

The Concept of Artificial Intelligence in Justice

Submitted: 6 September 2022

Reviewed: 20 October 2022

Revised: 18 June 2023

Accepted: 5 July 2023

Article submitted to blind peer review

Licensed under a Creative Commons Attribution 4.0 International

Oleksandra Karmaza *

<https://orcid.org/0000-0002-1536-0776>

Sergii Koroied **

<https://orcid.org/0000-0003-4769-2262>

Vitalii Makhinchuk ***

<https://orcid.org/0000-0001-7313-7911>

Valentyna Strilko ****

<https://orcid.org/0000-0002-9620-0458>

Solomiia Iosypenko *****

<https://orcid.org/0000-0002-2250-8601>

DOI: <https://doi.org/10.26512/istr.v15i2.44906>

Abstract

[Purpose] The aim of the article is to cover the main definitions of the concept of artificial intelligence, its origins, characteristics, grounds for application, as well as direct interaction and influence on the implementation of the main tasks of justice through the use and development of artificial intelligence in the judicial procedure.

[Methodology/Approach/Design] To solve the tasks set, the study employed the appropriate methods and materials of scientific research, namely dialectical, historical, statistical, sociological, and other methods of cognition of processes and phenomena, including specialised methods of grammatical consideration and interpretation of legal norms. Furthermore, an entire block of logical methods was used, including classification (upon creating a complete classification and structuring of scientific hypotheses and assumptions), extrapolation, induction and deduction, analogy, abstraction, comparison.

[Findings] This paper investigates the emergence and transformation of artificial intelligence in modern technological and information relations, its gradual introduction in various spheres of life, namely the ways of implementation and the possibility of

* Full Doctor in Law, Professor at the Department of Jurisdiction Forms of Legal Protection of Subjects of Private Law, Academician F.H. Burchak Scientific Research Institute of Private Law and Entrepreneurship of the National Academy of Legal Sciences of Ukraine, Kyiv, Ukraine, e-mail: o.o.karmaza@outlook.com.

** Full Doctor in Law, Professor at the Department of the Civil Law and Procedure, King Danylo University, Ivano-Frankivsk, Ukraine, e-mail: s.o.koroied@gmail.com.

*** Full Doctor in Law, Senior Research at the Department of Jurisdiction Forms of Legal Protection of Subjects of Private Law, Academician F.H. Burchak Scientific Research Institute of Private Law and Entrepreneurship of the National Academy of Legal Sciences of Ukraine, Kyiv, Ukraine, e-mail: vit_m_makhinchuk@gmail.com.

**** PhD in Law, Senior Specialist at the Division for Translation Organization of the Main Department for International Legal Cooperation and Asset Recovery, Prosecutor General's Office, Kyiv, Ukraine, e-mail: v-yu-strilko@outlook.co.

***** PhD in Law, Senior Lecturer at the Department of International, Civil and Commercial Law, Kyiv National University of Trade and Economics, Kyiv, Ukraine, e-mail: iosypenko-s@outlook.com.

application in justice. Furthermore, the study analyses possible ways and legal consequences of introducing artificial intelligence into the e-justice system in Ukraine and proposes the stages of reformation.

[Practical Implications] The materials of this study are of practical value in the implementation of the goals set for the active use of artificial intelligence tools and their gradual improvement, including the development of methodological guidelines, legislative acts covering the judicial procedure and reference books and recommendations for the interpretation of regulations that have already been adopted in the process of introducing electronic justice in the country.

Keywords: Legal Proceedings. Artificial Intelligence. Electronic Justice. Corporate Disputes.

INTRODUCTION

The development of information systems that help a person make decisions began with the emergence of expert systems in the 1950s, which describe the algorithm of actions for choosing a solution depending on particular conditions. Expert systems have been replaced by machine learning, thanks to which information systems independently form rules and find solutions based on dependency analysis, using initial data sets (without first drawing up a list of possible solutions by a person), resulting in the emergence of artificial intelligence. Technological solutions developed using machine learning methods are an example of artificial intelligence that can only solve highly specialised problems (weak artificial intelligence) (PONKIN and REDKINA, 2018). The creation of a universal (strong) artificial intelligence, capable, like that person, to solve various problems, think, interact, and adapt to changing conditions, is a complex scientific and technological issue, the solution of which is at the intersection of various areas of scientific knowledge – natural science, technical, and socio-humanitarian (ARTIFICIAL INTELLIGENCE..., 2017; APPLICATION OF ARTIFICIAL INTELLIGENCE..., 2021). Solving this problem can lead not only to positive changes in key areas of life, but also to negative consequences caused by social and technological changes that accompany the development of artificial intelligence technologies (LARINA and OVCHINSKY, 2020; YAROSHENKO et al., 2020).

