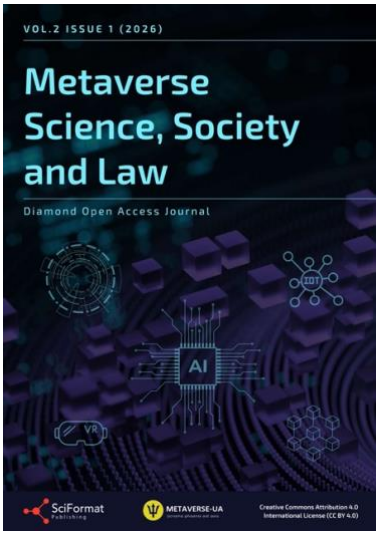


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PROBLEMS OF THE CLASSIFICATION OF CRIMINAL OFFENSES COMMITTED THROUGH THE USE OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES

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ABSTRACT

The article examines the issues involved in the classification of criminal offenses committed through the use of artificial intelligence technologies, taking into account current trends in the development of the digital environment and the transformation of methods of criminal activity. It is substantiated that the spread of intelligent algorithms, generative models, automated data analysis systems, and digital platforms incorporating elements of artificial intelligence significantly affects the mechanism of committing criminally unlawful acts and complicates their detection, proof, and proper criminal-law assessment. It is determined that, from the criminal-law perspective, artificial intelligence should be regarded not as an independent subject of criminal liability, but as a means, instrument, method, or contextual element in the commission of a criminal offense.

The first part of the article reveals the criminal-law characteristics of acts committed through the use of artificial intelligence technologies and outlines the main forms of their manifestation in the sphere of encroachments upon property, information security, public safety, and human rights and freedoms. The second part focuses on the specific features of establishing the elements of a criminal offense when such technologies are used, in particular the determination of the object, objective element, subject, subjective element, form of guilt, causal link, and the limits of criminal liability of a person who uses algorithmic systems for unlawful purposes.

It is concluded that the current criminal legislation of Ukraine generally makes it possible to classify such acts; however, in the context of the rapid development of artificial intelligence, there is a need to clarify certain provisions of criminal law, develop uniform approaches to law enforcement, and deepen the doctrinal understanding of the role of artificial intelligence in the mechanism of criminally unlawful conduct.

KEYWORDS

Artificial Intelligence, Criminal Offense, Classification of Criminal Offenses, Elements of a Criminal Offense, Criminal Liability, Digital Technologies

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Introduction

The current stage of societal development is characterized by the rapid spread of digital technologies, among which artificial intelligence systems occupy a special place. Such technologies are increasingly used not only in the spheres of governance, economy, or communication, but also in processes that may be connected with the preparation, commission, concealment, or complication of the detection of criminal offenses [1]. As a result, criminal law is facing new challenges, since conventional approaches to the legal assessment of conduct require adaptation to situations in which artificial intelligence acts as a tool, method, or component of the mechanism of unlawful behavior [2].

The relevance of this topic is обусловлена by the fact that the development of artificial intelligence technologies has already moved beyond a purely technical issue and directly affects the sphere of criminal-law regulation. In Ukraine, a strategic course toward the development and broad implementation of AI solutions by 2030 has been declared at the state level, which indicates a further expansion of the areas of application of such technologies and, consequently, an increased risk of their use for unlawful purposes [3]. Under such circumstances, the issue of the proper classification of criminal offenses committed through the use of artificial intelligence technologies acquires not only theoretical but also direct practical significance for pre-trial investigation bodies, the prosecutor's office, and the courts [2].

A particular feature of this issue is that the current Criminal Code of Ukraine does not contain a separate section or a special corpus delicti constructed exclusively around the use of artificial intelligence. However, this does not mean that legal mechanisms for response are absent. On the contrary, most socially dangerous acts in which AI is used for the generation of falsified content, unlawful interference with information systems, fraudulent schemes, data manipulation, creation of malicious software, or other unlawful activity are subject to classification under the existing provisions of criminal law. At the same time, the use of such technologies complicates the determination of the method of committing the act, the form of guilt, the causal link, the role of accomplices, and the limits of criminal liability of a specific person [2].

