

APPLICATION OF ARTIFICIAL INTELLIGENCE IN MOTIVATING COURT DECISIONS: Legal Basis and Foreign Experience

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Abstract: The article is devoted to the study of opportunities and challenges of using artificial intelligence in motivating court decisions. An important aspect of this process consists of the application of special knowledge by judges in the context of analyzing evidence and legal evaluation of this evidence. The use of artificial intelligence in this area can become a significant innovation that can improve the quality of court decisions and ensure objectivity in the sphere of justice. Artificial intelligence technologies are rapidly developing, and their potential application in the sphere of judiciary has become a subject of deep interest both among the scientific community and among representatives of legal professions. According to the research results, it has been established that the application of artificial intelligence during the motivation of court decisions is possible provided the development and implementation of effective legal mechanisms that will allow coordination and regulation of the specified process. Also, the procedure of implementing relevant changes in the justice system of Ukraine should take place with the use of a balanced and scientifically based approach, which allows for weighing potential risks and benefits and developing recommendations for the proper practical and ethical use of artificial intelligence technologies.

Keywords: Court Decision, Artificial Intelligence, Substantiation, Reasonableness, Justice, Evaluation.

Abstrak: Artikel ini dikhususkan untuk mempelajari peluang dan tantangan penggunaan kecerdasan buatan dalam memotivasi keputusan pengadilan. Aspek penting dari proses ini adalah penerapan pengetahuan khusus oleh hakim dalam konteks menganalisis bukti dan evaluasi hukum atas bukti tersebut. Penggunaan

kecerdasan buatan di bidang ini dapat menjadi inovasi signifikan yang dapat meningkatkan kualitas putusan pengadilan dan menjamin objektivitas di bidang peradilan. Teknologi kecerdasan buatan berkembang pesat, dan potensi penerapannya di bidang peradilan telah menjadi perhatian besar baik di kalangan komunitas ilmiah maupun di antara perwakilan profesi hukum. Berdasarkan hasil penelitian, ditemukan bahwa penerapan kecerdasan buatan dalam memotivasi keputusan pengadilan dimungkinkan dengan pengembangan dan penerapan mekanisme hukum yang efektif yang memungkinkan koordinasi dan pengaturan proses ini. Selain itu, prosedur penerapan perubahan yang relevan dalam sistem peradilan Ukraina harus dilakukan dengan menggunakan pendekatan yang seimbang dan berbasis ilmiah, yang memungkinkan untuk mempertimbangkan potensi risiko dan manfaat serta mengembangkan rekomendasi untuk penggunaan teknologi kecerdasan buatan yang tepat secara praktis dan etis. .

Kata Kunci: Putusan Pengadilan, Kecerdasan Buatan, Pembuktian, Kewajaran, Keadilan, Evaluasi.

Introduction

One of the most important aspects of the court's activity during the administration of justice consists in the justification of choosing legal norms to be applied in a specific case, as well as in performing analysis of parties' evidence and arguments provided which form the basis for adoption of a court decision. In legal science, this aspect is traditionally studied as proper substantiation of a court decision.¹ A properly substantiated (reasoned) decision is an indicator that the arguments of the parties have been taken into account, and the public has an opportunity to monitor the progress of justice.² Substantiation is important because it allows process participants and society to understand and evaluate the reasons for making a particular decision. Substantiation

of the court decision, as an explanation of the decision-making mechanism, also ensures compliance with the principles of transparency and openness of justice, promotes the adoption of fair court decisions, and is a component of the right to defense.³ It is substantiation of court decisions in the context of explaining the assessment of evidence, qualification of actions, determination of the type and amount of punishment, as well as reasons for refuting the evidence provided by the parties that is a necessary condition for ensuring availability and quality of justice.⁴

In its essence, proper substantiation of court decisions is a form of external expression of the internal conviction of the judge as a result of his/her evaluation of evidence according to the rules provided by the procedural

¹ Abdillah, Masykuri. "Sharia and Politics in the Context of Globalization and Society 5.0." *Ahkam: Jurnal Ilmu Syariah* 22.2 (2022).