In recent years, the expert community has increasingly discussed whether it is possible to automate the entire procedure of delivering justice using artificial intelligence, as well as replacing a judge with a system of universal (strong) artificial intelligence capable of analysing the factual circumstances of a case, giving them a legal assessment and making an appropriate decision (ALETRAS et al., 2018; CHERNIAVSKYI et al., 2019). In China, the United States, Great Britain, France, and some other countries, such computer programmes are already

finding their application, but currently serve merely as an auxiliary tool for analysing documents and do not replace a judge. In December 2018, the first International Act specifically dedicated to the use of artificial intelligence in justice appeared – the European Ethical Charter on the use of artificial intelligence in judicial systems, approved by the European Commission for the Efficiency of Justice of the Council of Europe (EUROPEAN COMMISSION, 2020). The Charter sets out five principles for the use of artificial intelligence: the principle of respect for human rights, by virtue of which the use of a computer programme should not detract from the adversarial nature of the procedure and the right to a fair trial; principle of prohibition of discrimination; the principle of quality and safety, which makes provision for the use of certified software, which is evaluated by both technical specialists and lawyers; the principle of transparency, by virtue of which all technologies used must be brought to the public attention in an understandable form (COUNCIL OF EUROPE, 2018).

Thus, more than three decades of improvements in information and communication technologies (ICT) are breaking into the activities of courts and prosecutors, promising transparency, efficiency, and radical changes in working practices, such as paperless courts. Even if such promises have not yet been fulfilled in most jurisdictions, programmes and algorithms are already performing increasingly more judicial procedures. The impact of such technologies on the functioning of justice and the values established by international principles of judicial conduct are mostly positive. The latest technological wave in the foreign experience of well-known countries is based on artificial intelligence (AI) and promises to change the way court decisions are made (LOMAKIN and SAMORODOVA, 2017). This purpose is mainly pursued through a specific technology called “machine learning”, which makes predictions by evaluating case materials, both procedural documents and related court decisions. This data set, known as “training data,” is analysed to build statistical correlations between cases and related court decisions.

The more data the algorithm processes, the more accurately it predicts decisions in new cases (LOMAKIN and SAMORODOVA, 2017). For this reason, such systems “learn” (even if only in terms of improved statistical accuracy) to reproduce the results that judges have already achieved in such cases. Unlike the already available technological tools that digitise the exchange of data and documents, this technology of “predictable justice” (as it is usually labelled) is intended to influence judicial decision-making (APPLICATION OF ARTIFICIAL..., 2021). However, it is not yet clear whether this trend leads to better solutions or undermines the proper performance of the system. That is precisely why, to solve this and other related issues, the scientific literature contains many studies on this matter, conducted by Ukrainian and foreign

researchers such as R. F. Zakirov (2017), S. O. Furashev (2018), I. V. Pokin and A. I. Redkina (2018), V. A. Shemshuchenko (2018), M. G. Matveev, A. S. Sviridov, N. A. Aleinikova (2008), K. Pittman (2016), J. Nesbitt (2017).

The present paper aims to cover the main definitions of the concept of artificial intelligence, its origins, characteristics, grounds for application, as well as direct interaction and influence on the implementation of the main tasks of justice through the use and development of artificial intelligence in the judicial procedure.