An additional layer of complexity arises from the fact that, in the context of the use of artificial intelligence, the very mechanism of committing a criminal offense is changing. Whereas criminal activity was previously, in most cases, directly associated with the physical or digital actions of the individual, certain stages may now be carried out in an automated manner, through the use of algorithmic models, generative systems, software-based analysis of large datasets, or the autonomous reproduction of specific commands. This necessitates a deeper understanding of how artificial intelligence technologies affect the elements of a criminal offense and whether they may alter the approaches to distinguishing between preparation, attempt, and a completed criminal offense [2].

It is equally important that the criminal-law assessment of acts committed through the use of artificial intelligence cannot be carried out in isolation from constitutional and international legal benchmarks. The Constitution of Ukraine defines the human being, their life and health, honor and dignity, inviolability and security as the highest social value, while the affirmation and protection of human rights and freedoms constitute the principal duty of the State [1]. Therefore, when classifying acts related to the use of AI, it is necessary to take into account not only the need for an appropriate criminal-law response, but also the requirements concerning the lawfulness of the collection, use, and evaluation of information, including personal data, digital traces, and other information possessing evidentiary value [5].

European and international approaches also confirm that the use of artificial intelligence in sensitive areas must be assessed through the prism of risks to human rights, security, and the rule of law. Regulation (EU) 2024/1689 (the AI Act) establishes a risk-based model of legal regulation of artificial intelligence systems, while the Council of Europe Framework Convention on Artificial Intelligence, Human Rights, Democracy and the Rule of Law emphasizes the need for transparency, oversight, accountability, and the prevention of adverse effects of AI on human rights [6]. In turn, UNESCO's recommendations in the field of artificial intelligence ethics stress human oversight, fairness, non-discrimination, and accountability, which are also important for the criminal-law understanding of cases involving the unlawful use of such technologies [8].

Despite the growing scholarly interest in artificial intelligence, the issue of the classification of criminal offenses committed through the use of such technologies remains insufficiently developed. Most often, researchers focus on technical risks, the administrative-law foundations of regulation, or the ethical aspects of AI, whereas the criminal-law characterization of the relevant acts and the peculiarities of establishing the elements of a criminal offense in the context of the use of algorithmic systems require separate comprehensive analysis. This explains the logic of the structure of the article, in which the criminal-law characteristics of the

relevant acts are first considered, followed by the peculiarities of establishing the elements of a criminal offense when artificial intelligence technologies are used.

The issues of criminal-law assessment of contemporary threats associated with the development of digital technologies, the use of artificial intelligence, and the proper classification of criminal offenses under new conditions, although not yet the subject of an integral and independent study in domestic criminal-law scholarship, have nonetheless found partial reflection in the works of such scholars as V. I. Antypov, O. M. Bodunova, D. I. Lopashchuk, N. A. Luhina, V. P. Liubavina, O. V. Kostenko, M. H. Maksimentsev, O. P. Milevskyi, L. V. Omelchuk, O. A. Pavliukh, N. A. Sperkach, V. V. Topchii, V. M. Tertyshnyk, and others.

The purpose of the article is to conduct a comprehensive analysis of the problems involved in the classification of criminal offenses committed through the use of artificial intelligence technologies, as well as to determine the peculiarities of establishing the elements of a criminal offense in cases where such technologies are used as a tool or as a component of the mechanism of unlawful behavior. Achieving this purpose involves clarifying the criminal-law nature of the relevant acts, identifying the main difficulties in their classification, and outlining directions for improving law enforcement approaches in the context of the development of digital technologies.

Part 1. Criminal-Law Characterization of Acts Committed through the Use of Artificial Intelligence Technologies

The rapid spread of artificial intelligence technologies has significantly affected the nature of contemporary criminal conduct, as digital systems are increasingly used not only in lawful activities but also as instruments for the preparation, commission, concealment, or complication of the detection of criminal offenses [2]. For criminal law, this means the need to assess not so much the technology itself as the role it plays in the mechanism of a socially dangerous act. For this reason, the issue of the use of artificial intelligence should be considered not in isolation, but within the framework of the traditional categories of the criminal-law characterization of an offense [6].

From the criminal-law perspective, artificial intelligence cannot be regarded as an independent subject of a criminal offense. The current Criminal Code of Ukraine expressly defines the subject of a criminal offense as a natural, sane person who has reached the age of criminal liability; accordingly, the bearer of criminal liability remains the human being, even where that person uses complex algorithmic systems to carry out their intent [2]. In view of this, artificial intelligence should properly be characterized as a means, instrument, method, or отдельный element of the circumstances of the commission of a criminal offense, but not as a full-fledged participant in criminal-law relations [6].

