

Research Article

The Use of Artificial Intelligence in Combating Offenses in the Field of Illegal Drug Trafficking: Legal Regulation, Administrative and Criminal Aspects

Dmyto Pryputen^{1*}, Andrii Sotskyi², Oleksandr Zhiltsov³, Anna Dragonenko⁴, Irina Fedorchak⁴

¹Department of General Law Disciplines, Dnipropetrovsk State University of Internal Affairs, Ukraine

²Department of Social Administration and Humanitarian Communications, Chernivtsi Institute of the International Humanitarian University, Ukraine

³Department of Professional and Special Disciplines of Kherson Faculty, Odessa State University of Internal Affairs, Ukraine

⁴Department of Criminal Law and Criminology, Donetsk State University of Internal Affairs, Ukraine

*Address Correspondence to Dmyto Pryputen, E-mail: dm_86@email.ua

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Abstract

Background: This paper focuses on the use of Artificial Intelligence in combating offenses in the field of illegal drug trafficking (legal regulation, administrative and criminal aspects).

Methods: With the help of analytical methods, the available data, scientific sources of information on the use of Artificial Intelligence in combating offenses in the field of illegal drug trafficking. The most common applications that are created on the basis of Artificial Intelligence in combating offenses in the field of illegal drug trafficking and can be used in the process of exercising a person's right to access the court and in the process of preparing a judge to administer justice.

Microsoft Copilot (formerly Bing Chat) is an Artificial Intelligence tool developed by Microsoft Corporation together with OpenAI. The main task of this tool is to work with files on a computer and increase the efficiency of work on a personal computer: Creating documents and presentations, editing photos, organizing files, helping during or after meetings in Microsoft Teams, writing a letter in Outlook, etc.

Results: This article explores the nature of Artificial Intelligence in combating offenses in the field of illegal drug trafficking in foreign countries, particularly in criminal justice. It is justified that the use of Artificial Intelligence in courts will improve the quality of court decisions and increase the efficiency and objectivity of justice. In 2023, a US federal court ruled on the possibility of registering a copyright for a work of fine art created by Artificial Intelligence DABUS (United States District Court for the District of Columbia [2023]: Thaler v. Perlmutter, No. 22-CV-384-1564-BAH).

Conclusion: It should be noted that the introduction of legal regulation of Artificial Intelligence in combating offenses in the field of illegal drug trafficking is critically important to ensure its safe and ethical use. International cooperation and harmonization of regulatory frameworks can contribute to the creation of an effective regulatory system that takes into account the interests of all parties and promotes the development of innovations, while protecting human rights and freedoms. Thus, the analysis of large volumes of data can reveal patterns and trends in court decisions and in general in the activities of public administration bodies,

and software can influence risk forecasting. A number of serious challenges and risks are associated with the purpose of securing personal data and the validity of court decisions using Artificial Intelligence technologies in combating offenses in the field of illegal drug trafficking. According to the results of the research, it was proved that Artificial Intelligence in combating offenses in the field of illegal drug trafficking is possible only if effective legal mechanisms are introduced, which allow coordinating and regulating the mentioned processes.

Keywords: Artificial Intelligence; Administrative liability; Criminal liability; Illegal turnover (trafficking); Narcotic drugs and psychotropic substances; Offenses precursors; Countermeasures; Legal regulation

Introduction

New computer technologies have radically changed the approach to creativity and its perception. They play an important role in the creation of musical, architectural, scientific works, etc. However, if until recently such technologies were perceived only as an auxiliary tool for the artist to create his work, then in the 20th century. made its corrections, putting Artificial Intelligence on a par with artists. This gave rise to numerous discussions, and the legal systems of the countries of the world were not ready to recognize Artificial Intelligence as equal to a natural person-creator.

According to analytical sources, it is determined that in 2023 the global market of Artificial Intelligence technologies is estimated at 207.9 billion dollars. USA, and according to the forecast, by 2030 it will grow more than 9 times and will amount to 1 trillion 848 billion dollars. USA. Asia Pacific will be the fastest growing segment of the global Artificial Intelligence technology market over the next 10 years. In 2022, the greatest weight among the

regions of the world in the prism of segmentation of the global technology market. Artificial Intelligence occupies the North American region-with an indicator of 36.84%. Next comes the European region-25.97%; Asia-Pacific region-23.93%; Latin America, the Middle East and Africa (LAMEA) ranks last with 14.26%.