MATERIAL AND METHODS

Using dialectical and historical methods, the authors of this study considered the ways of establishment and development of artificial intelligence in the scientific field, its main functions and tasks, signs and conditions of application. The Aristotelian and sociological method allowed determining the main stages of the development of artificial intelligence, as well as the analysis of scientific research of Ukrainian and legislative researchers, and their significance in its further development. Comparison is one of the key methods in this paper, since the subject of the analysis covers not only the legal scope of its application, but also the experience of the existence of artificial intelligence in various spheres of human and state life. Methods of grammatical analysis and interpretation of legal provisions helped identify the available regulations governing the existence of artificial intelligence in the process of regulating public relations in the state. Monitoring and making suggestions for its improvement. The methods of scientific cognition used in this study are most often general scientific methods. Within the framework of general scientific methods, the authors analyse the available opinions of foreign authors on this controversial issue.

The authors of this study describe and compare legal opinions on the regulation of the activities of artificial intelligence abroad. The paper proposes the classification of approaches to the legal understanding of artificial intelligence proposed in the scientific literature. Apart from the aforementioned methods, the study employed the comparative legal method. Firstly, to investigate the success of legal regulation of the issues under study in other countries and the possibility of implementing the corresponding legal constructions in Ukrainian legislation. Secondly, the method of legal modelling allowed formulating the alleged positive aspects and disadvantages of certain legal structures for regulating the legal status of artificial intelligence. Based on Ukrainian and foreign legislation, as well as judicial practice, the study identifies the most viable options for resolving controversial legal issues that correspond to the legal nature of artificial intelligence.

Notably, the hermeneutical method was used in this paper to interpret the essence and content of the main definitions that describe artificial intelligence in the legal plane. The provisions and conclusions of this study are also based on articles on philosophy, economic theory, general theory of state and law, financial law, theory of administrative law, other branch legal sciences, studies of individual foreign researchers. Current legislation, scientific publications, statements, assumptions, and other regulations that establish and regulate the procedure for resolving socio-legal conflicts constitute the main legal basis for scientific research. Using the sociological method, the authors clarified the positions and opinions of lawyers, prosecutors, and judges on the practical application of artificial intelligence in the justice system proceeding from judicial practice. The statistical method is used to generalise and analyse the conclusions of Ukrainian and foreign researchers and investigate the problems under study. The empirical and informational structure of this study also comprises generalisations of practical activities of subjects of jurisprudence, statistical materials, reference publications, political and legal journalism, and other legal achievements.

RESULTS

Trends in the development of modern public relations indicate a desire to use artificial intelligence in the field of electronic justice. The developed ideas about the technological aspects of artificial intelligence do not fully fit into the legal consciousness of both Ukrainian and foreign researchers of law. The legislator's unwillingness to determine the legal mode of operation of artificial intelligence is conditioned upon the lack of any experience in its use. The introduction of artificial intelligence in the life of society will show its advantages and disadvantages only after a long time. Under these circumstances and modern forecasting of mechanisms of legal regulation of machine intelligence is rather conditional and imperfect. That is why this study investigates the possible ways and legal consequences of introducing artificial intelligence into the e-justice system in Ukraine (SHEMSHUCHENKO, 2018).

Upon considering court cases, artificial intelligence will allow the court to quickly and reliably establish the essential circumstances of the case, verify the arguments of the participants in the process and, as a result, considerably reduce the time for making an objective decision. In such disputes, it is often necessary to evaluate the integrity of the behaviour of participants in public relations, regardless of the emotional and psychological factors that affect, in particular, the work of a human judge. Understanding artificial intelligence as a digital programme based on the mathematical algorithms laid down by its developers, which produces “new” solutions (machine thinking), requires studying the

algorithms of its work in court, including from the standpoint of optimising the judicial procedure and the purpose of establishing the truth in the case. This article reveals the problems of two areas of application of artificial intelligence in court when considering legal disputes: office management and general issues of litigation; assessment of evidence and establishment of legally significant circumstances in a public or private legal dispute (PONKIN and REDKINA, 2018).