The criminal-law characterization of acts committed through the use of artificial intelligence technologies is, first and foremost, connected with determining which criminally protected social relations are infringed by the offender. In practical terms, such technologies may be used in offenses against property, information security, privacy, public safety, the functioning of electronic systems, and other objects of criminal-law protection. This includes, in particular, the use of generative models to deceive victims, algorithms for unauthorized interference with information systems, the automated creation of falsified content, manipulation of digital data, or the dissemination of malicious software solutions [6].

A particular feature of the objective element of such acts lies in the fact that artificial intelligence is capable of substantially altering the method of committing a criminal offense. Whereas in traditional forms of criminal activity most actions are performed directly by a human being, when AI is used certain stages may be automated: the collection of information, the creation of false texts, voices, or images, the mass dissemination of messages, the selection of targets, the analysis of vulnerabilities, or the adaptation of malicious code. However, such technical mediation does not in itself remove the criminal-law significance of human conduct if it was the human being who initiated, configured, directed, or knowingly used the system to achieve an unlawful result [6].

Within the criminal-law characterization, it is also important to take into account that the use of artificial intelligence often increases the social dangerousness of the act. This may be manifested in the scale of impact, the high speed of the spread of consequences, the difficulty of identifying the source of the attack, the transnational nature of the harm, and the possibility of simultaneously affecting a large number of victims or information systems. At the same time, the mere presence of an AI component does not automatically mean the emergence of a new corpus delicti: as before, the decisive factors for classification remain the substance of the act, its consequences, the method of commission, the form of guilt, and other constituent elements provided for by criminal law [2].

The subjective element of such acts also requires particular attention. The use of artificial intelligence does not eliminate the requirement to establish the guilt of a specific person, since criminal liability in Ukraine is based on the principle of personal and culpable responsibility. Therefore, in each case it is necessary to determine whether the person understood the nature of the use of the relevant technology, whether they foresaw the possible consequences of its application, and whether they desired those consequences or consciously allowed them to occur. If, however, the system generated a result that substantially exceeded the original intent of the person, decisive importance is attached to the analysis of causation, the foreseeability of the consequences, and the limits of the person's control over the behavior of the algorithm [13].

The criminal-law characterization of acts committed through the use of artificial intelligence cannot disregard the constitutional dimension of the issue. Since the Constitution of Ukraine enshrines the human being, as well as their rights and freedoms, as the defining guideline of state activity, and since the Criminal Code is intended to ensure the legal protection of the most important social values, the assessment of such acts must be carried out with due regard to the balance between the need for an effective criminal-law response and the inadmissibility of arbitrary expansion of the limits of criminal repression [1]. For this reason, the principles of legality, the prohibition of analogy in criminal law, and the requirement to determine precisely what act was committed by the person through the use of technology acquire particular importance in this field, rather than transferring criminal-law assessment directly to the artificial intelligence system itself.

Part 2. Particularities of Establishing the Elements of a Criminal Offense in Cases Involving the Use of Artificial Intelligence Technologies

The particularity of establishing the elements of a criminal offense in cases involving the use of artificial intelligence technologies lies in the fact that such technology does not constitute an independent basis for criminal liability, but rather affects the manner in which unlawful conduct is carried out, the nature of its consequences, the mechanism of proof, and the limits of an individual's personal liability. Therefore, the focus of criminal-law assessment should not be the mere fact that an algorithmic system was used, but the specific socially dangerous act, its legally significant features, and the link between human conduct and the harmful result. It is precisely this approach that is consistent with the constitutional foundations of legality, the principle of personal responsibility, and the traditional categories of Ukrainian criminal law. The same conclusion is reflected in contemporary academic approaches, in which artificial intelligence is regarded as an instrument, means, or element of the mechanism of committing a criminal offense, but not as an autonomous subject of crime [13].

First and foremost, in each particular case it is necessary to correctly determine the object of the criminal offense. The use of artificial intelligence technologies does not alter the fact that criminal-law protection is directed toward social relations safeguarded by the Criminal Code of Ukraine. At the same time, the use of such technologies may complicate the determination of the nature of the encroachment, since the same AI system may be used to infringe upon property, information security, the authority of state power, privacy, public safety, or other legally protected interests [2]. In this respect, artificial intelligence does not create a new generic object, but it may substantially change the manner in which already existing objects of criminal-law protection are attacked, in particular through the mass generation of falsified content, automated data collection, intelligent vulnerability analysis, or the scaling of unlawful influence upon victims [11].