At a time when technology and social trends are progressive, the legislation remains conservative, and in some cases, making changes to it contradicts its foundations and basic principles, and therefore there is an imbalance between new aspects of objective reality and current legal acts. The exponential development of technologies associated with Artificial Intelligence requires a quick and conscious reaction from the world community in order to create an appropriate legislative field. The modern legal framework aimed at regulating Artificial Intelligence in various parts of the world, including Ukraine, is in its infancy [1].

A breakthrough step in the issue of legal regulation of Artificial Intelligence and its functionality was the adoption of the world's first law on Artificial Intelligence, adopted by the European Parliament on March 13, 2024. The subject of which is to ensure a high level of protection of health, safety and fundamental rights enshrined in the Charter, which includes democracy, rule of law and environmental protection. In particular, this law prohibits emotion recognition in educational and professional environments, social scoring, forecasting and manipulation of human behavior or vulnerabilities using Artificial Intelligence [2]. Despite this, in contrast to Ukraine, neither these nor other EU legislative acts define the issue of choosing a model of legal regulation of objects created with the help of Artificial Intelligence [3].

G. Hallevy's "When Robots Kill: Artificial Intelligence under criminal (When Robots Kill: Artificial Intelligence under criminal), the researcher focuses on assessing the responsibility of robots, machines, and software with varying degrees of autonomy, and his theory is that aspects of the responsibility of the manufacturer, programmer, user, and all other parties involved cover [4].

O. Turuta, O. Zhidkova and O. Turuta, researching the issue of regulatory regulation of Artificial Intelligence in Europe, emphasize that "...in Europe, the Artificial Intelligence industry is developed, and the EU countries continue to emphasize the importance of joining forces and creating of the single "European AI Alliance" (European AI Alliance) [5].

The purpose of the scientific research is to study the problems in the system of legal regulation of Artificial Intelligence in foreign countries, in particular when applying court decisions. In view of the set goal, the task of the research is determined: To investigate the modern norms of legal regulation of Artificial Intelligence in the context of the leading countries of the world (for example, the EU, the USA, Japan, China, etc.); identify gaps in the modern system of legal regulation of Artificial Intelligence; develop recommendations for improving the above-

mentioned regulatory apparatus.

Methods

With the help of analytical methods, the available data, scientific sources of information on the use of Artificial Intelligence in combating offenses in the field of illegal drug trafficking. The most common applications that are created on the basis of Artificial Intelligence in combating offenses in the field of illegal drug trafficking and can be used in the process of exercising a person's right to access the court and in the process of preparing a judge to administer justice.

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Gemini (formerly Google Bard) is a conversational generative Artificial Intelligence chatbot developed by Google that was initially based on the LaMDA family of large language models and later on PaLM. It was developed as a direct response to the growing popularity of ChatGPT.

Logical-semantic methods used in the article to reveal the essence of Artificial Intelligence in foreign countries, features of its application in courts. The comparative legal method made it possible to compare the legislation of foreign countries in the article, including the evaluation of regulatory legal acts.

Results and Discussion

The London summit on the security of Artificial Intelligence became a platform for the discussion and signing of the Bletchley Declaration by the participating countries. This document called for guaranteeing respect for human rights, data protection, ethics and safety in the development of Artificial Intelligence, and also emphasized the importance of human control over these systems [6].

He also drew attention to the need to develop strategies that would prevent the use of Artificial Intelligence for harmful purposes.

Despite the awareness of the potential challenges associated with the risks of Artificial Intelligence, as well as the understanding of the need for global regulation, given the global nature of such challenges, the key actors-the European Union and the United States-admit that they cannot yet find the same approaches to regulate the use of Artificial Intelligence [7].

This was discussed during an expert discussion of this problem on July 6, 2023 at Stanford University as part of Stanford HAI (Stanford University Human-Centered Artificial Intelligence). The USA and the EU, for which digital technologies make up 10% and 5%-6% of GDP, respectively, have different views on the regulatory

regulation of Artificial Intelligence, which is why, today, one gets the impression that the field of Artificial Intelligence regulation can develop by analogy with defense of personal data: Similar to how GDPR was introduced in the European Union, while in the United States each state has its own rules in this area. To this day, this trend has not changed.

