

Theoretical and Practical Problems of Criminal Liability for Crimes Committed Through the Use of Artificial Intelligence Technologies

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Abstract: This article analyzes the criminal-legal characterization of contemporary crimes committed using artificial intelligence (AI) systems, as well as the problems associated with their qualification. Traditional concepts in criminal law doctrine — the subject of a crime and the issue of mens rea — are examined in the context of autonomous algorithms. Gaps in the criminal legislation of the Republic of Uzbekistan are analyzed, and practical proposals for ensuring security in cyberspace and improving law-making are put forward.

Keywords: Artificial intelligence, criminal liability, subject of crime, Mens Rea, Deepfake, cybercrime, black box effect, Criminal Code.

Introduction: The advancement of digital technologies in the 21st century is bringing fundamental changes to all spheres of human life. In particular, the development of artificial intelligence (AI) technologies has become an important tool for increasing efficiency in economics, medicine, education, industry, transport, and public administration. Artificial intelligence creates opportunities to analyze large volumes of data in a short time, make decisions on complex issues, and facilitate human labor. Today, generative AI systems such as ChatGPT, Gemini, Copilot, and DeepSeek are used by millions of users in their daily activities. At the same time, the widespread use of AI technologies is giving rise to new types of risks and threats.

In particular, cases of criminals using AI capabilities to commit fraud, cyberattacks, theft of personal data, spreading disinformation, and creating illegal content are increasing. Especially, the use of Deepfake technology to commit fraud by artificially falsifying people's voices and appearances has become an urgent problem worldwide. Crimes committed with the help of artificial intelligence differ from traditional crimes by their complexity and high degree of technological characteristics.

In the process of identifying, investigating, and legally assessing such crimes, numerous theoretical and practical problems arise. In particular, identifying the subject of the crime, determining the form of guilt, proving causal relationships, and establishing the boundaries of liability are among the most pressing tasks facing modern criminal law. Today, many developed countries are adopting regulatory documents aimed at regulating legal relations associated with the use of artificial intelligence. In particular, the AI Act adopted by the European Union in 2024 provides for the regulation of AI systems based on their risk level. Italy, the USA, the UK, and other countries are also implementing large-scale reforms to improve liability mechanisms related to illegal use of AI technologies.

In the Republic of Uzbekistan, as the processes of digital transformation are accelerating, the issue of legal regulation of artificial intelligence technologies is of special significance. Although a number of regulatory documents aimed at developing e-government, digital economy, and information and communication technologies have been adopted in the country, the issues of criminal liability for crimes committed with the help of artificial intelligence have not yet been

sufficiently regulated. In recent years, the number of crimes committed using generative AI systems (ChatGPT, Gemini, Copilot, and others) has been increasing. However, the Criminal Code of the Republic of Uzbekistan does not contain norms for separately qualifying acts committed using artificial intelligence. For this reason, this research develops a new model of liability for crimes committed through artificial intelligence means, and an authorial approach to the issues of the subject of the crime and guilt is proposed.

The relevance of this research is explained by the growing number of crimes committed through the use of AI technologies, the existence of gaps in the current criminal legislation related to the qualification of such acts, and the need to implement international experience into national legislation.

LITERATURE REVIEW

As a result of the rapid development of AI technologies, questions of its legal status and the liability arising from its use have become one of the most pressing research directions in modern legal sciences. In particular, cybercrimes, fraud, illegal processing of personal data, and violations related to Deepfake technologies committed with the help of artificial intelligence are posing new tasks for criminal law theory.

Issues related to criminal liability for artificial intelligence have been extensively studied by foreign scholars. In particular, G. Hallevy, in his work "When Robots Kill: Artificial Intelligence under Criminal Law," analyzes the role of artificial intelligence in criminal law and puts forward the concept of Electronic Personhood. According to the author, since highly autonomous AI systems can make independent decisions in some cases, it is necessary to reconsider their legal status. However, this approach has been criticized by many legal scholars, emphasizing that recognizing artificial intelligence as an independent subject of criminal liability is not yet practically substantiated.

A number of scientific investigations on the issues of legal liability of artificial intelligence have also been conducted by local scholar S.S. Bozarov. The scholar, analyzing the issues of recognizing artificial intelligence as a legal entity and its liability, justified the need to improve traditional legal institutions as a result of the development of modern technologies. The author notes the importance of developing new theoretical approaches in connection with the growing participation of artificial intelligence in legal relations.