Equally complex is the establishment of the features of the objective element. In the traditional model, it includes the act, consequences, and causation, and in certain cases also the method, time, place, circumstances, instruments, and means of committing the criminal offense [2]. When artificial intelligence technologies are used, the method of commission assumes particular importance, since an algorithmic system may be employed for automated target selection, the processing of large datasets, the imitation of voice or image, the creation of phishing messages, the manipulation of digital evidence, or the generation of misleading content. In such situations, AI does not replace human action, but technologically mediates it; therefore, the task of the law enforcer is to establish the precise role the technology played in the commission of the encroachment: whether it functioned as an instrument, a method, an auxiliary stage, or merely as the technical environment for the realization of intent [11]. European and international approaches likewise proceed from the premise that the assessment of AI systems must be risk-oriented, taking into account their potential impact on human rights, security, and the rule of law [6].

A separate issue is causation between the actions of the person and the socially dangerous consequences. If the offender merely uses a ready-made artificial intelligence system as an instrument to achieve a predetermined unlawful result, causation is usually established according to general rules. Greater difficulty

arises where the algorithm acts with a degree of autonomy, offers unexpected solutions, or generates a result that goes beyond the original scenario. In such cases, decisive significance attaches to whether the result was objectively foreseeable for the person, whether that person had the ability to control the use of the system, whether they understood the risks of its application, and whether they consciously allowed such consequences to occur or caused them through negligence [2]. Scholarly literature quite rightly emphasizes that, in the context of the use of artificial intelligence, causation does not disappear, but merely becomes more complex due to the multi-layered technical mediation of conduct [13].

As regards the subject of the criminal offense, current Ukrainian criminal legislation leaves no doubt: the subject is a natural, sane person who has reached the established age of criminal liability [2]. Accordingly, even the most sophisticated algorithmic system cannot be recognized as the subject of a criminal offense within the meaning of the Criminal Code of Ukraine. This means that, during classification, it is necessary to determine the role of a specific individual: the developer, operator, customer, user, organizer, or another person who consciously involved the technology in the mechanism of criminally unlawful conduct. It is precisely the nature of that person's actual actions that determines whether they are to be regarded as the principal offender, organizer, instigator, or accomplice. This approach is consistent with the principle of nullum crimen sine culpa, to which contemporary Ukrainian criminal-law doctrine also expressly adheres in matters relating to artificial intelligence [11].

Particular attention must be paid to establishing the subjective element. Artificial intelligence may be used both in premeditated fraudulent or cybercriminal schemes and in situations where a person does not fully understand the potential of the system or the consequences of its use. For that reason, proper classification requires a clear determination of the form of guilt, the direction of intent, the extent of the person's awareness of the factual circumstances, and their attitude toward possible consequences. If a person knowingly uses artificial intelligence technology to mislead, to carry out unauthorized interference, to falsify data, or to exert another socially dangerous influence, the indicators of intentional guilt are established according to general rules. If, however, a negative result occurs as a consequence of careless or irresponsible use of the system, the question of negligence arises, but only where this is permitted by the construction of the relevant corpus delicti [2]. At the same time, international instruments in the field of AI ethics and trustworthy AI additionally emphasize the importance of human control, transparency, explainability, and accountability, all of which directly affect the assessment of the extent to which a person truly understood the consequences of using the technology [8].

The use of artificial intelligence technologies also affects the determination of the stages of committing a criminal offense. Such systems may be involved already at the stage of preparation, for example for identifying vulnerabilities, automatically collecting information about a potential victim, preparing harmful content, or modelling a criminal scheme. At the stage of attempt, they may ensure the partial implementation of an unlawful plan, even if the final result does not occur for reasons beyond the person's control. For this reason, in classification it is important to distinguish between situations in which AI is used merely as an auxiliary means of preparation and those in which it has already been used to commence the direct execution of the objective element of the criminal offense [2]. In this respect, the scholarly approach is entirely justified according to which the use of artificial intelligence does not destroy the classical structure of the stages of criminal activity, but makes their practical distinction more difficult [11].