² Anam, Wahidul, and Mubaidi Sulaeman. "Law, Ethics, and Hadith Ahkam: An Analysis of Fatwa MUI in the Perspective of Progressive Interpretation." *Samarah: Jurnal Hukum Keluarga dan Hukum Islam* 8.2 (2024): 1023-1053.

³ Prakasa, S. U. W., S. Al-Fatih, and A. R. A. Haqqi. "Terrorism Eradication in ASEAN Countries:

Human Rights Perspective. *AL-IHKAM: Jurnal Hukum & Pranata Sosial*, 16 (2), 327-361." (2021).

⁴ Aamir Khan, AI-powered Indian judiciary: A step forward or cause for concern?, *Bar and Bench*. (Blog Post, 6 June 2023). Available at: <https://www.barandbench.com/columns/litigation-columns/ai-powered-indian-judiciary-a-step-forward-cause-concern>.

legislation.⁵ Evaluation of evidence is the mental activity of an investigator, prosecutor, investigating judge, or court with the participation of other participants in criminal proceedings, which boils down to the fact that these subjects of the process are guided by the law "according to their inner conviction, which is based on a comprehensive, complete and impartial study of all the circumstances of the criminal proceedings) evaluate each piece of evidence from the point of view of propriety, admissibility, credibility, and the totality of the collected evidence - from the point of view of sufficiency and interrelationship for making the appropriate procedural decision".⁶ A problem in this context consists of the court's application of special knowledge and the formation of individual cognitive judgments based on this knowledge.⁷ For a qualitative response to the specified problem, there is a need to find innovative approaches that can reduce the influence of judicial subjectivism and increase the objectivity of court decisions. The use of artificial intelligence technologies, which is the basis of the conducted research, is one of such possible tools.⁸

Issues related to the analysis of the impact of artificial intelligence on judicial processes, as

well as on aspects of criminal legislation and its legal regulation, were studied by G. Sartor and L. K. Branting in their work "Judicial Applications of Artificial Intelligence".⁹ The authors studied the application of artificial intelligence in the process of making judicial decisions, where highly developed legal knowledge is combined with cognitive and emotional competence.¹⁰ In G. Hallevy's "When Robots Kill: Artificial Intelligence Under Criminal." the researcher focuses on assessing the responsibility of robots, machines, or software that have different degrees of autonomy, his theory covers aspects of responsibility of the manufacturer, the programmer, the user, and all other involved subjects.¹¹

The application of technologies and tools of artificial intelligence was the subject of research carried out by K. Brennan-Marquez and S. Henderson in 2018. However, such issues as ethical and sociocultural features of introducing artificial intelligence in criminal justice, analysis of practical aspects of the introduction of artificial intelligence in the justice systems of other countries, issues of security and data protection, etc., are insufficiently studied.¹²

The purpose of the article consists of

⁵ Bahruddin, Ahmad. "Implementasi maqasid al-shari'ah sebagai solusi problematika sosial dan kemasyarakatan kontemporer." *Ijtihad: Jurnal Wacana Hukum Islam dan Kemanusiaan* 17.1 (2017): 1-18.

⁶ Criminal Procedure Code of Ukraine. (2013). Information of the Verkhovna Rada of Ukraine. Available <https://zakon.rada.gov.ua/laws/show/4651-17#Text>

⁷ Faisol, Muhammad. "Hukum islam dan perubahan sosial." *JURIS (Jurnal Ilmiah Syariah)* 18.1 (2019): 33-44.

⁸ Voloshanivska, Tetiana, Inna Pozihun, Serhii Losych, Olha Merdova and Yevhen Leheza. 'Administrative and Criminal Law Aspects of Preventing Offenses Committed by Minors in the Sphere of Illegal Circulation of Narcotic Drugs, Psychotropic Substances and Precursors'. *Journal of Drug and Alcohol Research*, 12(10) (2023). <https://doi.org/10.4303/JDAR/236269>

⁹ Mumtazinur, Mumtazinur, and Yenny Sri Wahyuni. "Individual Security (Personal Security) and Qanun Family Law: Overview of Human Security Concepts (Human Security)." *EL-USRAH: Family Law Journal* 4.1 (2021): 76-89.