Along with the above, in June 2022, the Canadian government presented its draft Artificial Intelligence and Data Act (AIDA), which, according to the developers, aims to establish a harmonious balance in the regulation of Artificial Intelligence. AIDA aims to promote innovation and expand access to international markets for Canadian companies that have a significant share of the global market for Artificial Intelligence systems. However, the draft law met with significant criticism from human rights defenders. In particular, there are significant concerns that the Canadian government has prioritized the economic and commercial aspects of Artificial Intelligence while drafting the bill and has not paid enough attention to the protection of human rights. Considering the harsh criticism, one gets the impression that the developers of the draft law will have to take into account the point of view of the opponents.

At the same time, the European Union seeks to become a leader in the regulation of Artificial Intelligence, which is why it is developing a draft law "On Artificial Intelligence". This act is expected to implement the world's first comprehensive legislative framework for the regulation of Artificial Intelligence. In this regard, it should be noted that in February 2020 the European Commission published a White Paper on Artificial Intelligence: A European Approach to Excellence and Trust (White Paper on Artificial Intelligence—A European approach to excellence and trust), which proposes numerous measures and policy options for the future EU regulatory framework for Artificial Intelligence. The commission also prepared a report on the security and liability implications of Artificial Intelligence, the Internet of Things, and robotics [8].

Also, in the European Union, great attention is paid to data protection and confidentiality. In May 2018, the General Data Protection Regulation (GDPR) entered into force—a large-scale regulation designed to strengthen and unify data protection for all individuals in the EU. It extends the scope of the EU data protection law to all foreign companies that process data of EU residents. Thus, all interested parties in the field of Artificial Intelligence must strictly adhere to the General Data Protection Regulation (GDPR), which is considered the strictest privacy and security law in Europe and the world. This regulation is an important step towards strengthening basic rights in the era of digital technologies (protection of individuals in relation to the processing of personal data) and simplifying doing business due to the unification of rules for companies and government bodies in a single digital market (Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC).

It is worth emphasizing that the European Commission

identified the development of national strategies for the development of Artificial Intelligence as one of the main tasks and obliged the governments of the EU member states to support the implementation of the "Coordinated Plan on Artificial Intelligence in combating offenses in the field of illegal drug trafficking", which was joined by several other countries that are not EU members. (Switzerland, Norway). For the first time, the Report on the review of national strategies on Artificial Intelligence among EU countries was published in February 2020. It is an updated overview of national strategies for Artificial Intelligence among EU member states, Norway and Switzerland [9]. So, in June 2022, 20 EU member states published national strategies for the development of Artificial Intelligence, while 7 other countries (Austria, Belgium, Greece, Ireland, Italy, Romania, Croatia) were at the final stage of their development (Table 1).

Table 1: Implementation of National Artificial Intelligence in combating offenses in the field of illegal drug trafficking strategies in foreign countries

Country	The status of adoption and development of Artificial Intelligence strategy	Date
Austria	In the process of development	
Belgium	In the process of development	
Bulgaria	Published	December 2020
Croatia	In the process of development	
Cyprus	Published	January 2020
Czech Republic	Published	May 2019
Denmark	Published	March 2019
Estonia	Published	July 2019
Finland	Published	October 2022
Germany	Published	December 2021
Greece	In the process of development	
Hungary	Published	September 2020
Lithuania	Published	March 2019
Italy	In the process of development	
Latvia	Published	February 2020
Ireland	In the process of development	
Luxembourg	Published	May 2019
Malta	Published	October 2021
Netherlands	Published	October 2019
Poland	Published	December 2022
Romania	In the process of development	
Portugal	Published	June 2019
Slovakia	Published	July 2019
Slovenia	Published	May 2021
Spain	Published	December 2020
Sweden	Published	May 2018

Let us add that the OECD report "National strategies on Artificial Intelligence, a European perspective" examines specifically national strategies among EU member states for the development of Artificial Intelligence and provides an overview of national political initiatives in the following directions: Human capital, "from the laboratory to the

market”, network interaction, regulation, infrastructure [10].

We must take into account that in the national strategies of the EU countries much attention is paid to the problem of safe and controlled development of Artificial Intelligence technologies, because the use of certain subtypes of Artificial Intelligence technologies violates ethical and legal norms, which unprecedentedly demand the immediate development of a legislative framework for the safe impact of advanced technologies on various aspects of the existence of modern humanity and compliance with ethical norms [11]. In the European legal circle, the issues of human rights, confidentiality, justice, transparency, risk lessness, algorithmic bias from the use of Artificial Intelligence technologies are raised. Solving ethical problems, from the point of view of legal regulation of Artificial Intelligence technologies among EU countries, differs from other governmental strategic approaches and the level of focus on their development and implementation [12].