Thus, in the specialised literature, artificial intelligence is understood either as a device capable of “acting, determining its actions and evaluating their consequences without full human control based on the results of processing information coming from the external environment”, or as a computer programme that simulates the human brain, which has a learning mechanism built in (GOLDFARB and TREFLER, 2018). In Europe, artificial intelligence (AI) is a cyberphysical (non-biological) autonomous, but physically (energy) dependent support system that can exchange data with its environment and analyse it, self-learn based on acquired experience and interaction, and adapt its actions and behaviour in accordance with environmental conditions. According to the philosophical encyclopaedia, artificial intelligence is a digital system that simulates human intellectual and sensory abilities using computing devices (a neural network). The fact that artificial intelligence will be neutral in relation to humans is a myth. It was dispelled in modern times, when it became clear that technology has its autonomy and independence from humans. The humankind has become a hostage to the technology it created, it cannot free itself from its reverse influence on themselves. It is obvious that artificial intelligence created by humans contains not only unlimited possibilities, but also unlimited dangers.

At the present time, the artificial intelligence system is spontaneously improving, influencing a person and subjugating them; it can grow into a dangerous world for humans, which is partly what is happening today and becomes an inevitable threat. Artificial intelligence has its own laws and language, the lack of a deep understanding of which in humans makes decisions unpredictable (SHEMSHUCHENKO, 2018). For example, procedural legislation requires a judge to be guided by his internal belief when evaluating evidence, which is a much more complex category than software algorithms. Depending on the particular circumstances, the same evidence may be rejected in one case and, on the contrary, accepted as a basis in another case. Admittedly, the artificial intelligence system will never be capable of penetrating the depth of the human psyche. Artificial intelligence can assess the circumstances of a case only from the standpoint of formal logic, and that is why it will never be capable of fully understanding the plot of the case, since in many cases, for example, family, and especially criminal, there is a lot of irrationals, as opposed to formal-logical.

Furthermore, upon making a decision, the court is guided by numerous evaluation and value criteria stipulated by the law. For example, the principles of justice and humanism in the imposition of punishment, the requirements of reasonableness and good faith in civil law. Understanding of such general categories is formed in a person in the process of socialisation, upbringing, and personality development – all this cannot be reproduced in a software algorithm.

In the context of dynamic updating of legislation caused, among other things, by the technological advance, it is not uncommon for courts to apply the analogy of statute and the analogy of law, which is understood as dispute resolution based on the general principles and content of legislation. The meaning of legislation, that is, its spirit, can only be revealed by a person with a high level of legal culture, and not by a computer. With particular clarity, the impossibility of replacing a judge with artificial intelligence is established in cassation proceedings. After all, the basis for cancelling a court decision in cassation is not any formal violation, but only a substantial violation of legal norms that affected the results of consideration of the case and without the elimination of which it is impossible to restore and protect violated rights, freedoms, and legitimate interests. These criteria derive from the principle of legal certainty, by virtue of which the quashing of a judicial decision on formal grounds is inadmissible. Only a professional judge can evaluate whether the violation committed meets the materiality criterion and whether it can affect the outcome of the case (COUNCIL OF EUROPE, 2018).

In turn, the computer algorithm will record any violation and come to the conclusion that the judicial act is subject to cancellation, even if the formal cancellation leads to the same outcome of the case. Therefore, it is at least premature, but most likely impossible, to contemplate replacing the judge with artificial intelligence. Therewith, the use of artificial intelligence in the consideration of the already mentioned indisputable requirements is not excluded, primarily in writ proceedings, since such work is not related to the analysis of legal relations between the parties and is more technical in nature. In some developed countries, such systems are already being implemented (PONKIN and REDKINA, 2018).

Admittedly, the constant expansion and change of the regulatory framework, judicial practice, increasing the burden on the judicial system, which leads to a large number of investigative and judicial errors, actualises the use of artificial intelligence in the Ukrainian judicial system as it is disinterested, incorruptible, objective, and capable of finding almost infallible legal solutions, ways, and methods of effective justice. The authors of the present study cannot but agree that such systems will not only be of great service in the work of courts, prosecutors, officials of investigative bodies, and advocates, but will also enable

an objective external control over their activities. Unfortunately, to date, no official document of the legislative framework of Ukraine contains a regulatory definition of the term “artificial intelligence”, although the term itself is actively used in many countries. This situation is conditioned upon the lack of a single legal approach to establishing its common characteristics in different countries. In particular, the creators of the European civil legislation on robotics point out that it is impossible to give an accurate definition of artificial intelligence, which is associated with the real presence of various robots. In this regard, in their opinion, the study of the latter should be approached casuistically, considering each work individually, as a separate unique case.