¹⁰ Sartor G., Branting K., *Judicial Applications of Artificial Intelligence*. (1998). Springer Science+Business Media B.V. 222. Available at: https://www.researchgate.net/publication/321575910_Judicial_Applications_of_Artificial_Intelligence

¹¹ Hallevy G., *When robots kill: artificial intelligence under criminal*. (2013). Northeastern University Press, 272. Available at: https://www.researchgate.net/publication/290246169_When_Robots_kill_Artificial_intelligence_under_criminal_law

¹² Sartor G., Branting K., *Judicial Applications of Artificial Intelligence*. (1998). Springer Science+Business Media B.V. 222. Available at:

analyzing opportunities and challenges of using artificial intelligence in motivating court decisions. The main tasks are the research of the existing artificial intelligence systems used in the judiciary of different countries and the determination of their potential to improve the quality of court decisions; identifying useful tools and advantages of using artificial intelligence in evaluating evidence and motivating court decisions, as well as analyzing capabilities of software for predicting risks and developing effective strategies for responding to them in the sphere of criminal justice; analysis of challenges and risks associated with the use of artificial intelligence technologies, such as protection of personal data and transparency of algorithms; consideration of potentially effective legal mechanisms for coordination and regulation of the process of using artificial intelligence for proper substantiation of judicial decisions, taking into account scientific and ethical aspects.¹³

The logical-semantic method was used to define the conceptual apparatus used in the research. With the help of the analysis method, the available data, and scientific sources regarding the use of artificial intelligence in the criminal process, in particular during substantiation of court decisions, were considered. Application of the comparative legal method made it possible to compare different approaches, systems, and practices related to the use of artificial intelligence in criminal justice in different countries, including assessing the advantages, disadvantages, challenges, and

opportunities of each of these systems to understand what approaches can be effective or unacceptable in the Ukrainian context. The system method is applied to study how the implementation of artificial intelligence affects the entire justice system and its components, including the substantiation of court decisions.¹⁴

Artificial intelligence can be defined as the ability of machines or computer systems to reproduce intelligence comparable to human cognitive abilities. This broad field encompasses several subfields, each of which explores different aspects of artificial intelligence. Artificial intelligence systems are carefully designed to perceive the environment, analyze it based on all available information, and, ultimately, perform actions to achieve specific goals and objectives. To achieve this, systems rely heavily on a combination of advanced algorithms and statistical models to successfully analyze and process vast amounts of complex data, allowing them to continuously learn and incrementally improve their performance.¹⁵

In the context of criminal justice, the integration of artificial intelligence technologies can certainly prove to be extremely useful, especially when it comes to decision-making processes. When using artificial intelligence, legal professionals can effectively identify and evaluate potential evidence, carefully assess risks and various factors, and predict and evaluate potential

https://www.researchgate.net/publication/321575910_Judicial_Applications_of_Artificial_Intelligence

¹³ Umami, Ulul, and Abdul Ghofur. "Human Rights in Maqāṣid al-Sharī'ah al-Āmmah: A Perspective of Ibn 'Ashūr." *Al-Ahkam* 32.1 (2022): 87-108.

¹⁴ Zaporozhchenko, Yuliia, et al. "Foreign Experience of Ensuring Human Rights during Recruitment of

the Armed Forces as an Element of the State's National Security." *Syariah: Jurnal Hukum dan Pemikiran* 24.1 (2024): 88-101.

¹⁵ Ali, Zezen Zainul. "The Urgency of Patriotism in Maintaining the Unity in the Republic of Indonesia in the Perspective of Maslahah." *Historia* 1.1 (2017): 13.

outcomes.

The implementation of artificial intelligence in the criminal justice system allows the automation of various tasks, such as data analysis, document review, and information retrieval. Such automation streamlines processes, saving significant time and resources for representatives of legal professions. In addition, AI-powered tools can make recommendations based on patterns and correlations in the data, helping to uncover important evidence or connections that might otherwise be missed. These technologies also have the potential to reduce bias and promote objectivity in decision-making because they are programmed to analyze data impartially and without subjectivity.

