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ALGORITHMIC DECISION-MAKING IN MISDEMEANOR MATTERS

Abstract: The digital transformation of the judiciary represents one of the most significant challenges facing contemporary legal systems. The development of artificial intelligence and algorithmic systems has enabled the implementation of innovative technological solutions in various aspects of judicial activity, including case management, legal analytics, risk assessment, and decision-support mechanisms. Given the specific characteristics of misdemeanor matters, which are marked by a high volume of cases, standardized factual situations, and the need for efficient adjudication, the question arises as to the extent to which algorithmic systems may be integrated into the decision-making process.

The subject of this paper is the analysis of the possibilities of applying algorithmic decision-making in misdemeanor matters, with particular emphasis on its relationship with fundamental procedural principles and fair trial guarantees. Using normative, comparative, and axiological methods, the paper examines existing legal frameworks and comparative experiences concerning the use of algorithms and artificial intelligence in judicial proceedings, as well as the potential for their application within the field of misdemeanor law.

Special attention is devoted to the preservation of the principles of legality, individualization of sanctions, the right to defense, transparency of

decision-making, and accountability for judicial decisions. The paper proceeds from the premise does the algorithmic systems may significantly contribute to the efficiency and consistency of adjudication in misdemeanor matters. However, should it remain supportive rather than determinative, since decisions concerning liability and sanctions necessarily involve value judgments that cannot be fully delegated to automated systems.

Keywords: *algorithmic decision-making, artificial intelligence, misdemeanor law, digitalization of justice, fair trial*

Introductory considerations

Digitization of the judiciary represents one of the key directions in the development of modern legal systems, aimed at increasing the efficiency, transparency and availability of judicial protection. The application of technologies in the work of courts and other judicial bodies is no longer a matter of technological progress, but an integral part of judicial reform and the realization of the rule of law. Digital transformation encompasses a wide range of activities, from electronic case management and electronic communication with parties, through the digitization of court records and electronic delivery, to the development of systems that use artificial intelligence to support decision-making. (Vlada Republike Srbije, 2026)

Digitization of the judiciary in the Republic of Serbia represents to a certain extent a rather complex process that is certainly multi-layered, and which has led to a partial transformation of the traditional court procedure into an electronic form, whereby the functionality and availability of digital tools differ depending on the procedural role of the participants and the nature of the procedure itself.

The central place in this system is occupied by the eSud application, developed under the supervision of the Ministry of Justice of the Republic of Serbia, which enables the entire electronic management of the proceedings, including the filing of lawsuits, appeals and other submissions signed with a qualified electronic certificate, as well as the electronic payment of fees.(eSud, 2026) However, the full application of this system in practice has primarily come to life before the Administrative Court and remains dominantly reserved for professional attorneys and legal entities that meet high technical and administrative prerequisites, while in civil and criminal matters before courts of general jurisdiction, the traditional, physical modality of written submission still prevails. On the other hand, for a wider circle of citizens and the general public, the most accessible

segment of digital justice is realized through the Portal of the Courts of Serbia, which provides transparency and insight into publicly available data on the progress of cases, hearing dates and court actions undertaken in real time based on the number of cases. It is necessary to point out that there is in fact to a certain extent the integration of the judicial system with the state portal eAdministration (eUprava, 2026) which enabled the introduction of the institute of electronic delivery via eInbox for registered eCitizens, where downloading court documents produces identical legal effects as personal delivery in physical form, which, along with the platform for ePayment of fees, gradually completes the legal framework of electronic communication between judicial authorities and citizens. (Portal pravosuđa Srbije, 2026)

For the Republic of Serbia, the process of digitization of the judiciary is of particular importance within the process of accession to the European Union, especially within the framework of Negotiating Chapter 23 - Judiciary and fundamental rights. (EU za Tebe - EU projekti u Srbiji, 2026)

This chapter represents one of the most significant negotiating chapters, since it includes the reform of the judiciary, the fight against corruption, the protection of fundamental rights and the strengthening of the efficiency of the judicial system. (Savremena politika, 2026)

In its annual reports, the European Commission continuously points to the need to improve the efficiency of courts, reduce the duration of proceedings, increase transparency and develop modern digital tools that will contribute to better functioning of the judiciary. (Eu pregovori, 2026) In this context, digitization is not seen as a goal in itself, but as an instrument for realizing the basic principles of the rule of law. (Samuilov, 2022, p.75) The introduction of electronic case management systems, the improvement of electronic communication between courts and other state bodies represent measures that contribute to greater efficiency, legal certainty and the availability of justice to citizens and the economy.