DISCUSSION

Thus, the term “artificial intelligence” is used to refer to a large scope of scientific and applied research. This name, which is attached to this subject area, most people are more likely to associate with smart robots or thinking computers, numerous images of which were created in science fiction works. That is why many concerns about artificial intelligence are circulating in modern society, and such alarm signals continue to arrive with increasing force. Artificial intelligence is not only associated with the display of human qualities in machines, it also helps drive vehicles, can become an ideal tool for stealing confidential data, increase company productivity, or create ideal opportunities for corporate spies. Artificial intelligence is not yesterday's invention. The history of its creation is full of memorable moments and names of reputable scientists, ups and downs, extravagant promises and loud disappointments. Artificial intelligence is finally starting to bring real benefits to the state, business, citizens, and the humankind in general.

The power of computers has dramatically increased, there are more algorithms for solving tasks, and, most importantly, the world produces a huge amount of fuel that feeds artificial intelligence – billions of gigabytes every day. Notably, despite the active development of AI technologies, the level of their implementation remains low, which complicates the assessment of the true potential of such technologies. McKinsey Institute experts conducted detailed case studies on five sectors of government activity. The obtained results allow assuming a hypothetical transformation of some types of activities, which, in turn, will disrupt the work of other sectors by a chain reaction (ARTIFICIAL INTELLIGENCE..., 2018). Artificial intelligence has broad prospects for many stakeholders, including multinational corporations, start-ups, governments, and social institutions (WORLD BANK GROUP, 2016). There is no doubt that artificial intelligence has a huge potential for fundamental change in society. However, at this stage, it is difficult to predict the direction that the development

of this technology will take. Corporations, governments, and employees themselves are guided by the principle of time intervals. However, there is already a need for urgent and clear measures to respond to risks, which are also evident in every existing state (PONKIN and REDKINA, 2018).

The development of digital technologies in the era of the information society and the processes of globalisation, the speed of data transmission, confirmed the prospect of introducing artificial intelligence in the courts. It became evident that artificial intelligence is our present, and not the future, which the humankind has long begun to study and only recently approved and began to apply it in most countries of the world. Therewith, the current state of the research on artificial intelligence in the world indicates a long workflow of software engineers together with neuroscientists to build an artificial cognitive system close to human physiology and the reproductive abilities of the human brain, which are still not studied by science (PONKIN and REDKINA, 2018; BABAK et al., 2021). In legal proceedings, human activity is limited by certain formal rules, which is why it is permissible to use only specialised intelligent systems that can work, although independently, but under full human control (EUROPEAN COMMISSION, 2020). Artificial intelligence should be recognised as a source of increased danger; therefore, in this case, it is necessary to assign responsibility for the damage caused by its activities to its creators in accordance with the law. Responsibility for damage caused as a result of the use of artificial intelligence in legal proceedings should be borne by the state. After all, only the state should act as the sole creator of intelligent systems, if they are used in state bodies, to perform the obligations assigned to them. Therefore, the creation and use of “smart” robots for criminal purposes, as well as illegal interference in the activities of artificial intelligence systems, which will lead to causing socially dangerous harm, should impose criminal liability (SHEMSHUCHENKO, 2018; TACIJ et al., 2014).

For example, in the United States, scientists have long begun to think about the use of artificial intelligence in court proceedings. The country annually considers a huge number of cases of deprivation of parental rights. Considering the fact that there is a case law in the USA, that is, the possibility of copying a decision from another case that is suitable in terms of parameters, the idea is not so strange. It is enough to find a similar case in the database and see what decision was made then. And if there is a large amount of information, evidence base in the case, then the task is completely reduced to analysing statistics and actions according to the template. Thus, such algorithms are created by people, which means that they somehow reflect the picture of the world of their creators. Neural networks used in artificial intelligence technologies are based on decisions made by humans. Therewith, as data accumulates, it is possible to identify patterns that

have nothing to do with decision-making (BUOCZ, 2018). But the neural network is designed in such a way that it will certainly take the detected pattern for the necessary material. For example, if men were convicted more often than women in any type of criminal case, then for artificial intelligence, the defendant's gender may eventually turn into a significant factor and would influence decision-making.