In addition, artificial intelligence can play a significant role in preventing and solving crimes. By analyzing historical crime data and their patterns, AI algorithms can identify potential areas of increased criminal activity and enable law enforcement agencies to strategically allocate their resources.¹⁶ Such a proactive approach can help deter criminal behavior and maintain public safety.¹⁷

Artificial intelligence can also help identify and track suspects through surveillance video analysis, facial recognition, and behavioral

analysis. These technologies will increase the efficiency and accuracy of investigations while increasing the probability of arresting and prosecuting criminals, and they will also improve the qualitative presentation of the motivational part of court decisions (sentences).¹⁸

Method

Qualitative methods By analyzing historical crime data and their pattern, AI algorithms can identify the potential fields of increasing criminal activity and enable law enforcement agencies to strategically allocate their resources. Using a proactive approach like that can help prevent criminal behavior and maintain public safety.¹⁹

Artificial intelligence can also help identify and track suspects through conducting supervisory video analysis, face recognition, and behavior analysis. This technology will increase the efficiency and accuracy of the investigation while increasing the possibility of capturing and demanding criminals, and they will also increase the qualitative presentation of the motivation part of the court decision (punishment).²⁰

Results and Discussion

Artificial intelligence also has the potential to transform the way courts work, with an

¹⁶ Aibak, Kutbuddin. "Implementation of Maqāṣid Shari'ah in Reform of Case Management of Violence against Women and Children." *De Jure: Jurnal Hukum dan Syar'iah* 15.1 (2023): 82-98.

¹⁷ Hefni, Wildani, Rizqa Ahmadi, and Imam Mustofa. "Reinventing the Human Dignity in Islamic Law Discourse: The Wasatiyah Approaches from Khaled Abou El-Fadl to the Interreligious Relation." *Al-Manahij: Jurnal Kajian Hukum Islam* (2022): 239-254.

¹⁸ Korniakova T., Soldatkin I., Leheza Ye., Rozmosh V., Opatsky R. 'Administrative, financial, criminal-legal and theoretical-methodological aspects of regulating social relations', *Jurnal cita hukum*

Indonesian law journal, 10 (3) (2022), 436-446 <https://doi.org/10.15408/jch.v10i3.27809>.

¹⁹ Kumar, M. H. (2018). Qualitative Research Methodology in Social Sciences and Related Subjects. *Journal of Economic Development, Environment and People*, 7(1), 23.

²⁰ Joao Reis. (2019). Artificial Intelligence in Government Services: A Systematic Literature Review. *Advances in Intelligent Systems and Computing (Special Issue from WorldCIST 2019 - 7th World Conference on Information Systems and Technologies)*, 1(1), 460-472.

emphasis on developing algorithms capable of processing large volumes of factual and legal data, statutory law, and case-specific information. Thanks to the integration of machine learning methods, AI programs can not only process a significant amount of information but also provide a consistent and unbiased evaluation of evidence. Artificial intelligence applied in courts can improve data management, consulting, and forecasting while ensuring compliance with ethical principles, human rights, equality, data security, transparency, and control on the part of the user.²¹

At the same time, it should be taken into account that such an element of the proof process as evidence evaluation is based on the internal conviction of the subject and differs from automatic data analysis that can be performed by an artificial intelligence system.²² When assessing information, artificial intelligence takes data from the database, analyzes these data using mathematical algorithms, and makes a report with an assessment of the relevant parameters performed. The more data available in the system, the higher the accuracy of the report. However, if the artificial intelligence takes into account the data that is artificially created or forged, is based on the incorrect translation, incorrect conclusion and explanations of the expert,

takes into account the knowingly false statements of witnesses, the victim, the suspect, the accused person, then the conclusion of the artificial intelligence will be false and inadmissible for use in the motivation of the decision.²³