In the scientific works of A. Otajonov, the issues of liability for criminal acts in the context of the development of artificial intelligence technologies are studied. According to the scholar, although the current

criminal legislation covers some forms of crimes committed with the help of artificial intelligence, the development of new legal mechanisms is necessary due to the unique characteristics of these technologies.

At the international level, one of the important steps in legal regulation of artificial intelligence is the AI Act adopted by the European Union. This regulatory document classifies AI systems according to their risk level and establishes strict requirements for high-risk systems. This document is recognized as the first comprehensive approach aimed at reducing the risks associated with the use of artificial intelligence and protecting the rights of citizens.

Furthermore, legislative reforms to improve liability issues for crimes committed with the help of AI are being implemented in countries such as Italy, the USA, and the UK. In particular, Italy has adopted norms aimed at strengthening liability for illegal use of Deepfake technologies and crimes committed through artificial intelligence. These experiences show the necessity of introducing special legal mechanisms to combat AI-related crimes.

The analyzed scientific sources show that the majority of existing research is devoted to the legal status of artificial intelligence, civil-legal liability, and ethical aspects. However, the theoretical foundations of criminal liability for crimes committed through the use of AI technologies, identifying the subject of the crime, determining forms of guilt, and establishing the boundaries of liability have not been sufficiently studied. Therefore, this research is aimed at filling precisely this gap and developing scientifically grounded proposals for improving the criminal legislation of the Republic of Uzbekistan.

Research Objective

The purpose of the research is to analyze the theoretical and practical problems of criminal liability for crimes committed through the use of artificial intelligence technologies, identify existing legal gaps, and develop scientifically grounded proposals for improving the criminal legislation of the Republic of Uzbekistan.

The tasks of the research are as follows:

- to study the legal nature of crimes committed with the help of artificial intelligence;
- to theoretically analyze the issues of the subject of the crime and guilt;
- to study and comparatively analyze the advanced experience of foreign states;
- to identify existing gaps in the current criminal legislation;

– to develop practical recommendations for improving criminal liability for AI-related crimes.

METHODOLOGY

During the research, comparative-legal analysis, logical, and systematic analysis methods were used. The norms of the European Union's "AI Act" (Artificial Intelligence Act) adopted in 2024, Italy's latest 2025 legislative experience on cybercrime, and the current norms of the Criminal Code of the Republic of Uzbekistan were mutually compared. In addition, the scientific views of local scholars S.S. Bozarov and A. Otajonov on the legal status of AI were systematically analyzed.

In the research process, based on the formal-legal method, the content and essence of legal norms related to artificial intelligence were analyzed, and the criminal-legal categories of the subject of the crime, guilt, causal relationship, and liability in connection with AI technologies were studied. The systematic analysis method was used to study the place of crimes committed through artificial intelligence in the criminal law system and their interrelation with other legal institutions. Furthermore, through the logical-legal analysis method, scientific views on identifying the responsible person, determining forms of guilt, and establishing the boundaries of liability in acts committed with the help of artificial intelligence were generalized.

The empirical basis of the research consisted of cybercrimes committed through the use of AI technologies, cases of fraud related to Deepfake technology, and modern crimes occurring in international practice. Based on these cases, the effectiveness of the current legislation was assessed and existing legal gaps were identified.

In order to ensure the scientific reliability of the research results, regulatory documents, recommendations of international organizations, scientific literature, and the experience of foreign states were comprehensively studied. Based on the obtained results, scientific-practical proposals aimed at improving the criminal legislation of the Republic of Uzbekistan were developed.

RESULTS

During the research, the criminal-legal aspects of crimes committed through the use of AI technologies were analyzed and a number of important results were achieved.

First, it was found that the current Criminal Code of the Republic of Uzbekistan does not have separate liability mechanisms for crimes committed through artificial intelligence means. Although existing norms allow the qualification of some acts on general grounds, they do

not fully cover the unique characteristics of AI technologies.

Second, practical difficulties were identified in qualifying crimes such as Deepfake fraud, cyberattacks, illegal processing of personal data, and spreading disinformation committed with the help of artificial intelligence. In particular, the issues of identifying the subject of the crime and determining the form of guilt remain complex.

Third, it was established that a human-centered model is the most appropriate approach in determining liability for harmful consequences arising from the activities of autonomous AI systems. According to this model, artificial intelligence is not an independent subject of criminal liability, but rather is assessed as a tool used in committing a crime.