In December 2018, the European Commission for the Efficiency of Justice of the Council of Europe approved the European Ethical Charter, which contains the principles of the use of artificial intelligence in judicial and law enforcement systems (ARTIFICIAL INTELLIGENCE..., 2020). This is the first international act regulating such a sensitive and unknown area. The Charter deals with the need for user control: a judge has the right to disagree with a decision proposed by artificial intelligence, and any participant in a dispute has the right to appeal against such a decision and demand that the court consider their case without using artificial intelligence in court. There is, however, another aspect that cannot be ignored. In the present-day world, "advanced" technologies are used not only by lawyers, but also by representatives of criminal structures, organised crime, etc. If their actions are not countered by the same modern technology, the criminals will find themselves in a deliberately advantageous position. The same reasoning allows contemplating the importance of maintaining equality before the law or the court: if modern technologies are used, then ideally, they should be accessible to everyone. Thus, the question of whether or not artificial intelligence will penetrate the field of law should not be considered critically. It is only important to understand where it belongs, and which areas of activity of the state and citizens in it will forever or at least for a long time remain with a person (SHEMSHUCHENKO, 2018).

Undoubtedly, for more than three decades, advances in information and communication technologies (ICT) have been penetrating the work of courts and prosecutors, promising transparency, efficiency, and radical changes in the procedure and methods of activity, such as the transition to paperless proceedings (GETMAN et al., 2019). Although these promises have not yet been fulfilled in most countries, computer programmes and algorithms are carrying out a growing number of judicial procedures. These technologies have a predominantly positive impact on the operation of judicial systems and the values stipulated by international principles of judicial conduct. The latest wave of technologies is based on artificial intelligence and promises to transform the way court decisions are made. This goal is achieved mainly through a special technology called "machine learning", which makes forecasts by analysing case materials – both procedural documents and corresponding court decisions (SHEMSHUCHENKO, 2018). Based on the analysis of this set of data ("training data"), statistical

comparisons are established between cases and corresponding court decisions. The more data the algorithm processes, the more accurate its predictions for new cases will be. Consequently, these systems “learn” to reproduce decisions that judges would make on similar ones. Unlike the already used technologies for digital data and document exchange, this technology of “predictable justice” (as it is often incorrectly called) is designed to influence court decisions. At present, it remains unknown whether it will improve the quality of solutions or interfere with the proper operation of the system (LARINA and OVCHINSKY, 2020).

The potential impact of such technology on the administration of justice can be assessed by examining the problems posed by already used information technologies, such as record-keeping and electronic filing systems. In England and Wales, a simple arithmetic error in the official form of the document used in divorce cases led to an incorrect calculation of alimony in 3,600 cases in 19 months. The problem is not the error itself, but the reasons why the Ministry of Justice and those who used this form did not notice it for so long. Users usually pay attention to the interface and the tools that enable them to use technological systems, rather than their internal operation (MATVEEV et al., 2008). Judicial technologies provide access to an array of court case data to increase transparency, but the way systems assess this data internally is difficult to evaluate and control. Therefore, the main question is whether it is possible to create effective mechanisms to control the internal operation of ICT and data processing algorithms. Another question is how to guarantee due oversight of technologies and their accountability, namely using the example of artificial intelligence (or rather machine learning).

Some countries, including the United States, use technology that makes recommendations for making decisions about pre-trial detention. Such programmes use algorithms calculating the probability of relapse and “estimate” the probability that the accused will commit a crime if they are not taken into custody. Technologies, whether office management systems, simple online forms, or more complex programmes that use artificial intelligence in their activities, should only be used in litigation if there are appropriate human-side control mechanisms (BUOCZ, 2018; SHULZHENKO and ROMASHKIN, 2021). After all, today, the problem of control is even more acute when it comes to artificial intelligence systems based on machine learning. In this case, the forecasts are based on algorithms that change over time. In machine learning, algorithms “learn” (change) based on their experience. When algorithms change, one no longer knows how they work or why they behave in a certain way. How can the humans ensure their accountability if they do not possess effective monitoring mechanisms? This question remains open. And until technical and institutional solutions are found, the principle of caution should be guided. The reservations