Artificial intelligence systems are increasingly being used in litigation and the courtroom in jurisdictions around the world, from Australia, China, the US, and the UK to Estonia, Mexico, and Brazil. The experience of Great Britain in using the artificial intelligence system HART - Harm Assessment Risk Tool (hereinafter referred to as HART) is interesting for performing analysis of risks and possibilities of using artificial intelligence in the justice system. HART is a risk assessment tool designed to assist in the assessment of potential harm or risk associated with an individual. Developed by integrating advanced data analysis and predictive modeling techniques, HART aims to provide a systematic and standardized approach to the procedure of risk assessment. Its primary function is to assist judges and parole boards in making more informed decisions regarding pretrial release, sentencing, and parole.²⁴

One notable advantage of HART consists in its ability to objectify the procedure of decision-making using reducing the influence of human judgment. HART uses big data sets

²¹ Bazarov, S. The use of artificial intelligence in the judiciary: theory and practice. Jurisprudence. (2022). <https://doi.org/10.51788/tsul.jurisprudence.2.3./hhkt6836>

²² Leheza, Yevhen. Shablysty, Volodymyr. Aristova, Irina V. Kravchenko, Ivan O. Korniakova, Tatiana. 2023. Foreign Experience in Legal Regulation of Combating Crime in the Sphere of Trafficking of Narcotic Drugs, Psychotropic Substances, their Analogues and Precursors: Administrative and Criminal Aspect. Journal of Drug and Alcohol Research. 12, 4, 1-8.

²³ Leheza, Yevhen, Larysa Yerofieienko, and Volodymyr Komashko. 'Peculiarities of Legal Regulation of Intellectual Property Protection in Ukraine under Martial Law: Administrative and Civil Aspects'. Revista Justiça Do Direito 37, no. 3 (2023): 157-72.

²⁴ European ethical Charter on the use of Artificial Intelligence in judicial systems and their environment' (Council of Europe, 3-4 December 2018). Available at: <https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c>

and predictive modeling techniques to create risk assessments. This data-driven approach allows the tool to identify patterns and trends that may not be immediately obvious to the decision-maker. This can improve the accuracy of risk prediction. Although HART aims to predict the likelihood of harm or risk, it cannot fully capture the complexity of human behavior. Factors such as personal growth, rehabilitation, and external factors cannot be fully accounted for in the prognostic model.²⁵

Also, the use of artificial intelligence tools in the process of making judicial decisions raises ethical issues regarding the delegation of powers to algorithms. There is a risk that reliance solely on an algorithmic approach may violate human rights or promote discriminatory practices, particularly if not carefully monitored and regulated.²⁶

In Brazil, at least 47 courts have AI programs and systems in use or under development.²⁷ The Supreme Federal Tribunal of Brazil uses software that automates appeals and

provides guidance without limitation on legal precedents and potential courses of action when dealing with legal challenges. Similarly, the Tribunal of Justice of the State of Minas Gerais uses software capable of identifying and classifying legal resources that relate to the same issues or are the subject of applicable precedents.²⁸

In 2020, the Supreme Court of India launched the Supreme Court Portal for Assistance in Courts Efficiency (SUPACE) to assist judges in accessing information.²⁹ This machine learning-based application offers a variety of features including file preview, chatbot for reviewing cases and queries, universal search function, real-time progress tracking, job details, logic matrix for fact extraction, and notepad for preparing summary documents.³⁰

In March 2022, Saudi Arabia introduced virtual execution courts that operate without human intervention, which is said to have simplified the previously 12-stage judicial process to two stages.³¹

²⁵ Leheza, Yevhen, Volodymyr Shablysty, Irina V. Aristova, Ivan O. Kravchenko, and Tatiana Korniakova. 'Foreign Experience in Legal Regulation of Combating Crime in the Sphere of Trafficking of Narcotic Drugs, Psychotropic Substances, Their Analogues and Precursors: Administrative and Criminal Aspect'. *Journal of Drug and Alcohol Research* 12, no. 4 (2023). <https://doi.org/10.4303/JDAR/236240>.

