.2010 No. 2297-VI]. (2022). *rada.gov.ua*. Retrieved from <https://zakon.rada.gov.ua/laws/show/2297-17#Text> [in Ukrainian].

Юлія Тюря,

кандидат технічних наук, доцент, доцент кафедри цивільного, господарського та екологічного права, Національний технічний університет «Дніпровська політехніка», проспект Дмитра Яворницького, 19, Дніпро, Україна, індекс 49005, tiuriayuliia@ukr.net

ORCID: orcid.org/0000-0001-7732-3535

ЕПІСТЕМОЛОГІЯ КОНЦЕПТУ «ПРАВОВА ДОКТРИНА У СФЕРІ ШТУЧНОГО ІНТЕЛЕКТУ» В УКРАЇНІ

Анотація. Мета. Метою статті є дослідження стану доктринального закріплення штучного інтелекту та висвітлення перспектив його розвитку в майбутньому з урахуванням світових тенденцій. **Результати.** У статті розглянуто важливі питання правової природи та доктринального закріплення штучного інтелекту в Україні. Наведено шляхи визначення поняття «штучний інтелект» у різних аспектах, зокрема й філософському, та зазначено, що активне застосування штучного інтелекту вже десятки років, особливо останнім часом, як ІТ-прорив є лише одним із них. Як і будь-які

суспільні відносини в результаті діяльності людини в сучасних умовах, це явище потребує правового закріплення для реалізації в повному обсязі. Галузі застосування штучного інтелекту в Україні є різноманітними. Неможливо уявити відмову людства від використання штучного інтелекту, однак, крім його розвитку, удосконалення, реалізації, необхідне також доктринальне закріплення. На сьогодні в Україні офіційно не закріплене на законодавчому рівні поняття «штучний інтелект», сфери та межі його застосування, статус суб'єктів, які пов'язані зі штучним інтелектом. Цими суб'єктами можуть бути розробники програм, власники програм, користувачі відповідної програми. Окреме питання виникає щодо відповідальності самих машин, які є носіями штучного інтелекту, та остаточного визначення меж та особливостей юридичної відповідальності. Україна останніми роками активно проводить дослідження в галузі штучного інтелекту, громадяни є користувачами різних програм, однак законодавчо можемо визначити це явище лише як галузь інтелектуальної власності, до якої й відносять продукт – комп'ютерну програму як носій штучного інтелекту. Ця прогалина в законодавстві наразі заповнюється за аналогією до закону за прикладом доктринального закріплення інтелектуальної власності. Однак зазначені питання можна врегулювати лише щодо розробників, власників та користувачів програм як носіїв штучного інтелекту. Тому у статті розглянуті важливі питання усунення прогалини в законодавстві та доктринального закріплення штучного інтелекту в Україні. **Висновки.** Стратегія розвитку штучного інтелекту в Україні націлена, зокрема, на розроблення та використання штучного інтелекту лише за умови дотримання верховенства права, засадничих прав і свобод людини та демократичних цінностей, реалізація яких має забезпечуватися відповідними гарантіями, зокрема можливістю безперешкодного втручання людини у процес функціонування системи штучного інтелекту. Захист прав і свобод людини передбачає забезпечення права на працю та надання громадянам можливості отримувати знання й набувати навички для успішної адаптації до умов цифрової економіки.

Ключові слова: штучний інтелект, система штучного інтелекту, суб'єкти правового процесу, інтелектуальне право, авторське право.

The article was submitted 14.12.2022

The article was revised 04.01.2023

The article was accepted 23.01.2023