and precautionary principle mentioned are part of the Ethical Charter on the use of artificial intelligence in the judicial systems of the Council of Europe. This specifically refers to the principles of compliance with fundamental rights and user control of artificial intelligence (SHEMSHUCHENKO, 2018). However, the way these principles are to be implemented remains unclear. This task is certainly not for lawyers, parties to the case, or judges. It can only be carried out with the involvement of specialists from various fields, monitoring the operation of systems and evaluating artificial intelligence for compliance with key values stipulated by international principles of judicial conduct and regulations available in national legislation in each state practicing artificial intelligence.

CONCLUSIONS

Considering the arguments brought up in the present study, broad discussions at international conferences and scientific discussions, the issue of developing common approaches to understanding the place of artificial intelligence in the modern system of knowledge and international relations is topical. However, the scientific literature contains enough reasons to doubt the use and implementation of artificial intelligence. In this regard, it would be correct to suggest the following questions that are to be resolved, namely:

- (1) development of approaches to the future strategy or concept of legal regulation of artificial intelligence;
- (2) determination of the scope of its legal personality and probability of liability;
- (3) suggestions of areas for development in both national and international law;
- (4) investigation of legally significant problems relating to links with new developments in artificial intelligence, as well as relating to the application of the available types of autonomous intelligent systems, in various transport, communication, security, legal systems, etc.;
- (5) determination of the prospects for creating doctrines and legal provisions concerning the developers, control and improvement of autonomous intellectual systems, legal regimes, variables for the use of such systems, as well as the development of links between new mechanisms of legal support for artificial intelligence;
- (6) permissibility and limits of application of modern legal norms concerning liability (administrative, civil, criminal) against developers of artificial intelligence systems, their operators, and other persons.

An analysis of those arguments suggests that litigation and the work of artificial intelligence are impossible in isolation from a human judge. The available artificial intelligence technologies do not allow making “machine decisions” (judicial acts) independently and completely. Questions of law and legal qualification cannot be transmitted to artificial intelligence without their evaluation by a human judge. It is necessary to use artificial intelligence in matters that require processing a large amount of information and documents in electronic form. Thus, artificial intelligence will ensure procedural savings and terms of consideration of a legal dispute on the merits by means of speed and error-free calculation and processing of a large number of incoming and outgoing correspondence, procedural documents in the case, evidentiary material, including decisions made in the given proceedings. The use of artificial intelligence ensures the development of technological legal science in Ukraine in terms of objective establishment of legal facts. Public disclosure of digital algorithms for the operation of judicial artificial intelligence will bring greater digital publicity to Ukrainian litigation and ensure transparency of the entire judicial system in the state.

REFERENCES

- Aletras, N., Tsarapatsanis, D., Preoțiu-Pietro, D. & Lampos, V. (2018). Predicting judicial decisions of the European Court of Human Rights: A Natural Language Processing Perspective. *PeerJ Computer Science*, 2, e93.
- Application of Artificial Intelligence on the Basis of the Court of First Instance: VRP Initiates the Launch of a Pilot Project. (2021). Available at: https://jurliga.ligazakon.net/news/201578_zastosuvannya-shtuchnogo-ntelektu-na-baz-sudu-persho-nstants-vrp-ntsyu-zapusk-plotnogo-proektu.
- Artificial Intelligence: The Next Digital Frontier? (2017). Available at: <https://www.mckinsey.com/~media/mckinsey/industries/advanced%20electronics/our%20insights/how%20artificial%20intelligence%20can%20deliver%20real%20value%20to%20companies/mgi-artificial-intelligence-discussion-paper.ashx>
- Babak, V. P., Babak, S.V., Eremenko, V.S., Kuts, Y.V., Myslovych M.V., Scherbak, L.M. & Zaporozhets, A.O. (2021). Models of Measuring Signals and Fields. *Studies in Systems, Decision and Control*, 360, 33-59.
- Buocz, T. J. (2018). Artificial intelligence in court: Legitimacy problems of AI assistance in the judiciary. *Retskraft — Copenhagen Journal of Legal Studies*, 2(1), 41-59.