²⁶ Korniienko, Maksym, Anatolii Desyatnik, Galina Didkivska, Yevhen Leheza, and Oleksiy Titarenko. 'Peculiarities of Investigating Criminal Offenses Related to Illegal Turnover of Narcotic Drugs, Psychotropic Substances, Their Analogues or Precursors: Criminal Law Aspect'. *Khazanah Hukum* 5, no. 3 (2023): 205-15. <https://doi.org/10.15575/kh.v5i3.31742>.

²⁷ Eduardo Villa Coimbra Campos, *Artificial Intelligence, the Brazilian Judiciary and Some Conundrums*, SciencesPo. (Blog Post, 3 March 2023). Available at: <https://www.sciencespo.fr/public/chaire->

[numerique/en/2023/03/03/article-artificial-intelligence-the-brazilian-judiciary-and-some-conundrums/](https://www.sciencespo.fr/public/chaire-numerique/en/2023/03/03/article-artificial-intelligence-the-brazilian-judiciary-and-some-conundrums/)

²⁸ Brennan-Marquez K. and Henderson S., *Artificial Intelligence and Role-Reversible Judgment*. (2018). *Journal of Criminal Law and Criminology*, 109.

²⁹ Katie Brehm et al, *The Future of AI in Brazilian Judicial System: AI Mapping, Integration, and Governance*. (Report, 2020). Available at: <https://itsrio.org/en/publicacoes/the-future-of-ai-in-the-brazilian-judicial-system/>

³⁰ Samiksha Mehra, *AI is set to reform justice delivery in India*, INDIAai. (Blog Post, 6 April 2021). Available at: <https://indiaai.gov.in/article/ai-is-set-to-reform-justice-delivery-in-india>

³¹ Justice minister inaugurates Virtual Enforcement Court in Saudi Arabia, *Zawya*. (online, 28 March 2022). Available at: <https://www.zawya.com/en/legal/justice-minister-inaugurates-virtual-enforcement-court-in-saudi-arabia-p5dhnpu7>

In the United Arab Emirates, the judicial department of Abu Dhabi in August 2022 introduced the “smart court” initiative, which involves the use of artificial intelligence to increase the level of court decisions and speed up the judicial process.³²

The use of artificial intelligence in criminal decision-making poses several challenges related to potential ethical and legal consequences. There are frequently arising questions regarding the fairness, accountability, and transparency of artificial intelligence systems. It is worth noting that when applying artificial intelligence, the principles of equality, impartiality, and protection of human rights must be observed. The accuracy and reliability of artificial intelligence systems are also a potential challenge, as errors or biases in decision-making algorithms can lead to violations of the right to a fair trial.³³ Also, artificial intelligence systems often require access to confidential information, so data security and storage are another major concern. Sensitive personal data must be protected with robust measures to prevent unauthorized access and possible breaches. Comprehensive data security systems, including best practices of encryption and access control, as well as regular audits of data processing in artificial

intelligence systems complement these efforts. Compliance with data protection laws and regulations is also important.³⁴

The reliability of artificial intelligence systems used in criminal proceedings is important to ensure their effective integration into the justice system. For this reason, quality validation and testing processes involving comprehensive evaluations performed on different data sets that reflect real-world situations are necessary. Regular testing and updating of AI systems to improve their reliability and accuracy is of paramount importance. Transparency in the process of developing and testing artificial intelligence systems is equally important, as far as it helps stakeholders to understand the operation of artificial intelligence algorithms and understand exactly how decisions are made.³⁵ Promoting transparency and comprehensibility ensures that all parties involved in the legal process, including judges, lawyers, and defendants, can critically evaluate decisions made by artificial intelligence in terms of their fairness and reasonableness. This contributes to strengthening the sense of accountability, strengthening trust in the system, and

³² Abdulla Rasheed, Abu Dhabi criminal cases now followed up by artificial intelligence, Gulf News. (online, 8 August 2022). Available at: <https://gulfnews.com/uae/crime/abu-dhabi-criminal-cases-now-followed-up-by-artificial-intelligence-1.89792712>

³³ Leonenko, Tetiana Ye., Maksym I. Leonenko, Olha Yu. Shyian, Vasyl M. Yurchyshyn, and Oleh O. Shkuta. “Pathological” Religiosity Phenomenon as Manifestation of Individual’s Deviant Behavior: Religious Hatred or Discord Motive in Commission of Crimes in the Religious Denomination Sphere’. *Journal of Advanced Research in Law and Economics* 10, no. 1 (2019): 295–306.