Fourth, analysis of the experience of the EU AI Act document and Italian legislation showed the necessity of introducing special norms in the legal regulation of risks associated with artificial intelligence. In particular, it was found that specifying the use of Deepfake technologies and crimes committed through artificial intelligence as an aggravating circumstance is an effective mechanism.

Fifth, it was established that the "Black Box" effect found in AI systems creates significant problems in the process of investigating criminal cases and evaluating evidence. Therefore, there is a need to develop specialized cyber-forensic institutions.

As a result of the research conducted, it was justified that it is appropriate to introduce special norms related to crimes committed using AI technologies into the Criminal Code of the Republic of Uzbekistan, expand the list of aggravating circumstances, and develop separate mechanisms for investigating AI-related crimes.

Theoretical Problems: Subject of Crime and Mens Rea

According to classical criminal law doctrine, the subject of a crime can only be a physically and mentally competent individual (person) who has reached a certain age. However, when autonomous AI systems (for example, self-driving drones or neural networks) "make decisions" independently of humans and cause socially dangerous consequences, the question arises as to who is the subject. Three main models are being advanced in the international scientific community on this issue:

Human-Centered Model: The AI system is a tool in committing the crime, like a knife or firearm. Liability falls on the person who programmed it or gave the command.

Electronic Personhood Model: If a strong AI develops

self-awareness characteristics, granting it limited criminal subject status (this approach is currently being rejected by many legal scholars).

Layered Responsibility Model: When damage arises due to a system error, distributing liability among the programmer, manufacturer, and user.

Another serious problem is the "Black Box" effect. Modern neural networks operate on the basis of multi-layered logic, and even their creators cannot clearly prove how they arrived at a final conclusion. In this situation, determining a person's mental attitude toward an act (intent or negligence) and proving the causal chain becomes impossible.

Practical Problems and Qualification Errors

In practice, serious problems arise when qualifying crimes committed using AI under the articles of the current Criminal Code (CC):

Deepfake and Fraud (Article 168 of the CC): Criminals are copying the voice or appearance of the victim's close relatives through AI and demanding money. The current CC does not assess the use of this technology as an aggravating circumstance.

Cyber-terrorism and Autonomous Malicious Codes: "Smart viruses" that break the security systems of state facilities within seconds are being created with the help of AI systems. The articles on computer information in the current CC cannot fully cover the scope of these complex technological crimes.

Table 1. Summary of Problems and International Solutions

Problem Type	Current Situation (Uzbekistan CC)	Arising Practical Risk	International Solution (Precedent)
Subject problem	Only a natural person is liable	Liability chain breaks when autonomous algorithm causes harm	EU AI Act (2024) — categorization by risk groups
Deepfake fraud	Ordinary fraud (Art. 168)	Evidence falsification and identity disruption made easier	Italy (Law 132/2025) — special article introduced (Art. 612-quater)
Aggravating circumstance	AI not mentioned in Art. 56 of CC	Professional cybercriminal using AI punished same as ordinary criminal	Italy (Law 132/2025) — committing crime via AI found to be aggravating circumstance

CONCLUSIONS AND PROPOSALS

The research results show that the criminal use of AI technologies requires reform of traditional criminal law institutions. The following proposals are put forward for the purpose of improving national legislation:

1. Addition to Article 56 of the CC: The first part of Article 56 of the Criminal Code of the Republic of Uzbekistan (Aggravating Circumstances) should be supplemented with a new paragraph stating "committing a crime using artificial intelligence technologies and digital modeling (Deepfake) tools."

2. Introduction of the "Block-scheme Liability" model: If the crime was committed by an autonomous AI, the investigative system should use a three-stage model in identifying the subject: a) Programmer (whether a criminal function was intentionally embedded in the code); b) Manufacturer (whether negligence was allowed in installing security filters); c) User (whether the AI was turned into a crime weapon).

3. Development of the Cyber-forensics Institution: Establishing a specialized forensic cyber-expertise direction that examines the algorithms of neural

networks and reveals the logical chain inside the "Black Box" in criminal cases.

The research results show the necessity of reviewing the traditional institutions of criminal law in the context of the rapid development of AI technologies. Developing special norms for crimes related to artificial intelligence in the Republic of Uzbekistan, introducing rules for separately qualifying the use of Deepfake technologies, and developing the cyber-forensics system are urgent tasks.

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