No less significant is the issue of proof and the procedural assessment of information obtained through the use of artificial intelligence technologies. The Criminal Procedure Code of Ukraine does not confer upon an AI system the status of an independent participant in proceedings or an autonomous source of evidence [3]. Therefore, the outputs of algorithmic systems must be assessed not as self-sufficient truth, but as auxiliary analytical material requiring verification, procedural formalization, and critical assessment by the investigator, prosecutor, or court. Contemporary Ukrainian studies in the field of criminal procedure quite reasonably emphasize that the outputs of such programs are of a recommendatory nature, and that the absence of full algorithmic transparency, together with the risks of error, bias, and so-called AI "hallucinations," does not permit their conclusions to be mechanically transferred into the sphere of proof of the circumstances of criminal proceedings [12].

Since the use of artificial intelligence in criminal proceedings is often connected with the analysis of large volumes of information, digital profiles, video images, biometric features, and other sensitive data, the establishment of the elements of a criminal offense cannot be separated from the requirements of legislation on information and personal data protection [4]. In practical terms, this means that, during the collection, verification, and evaluation of materials obtained with the involvement of algorithmic systems, due regard

must be paid to the legal regime governing information, the limits of permissible personal data processing, and the requirements for the proper protection of such data [5]. International standards in this field emphasize the need for transparency, technical reliability, documentation, and accountability of AI systems, while the Council of Europe Framework Convention explicitly directs states toward a risk- and impact-based approach, including the assessment of effects on human rights and the implementation of measures for risk prevention and mitigation [7]. In the European approach, these requirements are further specified through the principles of human oversight, safety, transparency, non-discrimination, and responsibility [9].

For Ukraine, this issue also has a distinctly practical dimension, since the State is officially developing an Artificial Intelligence Development Strategy through 2030 and regards AI as one of the areas of integration into public administration, security, and other socially significant spheres [10]. This means that the number of situations in which law enforcement authorities, investigators, and courts will encounter the results of the use of algorithmic systems will inevitably increase. For that reason, the issue of establishing the object, objective element, subject, subjective element, causation, and procedural value of information in cases involving the use of artificial intelligence already requires greater doctrinal certainty and clearer approaches to law enforcement [12].

Thus, the particularities of establishing the elements of a criminal offense in cases involving the use of artificial intelligence technologies amount to the fact that the traditional elements of the offense retain their significance, but require a deeper analysis of the actual role of the human being, the technical function of the algorithm, and the manner in which the socially dangerous result was achieved. In this field, it is unacceptable both to simplistically transfer liability to the technology itself and to underestimate the new risks created by the algorithmic automation of criminal conduct. The proper classification of such acts is possible only through the combination of the classical provisions of criminal law with contemporary international standards concerning the safe, transparent, and controlled use of artificial intelligence systems [6].

Conclusions

The conducted research provides grounds for concluding that the issues surrounding the classification of criminal offenses committed through the use of artificial intelligence technologies belong to the most relevant and, at the same time, the most complex questions of contemporary criminal law. This is due to the fact that the rapid development of digital technologies substantially transforms not only the technical means of social activity, but also the mechanisms by which criminally unlawful acts are committed. Artificial intelligence is increasingly used as a tool for automated information analysis, the creation of falsified content, behavior modeling, the processing of large data sets, the concealment of traces of unlawful activity, and the enhancement of the effectiveness of criminal conduct. Under such circumstances, criminal-law scholarship and law enforcement practice are faced with the need to rethink the traditional institutions of both the General and Special Parts of criminal law through the prism of the digital transformation of society.

The study has established that artificial intelligence technologies do not in themselves constitute a separate autonomous phenomenon lying beyond the scope of criminal-law regulation. On the contrary, their application should be considered within the context of the already existing elements of a criminal offense, since it is precisely through those elements that the legal assessment of any socially dangerous act is carried out. In this respect, artificial intelligence cannot be recognized as an independent subject of criminal liability, because the subject of a criminal offense remains, as before, a natural, sane person who has reached the age established by law. Accordingly, the use of algorithmic systems does not remove human responsibility, but merely complicates the determination of the actual role of the individual in the mechanism of the encroachment, the degree of that person’s control over the technology, the form of guilt, and the nature of the consequences.