³⁴ Leheza, Yevhen, Tatiana Filipenko, Olha Sokolenko, Valerii Darahan, and Oleksii Kucherenko. ‘Ensuring Human Rights in Ukraine: Problematic Issues and Ways of Their Solution in the Social and Legal Sphere’. *Cuestiones Políticas* 37, no. 64 (2020): 124–36. <https://doi.org/10.46398/cuestpol.3764.10>.

³⁵ Dymko, Iegor, Arsen Muradian, Yevgeny Leheza, Andrii Manzhula, and Oleksandr Rudkovskiy. ‘Integrated Approach to the Development of the Effectiveness Function of Quality Control of Metal Products’. *Eastern-European Journal of Enterprise Technologies* 6, no. 3 (90) (2017): 26–34. <https://doi.org/10.15587/1729-4061.2017.119500>.

supporting the basic principles of justice, equality, and the rule of law.³⁶

The use of artificial intelligence is a potentially possible way to solve the problem of dependence of proper substantiation of court decisions on the quality of a judge's evaluation of the examined evidence. However, when using artificial intelligence systems, it is necessary to ensure that a fine balance is maintained between the preservation of the judge's inner conviction and the need for algorithmization and objective data analysis.³⁷

Artificial intelligence can play a transformative role in ensuring access to justice and providing a reasoned judicial decision in a case, but its application should take place after thorough scientific and practical research as well as after the introduction of appropriate changes to the law. Scientific justification and analysis of the existing Ukrainian and international legal framework and the practice of application will be the topics of further research.³⁸

Conclusion

When researching existing artificial intelligence systems used in the judiciary of different countries, their features and potential advantages for improving the quality of court decisions were revealed. Information about these systems helped to

understand how their use can contribute to the objectivity and efficiency of justice.

The performed analysis of the useful tools and advantages of artificial intelligence in evaluating evidence and motivating court decisions has highlighted the potential of using these technologies in criminal justice. In particular, these technologies can help predict risks and develop effective strategies for responding to these risks.

When considering challenges and risks associated with the use of artificial intelligence, it was found that the protection of human rights, the security of personal data, and the transparency of algorithms are actual challenges. These aspects require careful consideration as well as the development of appropriate measures to address them.

In the process of research, it was established that the integration of artificial intelligence technologies in criminal justice has a huge potential to increase the efficiency, effectiveness, and fairness of the criminal justice system. While using advanced algorithms, machine learning, and data analysis, AI can assist in decision-making, crime prevention, evidence evaluation, and performing legal research. However, it is necessary to carefully consider the ethical and legal implications of implementing artificial intelligence, ensuring that issues of privacy, transparency, and accountability will be

³⁶ Leheza, Yevhen. Pisotska, Karina. Dubenko, Oleksandr. Dakhno, Oleksandr. Sotskyi, Artur. 2022. the essence of the principles of Ukrainian law in modern jurisprudence. *Revista jurídica portugalense*, december, 342-363. doi: [https://doi.org/10.34625/issn.2183-2705\(32\)2022.ic-15](https://doi.org/10.34625/issn.2183-2705(32)2022.ic-15)

³⁷ Shkuta, Oleh, Dmytro Karbovskiy, Olena Pushkina, Mykola Potip, and Olena Varhuliak. 'Object and Subject of State Control in the Sphere of Legal Turnover of Narcotic Drugs, Psychotropic

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³⁸ Volobuieva, Olena, Yevhen Leheza, Vita Pervii, Yevhenii Plokhuta, and Roman Pichko. 'Criminal and Administrative Legal Characteristics of Offenses in the Field of Countering Drug Trafficking: Insights from Ukraine'. *Yustisia Jurnal Hukum* 12, no. 3 (2023): 262-77.

properly addressed. With proper safeguards, artificial intelligence can become a valuable tool in the sphere of administration of justice and maintenance of a fair and equal society.

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