Foreign experience of using Artificial Intelligence in combating offenses in the field of illegal drug trafficking

Artificial Intelligence systems are increasingly being used in litigation and courtrooms in jurisdictions around the world, from Australia, Brazil, China, Estonia, Mexico, United Kingdom, United States. The UK experience with the Artificial Intelligence system HART-Harm Assessment Risk Tool (“HART”) is of interest for analyzing the risks and potential for the use of Artificial Intelligence in combating offenses in the field of illegal drug trafficking. HART is designed to assist in the assessment of potential harm and risks associated with individual’s risk assessment tool [8]. This machine learning-based technology used the Durham Police Department archives from 2008 to 2012 to study decisions made by police officers during that period. Machine learning is expected to assess risk based on about 30 factors, some of which (such as zip code and gender) are unrelated to crime. Suspect risk is categorized as low, medium, or high; tests conducted in early 2013 showed that HART predictions were 98% valid for low risk and 88% valid for high risk recidivism prediction. During this experimental phase, the HART system will have purely advisory value to the referee; the operation of HART and the reliability of its results will be regularly audited by the police [13].

In July 2022, China also published draft rules for the regulation of generative Artificial Intelligence services in combating offenses in the field of illegal drug trafficking for the first time, which became one of the first cases of comprehensive regulation in this field at the national level. The updated rules entered into force on August 15, 2022 and are developed on the basis of current laws on cyber security, data security and personal data protection. According to the new rules, all AI service providers offering text, image, audio, and video generation services must undergo a security assessment and obtain administrative permissions if required by law. At the same time, Artificial Intelligence tools must adhere to socialist values and

ensure the protection of users’ rights, as well as prevent possible abuse and dependence on Artificial Intelligence in combating offenses in the field of illegal drug trafficking. At the same time, China aims to become a world leader in the field of Artificial Intelligence by 2030, planning the active use of Artificial Intelligence in the military sphere and the development of “smart cities”. To achieve this goal, Chinese companies, including such big players as AI and Huawei, are making investments in US and European technology firms, opening research centers in Silicon Valley and investing in startups [14].

These actions raise concerns in the US because of the risk of leakage of sensitive technology and the possible loss of technological leadership. In response, Washington has recently tightened controls on Chinese investments in American technology, particularly in the field of Artificial Intelligence in combating offenses in the field of illegal drug trafficking [15].

Japan is also actively moving towards innovation, especially in the field of Artificial Intelligence in combating offenses in the field of illegal drug trafficking, trying to find an optimal balance between promoting technological development and protecting the rights and interests of its citizens. In recent years, the country has demonstrated an open and progressive approach to the regulation of Artificial Intelligence, in particular in matters related to copyright, seeking to decide how to liberally approach the use of available data for training Artificial Intelligence models without violating existing applicable legislation. Japan’s decision not to treat the use of publicly available data for training Artificial Intelligence in combating offenses in the field of illegal drug trafficking as a violation of copyright opens wide opportunities for the development of the latest technologies and innovations, reducing obstacles for researchers and developers in this field. This, undoubtedly, can contribute to the strengthening of Japan’s position in the world market of high technologies, especially in the conditions of growing demand for microcircuits and computing systems [11].

Such a policy causes mixed reactions, especially from representatives of the creative professions and the intellectual in combating offenses in the field of illegal drug trafficking property industry, who express concern about possible copyright violations due to the use of their works without proper licensing. At the same time, there is an argument that Artificial Intelligence is capable of creating unique content that can potentially bypass the traditional framework of copyright [16].

The step taken by Japan could have a significant impact on international regulation in this area, paving the way for new standards for the use of data for Artificial Intelligence in combating offenses in the field of illegal drug trafficking and promoting international exchange of experience and unification of rules [17].

The use of Artificial Intelligence tools in the judicial decision-making process also raises ethical issues related to

the delegation of authority to algorithms. If not particularly carefully monitored and regulated, reliance solely on algorithmic approaches could violate human rights and foster discriminatory practices [17].