- Cherniavskiy, S. S., Holovkin, B. M., Chornous, Y. M., Bodnar, V. Y. & Zhuk, I. V. (2019). International cooperation in the field of fighting crime: Directions, levels and forms of realization. *Journal of Legal, Ethical and Regulatory Issues*, 22(3), 1-11.
- Council of Europe. (2018). *European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and Their Environment*. Available at: <https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c>.
- European Commission. (2020). *On Artificial Intelligence – A European approach to excellence and trust*. Available at: https://ec.europa.eu/info/sites/default/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf.
- Furashev, S. O. (2018). *Internet of things: Problems of legal regulation and implementation*. Kyiv: Polytechnic Publishing House.
- Getman, A., Karasiuk, V., Hetman, Y. & Shynkarov, O. (2019). Ontological representation of legal information and an idea of crowdsourcing for its filling. *Advances in Intelligent Systems and Computing*, 836, 179-188.
- Goldfarb, A. & Trefler, D. (2018). *AI and International Trade*. Cambridge: National Bureau of Economic Research.
- Larina, O. S. & Ovchinsky, V. S. (2020). *Artificial intelligence. Ethics and law*. Moscow: Knizhnyĭ mir.
- Lomakin, N. I. & Samorodova, I. A. (2017). *Digital economy with artificial intelligence*, 254-257. *Advances in Science and Technology: Collection of articles based on the results of the IX International Scientific and Practical Conference*. Moscow: Research and Publishing Center “Aktualnost.RF”.
- Matveev, M. G., Sviridov, A. S. & Aleinikova, N. A. (2008). *Artificial intelligence models and Methods*. Application in economics. Moscow: Publishing House “Finansy i Statistika”.
- Nesbitt, J. (2017). *Ways artificial intelligence is transforming trade*. Available at: <https://www.tradeready.ca/2017/topics/import-export-trade-management/4-ways-artificial-intelligence-transforming-trade/>
- Pittman, K. (2016). *Infographic: A brief history of collaborative robots*. Available at: <https://www.engineering.com/story/infographic-a-brief-history-of-collaborative-robots>.
- Ponkin, I. V. & Redkina, A. I. (2018). Artificial intelligence from the point of view of law. *Bulletin of the Peoples' Friendship University of Russia. Series: Legal Sciences*, 22(1), 91-109.
- Shemshuchenko, V. (2021). *Artificial intelligence in justice*. Available at: <https://cedem.org.ua/analytics/shtuchnyj-intelekt-pravosuddia/>.

- Shulzhenko, N. & Romashkin, S. (2021). Types of individual criminal responsibility according to article 25 (3) of Rome Statute. *Juridical Tribune*, 11(1), 72-80.
- Tacij, V. J., Tjutjugin, V. I. & Grodeckij, J. V. (2014). Conceptual model establish responsibility for offense in the legislation of Ukraine. *Criminology Journal of Baikal National University of Economics and Law*, 2014(3), 166-183.
- World Bank Group. (2016). *Harnessing the Power of Big Data for Trade and Competitiveness Policy*. Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/26266/113275-WP-PUBLIC-P152206-8-3-2017-17-28-0-BigDataTCEdited.pdf?sequence=5&isAllowed=y>.
- Yaroshenko, O. M., Vapnyarchuk, N. M., Burnyagina, Y. M., Kozachok-Trush, N. V. & Mohilevskyi, L. V. (2020). Professional development of employees as the way to innovative country integration. *Journal of Advanced Research in Law and Economics*, 11(2), 683-695.
- ZAKIROV, R.F. (2018). The use of modern IT-technologies as a means to achieve the main objectives of the judiciary. *Bulletin of the Civil Process*, 2(1), 211-219.

The Law, State and Telecommunications Review / Revista de Direito, Estado e Telecomunicações

Contact:

Universidade de Brasília - Faculdade de Direito - Núcleo de Direito Setorial e Regulatório
Campus Universitário de Brasília
Brasília, DF, CEP 70919-970
Caixa Postal 04413

Phone: +55(61)3107-2683/2688

E-mail: getel@unb.br

Submissions are welcome at: <https://periodicos.unb.br/index.php/RDET>