An important result of the study is the conclusion that, within the structure of criminally unlawful conduct, artificial intelligence most often functions as a means, instrument, method, or element of the circumstances of the commission of a criminal offense. It is in this sense that it acquires criminal-law significance. Its use may substantially affect the objective element of the act, alter the method of its commission, increase the scale of the harm caused, accelerate the occurrence of socially dangerous consequences, complicate the detection of criminal activity, and heighten the latency of certain offenses. At the same time, the mere presence of an AI component does not in itself indicate the need to create a new corpus delicti. What is decisive is which social relations are infringed by the offender, by what method the encroachment is carried out, what consequences arise, and what the person’s mental attitude toward the act is.

Particular attention in the study has been devoted to the specific features of establishing the elements of a criminal offense in cases involving the use of artificial intelligence technologies. It has been established that

the greatest difficulties arise in clarifying the objective element, causation, and the subjective element. Whereas in traditional cases the mechanism of causing harm is more obviously connected with the concrete conduct of the individual, in the context of AI use that conduct is often mediated by complex software solutions capable of acting rapidly, automatically, and with a high degree of adaptability. As a result, the law enforcer must establish not only the external fact of the use of a particular technology, but also whether the individual understood the functional capabilities of the relevant system, whether they foresaw the possible consequences of its application, and whether they desired those consequences or consciously allowed them to occur. For that very reason, the traditional categories of intent, negligence, preparation, attempt, and completed criminal offense do not lose their significance in the conditions of digitalization, but require deeper and more precise interpretation.

The study also made it possible to determine that the use of artificial intelligence technologies creates serious difficulties for distinguishing the roles of accomplices. In practical terms, situations may arise where one person creates or adapts the relevant algorithmic tool, another ensures its technical implementation, a third uses it directly for the commission of the criminal offense, and a fourth facilitates the concealment of traces. Under such circumstances, the individualization of criminal liability assumes particular importance, because the mere existence of a digital intermediary should not negate the requirement to determine precisely the contribution of each individual to the common criminal result. Therefore, the classification of such acts requires not simplified technocratic solutions, but a careful examination of the factual circumstances of the case, clarification of the content of the intent of each participant, and determination of the role of the technology in the overall mechanism of the encroachment.

Another significant conclusion is that the current criminal legislation of Ukraine generally makes it possible to carry out the legal assessment of acts committed through the use of artificial intelligence technologies. In most cases, therefore, the issue is not the complete absence of criminal-law means of response, but rather the difficulty of applying them to new forms of unlawful conduct. At the same time, the existing body of legislation does not provide sufficient certainty for a uniform and consistent understanding of the role of artificial intelligence in the classification of particular criminal offenses. This concerns, above all, the assessment of the method of commission, the establishment of causation under conditions of technical mediation, the evidentiary value of the outputs of algorithmic systems, and the distinction between criminally punishable conduct and the lawful or neutral use of digital technologies.

The study also makes it possible to assert that the further development of legal regulation in this sphere should not proceed through the hasty introduction of a large number of special criminal-law prohibitions, but through the balanced improvement of doctrinal and legislative approaches to classification. This concerns, in particular, the need for a clearer understanding of the use of artificial intelligence as an indication of the method of committing a criminal offense, as a circumstance capable of affecting the degree of social dangerousness of the act, or as a factor that complicates the detection and proof of unlawful conduct. Equally important is the formation of uniform approaches in judicial and investigative practice regarding the assessment of the actions of persons who use AI in fraudulent schemes, cybercrime, unlawful interference with information systems, manipulation of digital data, and other socially dangerous forms of conduct.

In summary, it should be noted that the principal problem in classifying criminal offenses committed through the use of artificial intelligence technologies lies not in the fact that criminal law is losing its capacity to respond to new challenges, but in the fact that these challenges require a more precise, flexible, and conceptually balanced application of the already existing criminal-law instruments. Artificial intelligence does not abolish the classical foundations of criminal law, but compels a reassessment of the content of certain elements of a criminal offense, the limits of guilt, the role of the method of commission, and the significance of human control under conditions of algorithmic automation. For this reason, further scholarly research in this field should be directed toward the development of a coherent theoretical model for the criminal-law assessment of the use of artificial intelligence technologies, one that combines the principle of legality, the requirement of legal certainty, the need for effective protection of society against new forms of criminality, and the inadmissibility of unjustified expansion of the limits of criminal liability. Only through such an approach can a proper balance be ensured between technological development, the needs of law enforcement, and the fundamental principles of Ukrainian criminal law.

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