In May 2016, a report was published in the United States of America, according to which Artificial Intelligence was accused of racism. Thus, the computer program used by the American court to assess the risk was biased against African Americans (in the original it is used-black prisoners). The Corrections Offender Profiling Alternative Sanctions Program (COMPAS) was more likely to mislabel African-American defendants (originally used as black defendants) as potential repeat offenders, mislabeling them nearly twice as often more than white people (45% to 24%), according to ProPublica investigative journalism. This was also noted in the Dec. 3-4, 2018 Code of Ethics for the Use of Artificial Intelligence in the Judiciary and its Environment, where it was noted that ProPublica found discrimination in the algorithm used in the COMPAS software, which aims to assess the risk of recidivism, when the judge must determine the sentence individually.

Criticism of the COMPAS system is a criticism of commercial algorithms for assessing the risks of recidivism and evaluating the work of Artificial Intelligence in court. But the main thing is that the COMPAS system is used specifically in criminal proceedings, it simplifies the work of judges in making procedural decisions and increases the efficiency of the court [18].

Negative experiences of Artificial Intelligence in court will be used to correct mistakes in the future. An excerpt from the Wisconsin Supreme Court decision in *Wisconsin v. Loomis* states: It's important to consider tools like COMPAS to keep changing and evolving. Problems with which we are addressing today, may very well be changed in the future, better tools may be developed. As data changes, our use of evidence-based tools must also change. The justice system must keep pace with research and constantly evaluate the use of these tools [19].

In Brazil, at least 47 courts are using or developing AI programs or systems [20]. The Brazilian Federal Supreme Court uses software to automate appeals, providing unlimited precedents and potential courses of action when dealing with legal challenges. Similarly, the Minas Gerais State Court of Justice uses software that can identify and categorize legal resources related to the same issue or subject to applicable precedent [21].

Saudi Arabia (March 2022) introduced a virtual enforcement court that operates without human intervention, reportedly simplifying the previously 12-step judicial process to 2 steps [22]. In the United Arab Emirates, Abu Dhabi's judicial branch introduced the "Smart Court" initiative in August 2022 to increase the level of court rulings and speed up judicial procedures through the use of Artificial Intelligence [23].

An interesting case was considered by the Court of Appeal of Singapore (*Quoine Pte Ltd v. B2C2 Ltd*) between

a cryptocurrency exchange and a trader regarding the possibility of challenging a smart contract concluded by computer algorithms [24].

The Singapore Court of Appeal held that in cases where contracts are concluded by means of deterministic algorithms, any analysis relating to knowledge of the error must be made by reference to the state of mind of the programmers of the algorithms at the time of programming.

Lord Mance dissented from the majority's position and delivered a dissenting opinion. In particular, he pointed out that "do ordinary legal principles apply, or do they perhaps need to be adapted when traders turn their affairs over to algorithmic computers? The computers in question were "deterministic," meaning they operated according to predetermined algorithmic programs set by humans. So it refers to the rules that apply when machines are mechanically compressed by reference to their input, and the input is mistakenly interrupted, so that the result is fundamentally distorted". "The key question is whether the error should be applied in such a way as to disregard circumstances ordinarily relevant to its application, simply because the parties have entrusted their operations to computers that cannot have consciousness. The law must be adapted to the new world of algorithmic programs and Artificial Intelligence so as to produce the results that reason and justice would expect. There are certainly risks involved in the introduction of computers, but I don't think they include the risk of being bound by an algorithmic contract that anyone who learns about it can immediately see can only be the result of some fundamental error. Computers are domestic workers, not masters, to whose operations the parties may be presumed to have unconditionally obeyed under such unusual circumstances".

Experience of Ukraine in the use of artificial intelligence in combating offenses in the field of illegal drug trafficking

In Ukraine, according to the decree of the Cabinet of Ministers of Ukraine, the Concept of the Development of Artificial Intelligence was approved, which defines the strategic directions of the development of this industry in the country [25].

Implementation of the Concept is foreseen for the period until 2030. In view of the war, these terms may be adjusted. In the same context, on October 7, 2023, the Ministry of Digital Transformation of Ukraine presented a roadmap for the regulation of Artificial Intelligence in Ukraine [26]. The road map involves 2 stages: The first, which is expected to last 2 years-3 years (2023-2025), will give businesses an opportunity to prepare for regulation; on the second- the regulatory process will begin, which provides for the implementation of the EU law on Artificial Intelligence (AI ASI) and the development of a national law taking into account the experience gained at the first stage [27].

At the heart of the implementation of the regulation of Artificial Intelligence is a simple approach, which involves moving from less to more: First we will provide business with the tools to prepare for future requirements, and then

the law will be passed. The approach takes into account the interests of all key stakeholders and makes it possible to find a balance between business interests and protection of citizens' rights [28].

In the decision of the Commercial Court of Cassation as part of the Supreme Court dated February 8, 2024 in case No. 925/200/22, it is stated that the applicant cites the provisions of Art. 509, 510, 526 of the Civil Code of Ukraine, as well as the content of the concept of "voluntary commitment" provided by ChatGPT Artificial Intelligence in combating offenses in the field of illegal drug trafficking [29]. The complainant points out that ChatGPT's Artificial Intelligence identified this legal construction as an obligation (in the theoretical sense), which the parties reached voluntarily (by their own will), without interfering with the meaning of the concept. Therefore, according to the applicant, taking into account the theoretical definition of the concept of "obligation", the concept of "voluntary obligation" used by the court is subject to clarification—the definition of the subjects, object and content of such a concept and the definition of its difference from the theoretical definition of "obligation" (subject, object, content of this concept). That is, the applicant is actually asking the Supreme Court to deny or confirm what the ChatGPT Artificial Intelligence generated from the outlined question, which is not recognized as a source of reliable, scientifically proven information, contrary to the conclusions made by the court in the court decision. In this way, the applicant questioned the judicial discretion and judicial interpretation of this issue in the decision, which acquired the status of final, which disregarded the authority of the judiciary [30]. In the separate opinion of the judge of the Commercial Court of Cassation as part of the Supreme Court in this case, it is stated that the current commercial procedural legislation does not prohibit the use of Artificial Intelligence technologies in combating offenses in the field of illegal drug trafficking. In addition, in judicial practice there is no established approach and clear criteria according to which the use of Artificial Intelligence in combating offenses in the field of illegal drug trafficking by participants in the judicial process can be recognized as an abuse of procedural rights [31-33].

Conclusion

Scholars and legal practitioners continue to debate the legal status and liability of Artificial Intelligence in combating offenses in the field of illegal drug trafficking. There are proposals regarding possible directions for the development of legal regulation of Artificial Intelligence in combating offenses in the field of illegal drug trafficking, including the adaptation of existing civil liability mechanisms and the development of new approaches that would take into account the unique features of Artificial Intelligence technologies.

The main steps of analyzing court decisions based on machine learning algorithms include the following stages:

1. Data collection and preparation: In this stage, court decisions and relevant metadata are collected. This data can be taken from various sources, such as court archives, databases or legal portals. The data is then subjected to pre-processing such as cleaning, normalization and transformation to a format understandable for further analysis.
2. Selection of machine learning models: At this stage, appropriate machine learning models are selected for the analysis of court decisions. These can be classification, clustering, regression and other algorithms. The choice of model depends on the task and requirements for data analysis.
3. Training models: In this stage, machine learning models are trained on prepared data. They analyze the characteristics of court decisions and learn to identify patterns, connections and structure of data.
4. Feature analysis: After training the models, the judgments are analyzed to extract useful features or characteristics that can be used for further analysis. These can be such signs as types of cases, resolved issues, decisions of judges, judicial practice, reasons for decisions and many others.
5. Identifying patterns and precedents: By applying machine learning models, patterns, trends, and precedents in court decisions can be identified. For example, it is possible to discover which factors or arguments have the greatest influence on decision-making, which decisions are similar in circumstances, or which legal standards are most often applied.
6. Decision prediction: Based on the collected data and analysis, machine learning models can be used to predict future court decisions. For example, it is possible to predict the results of certain types of cases or predict the probability of success of an appeal.
7. Legal resolution and consultation: Analysis of court decisions based on machine learning algorithms can be used for legal resolution and consultation. It can be useful for lawyers, advocates and judges in the process of preparing a case, identifying grounds for an appeal or providing advisory support.

A survey of existing Artificial Intelligence systems used in the judiciary in various countries revealed their characteristics and potential advantages for improving the quality of court decisions. Information about these systems helped us understand how their use could contribute to judicial objectivity and efficiency.

The analysis of the useful tools and benefits of Artificial Intelligence for evaluating evidence and motivating court decisions highlights the potential for using these technologies in criminal justice. In particular, these technologies can help predict risks and develop effective strategies to address these risks.

Conflict of Interest

The authors declare that they have no conflict of interest.

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