In addition to the indicated innovations in domestic justice, the development of digital justice is conditioned by the strategic decisions of the European Union. In recent years, the European Union has intensively developed the concept of digital justice through the adoption of strategic documents that encourage the application of digital technologies while preserving basic procedural rights, judicial independence and the right to a fair trial. The development of the regulatory framework for the application of artificial intelligence systems in the public sector, including the judiciary, is also of particular importance, which gives digital transformation a new dimension that goes beyond mere computerization of administrative processes. (Ministarstvo za evropske integracije, 2026)

Bearing in mind what has been stated so far, it can be unequivocally perceived that the issue of digitization of the judiciary today is no longer limited to the electronic functioning of courts, but also includes consideration of the possibility of using algorithmic systems and artificial intelligence in certain segments of judicial decision-making. This opens up numerous legal, ethical and procedural issues, especially in procedures characterized by a large number of cases and a high degree of standardization, among which misdemeanor cases stand out.

The Concept of algorithmic decision making

The development of modern AI technologies has led to the ever-widening application of algorithms in decision-making processes. Let's emphasize! Making decisions. In a survey conducted in the USA, about 48% of adults use AI tools on a daily basis, while even about 80% of those mentioned indicate that artificial intelligence directly affects their daily decisions - most often when choosing products to buy, planning trips, managing personal finances, as well as with other daily decisions. (Big News Network, 2026)

Decision-making in both the private and public sectors is becoming absolutely everyday. Algorithmic decision-making is particularly important in the field of public administration and justice, where digital systems are used to improve efficiency, consistency and speed of decision-making. (Knežević & Stanojević, 2022, p. 25) Although it is often equated with artificial intelligence in the professional literature, algorithmic decision-making is a broader term that includes various forms of automated decision-making or decision-making support, regardless of whether they are based on artificial intelligence systems or predefined rules. (European Commission, 2020)

According to the definition of the Council of Europe, Algorithmic Decision Making - ADM means any form of decision-making in which fully or partially automated systems are used, whereby systems based on artificial intelligence represent only a subset of algorithmic decision-making. In other words, every application of artificial intelligence in decision-making is a form of algorithmic decision-making, but every algorithmic system does not necessarily represent an artificial intelligence system. (Council of Europe, 2022)

Similarly, European legal regulation starts from the notion of automated decision-making. The General Data Protection Regulation - GDPR provides for the right of an individual not to be the subject of a decision based solely

on automated data processing if such a decision produces legal effects or similarly significantly affects his legal position. At the same time, the legislator allows certain exceptions, but with the mandatory existence of appropriate procedural guarantees, including the right to human intervention, the possibility of contesting the decision and the right to explain the decision-making procedure. (European Parliament & Council, 2016)

It is important to distinguish algorithmic decision making from artificial intelligence. Algorithmic decision-making is a broader concept that includes various forms of automated decision-making, while artificial intelligence systems represent only one of the possible forms of such systems. The European Union in the AI Act defines an artificial intelligence system as a machine system designed to function with different levels of autonomy and capable of generating, based on input data, results such as predictions, recommendations or decisions that can affect the physical or virtual environment. (European Parliament & Council, 2024)

There are different levels of algorithmic decision making. The lowest level includes systems that serve exclusively to support the decision maker through data search, analysis of court practice or statistical processing of information. At a higher level, there are systems that propose a possible outcome of the procedure, where the final decision is made by a human. The highest degree of automation represents fully automated decision-making, in which the system independently makes a decision without direct human involvement. It is this form that causes the biggest legal, ethical and social dilemmas, especially in areas where the rights, obligations and responsibilities of individuals are decided. (OECD, 2024)

If viewed from the perspective of the judiciary, then it is necessary to point out that algorithmic decision-making cannot be viewed exclusively as a technological issue. Its application directly affects the realization of basic procedural principles, including the right to a fair trial, independence of the judiciary, transparency of decision-making and responsibility for the decision made. For this reason, the European Commission for Judicial Efficiency (CEPEJ) emphasizes that the application of systems based on artificial intelligence in the judiciary must be based on respect for basic human rights, the principle of non-discrimination, data quality and security, transparency, impartiality and mandatory human control over the system. (European Commission for the Efficiency of Justice, 2018)

Models of application of algorithmic decision-making in the judiciary

Being aware that this is still a scientific and technological achievement, the application of algorithmic systems in the judiciary, where it is used to some extent, is neither unique nor uniform.

Essentially, the main difference is according to the degree of autonomy of the algorithm in the decision-making process. While some countries use algorithms exclusively as technical support for judges, others are experimenting with systems that can propose legal solutions or evaluate possible outcomes of court proceedings. Regardless of the different degree of their application, the common feature of modern justice systems is that algorithmic systems generally have an auxiliary, not a substitute, function in decision-making. (European Commission for the Efficiency of Justice, 2018)

In professional literature and international documents, three basic models of application of algorithmic decision-making in the judiciary can be distinguished. The first model represents systems for Decision Support Systems, the second includes the so-called Predictive Justice Systems, while the third involves Highly Automated Decision-Making Systems. (Bernardo & Hernández, 2025, p.9 & The ACLU of Washington, 2026)

The first model is based on the use of algorithms as a means of supporting the judge. In this case, the algorithm does not make a decision, but enables a quick analysis of a large number of court decisions, a search for relevant case law, classification of cases, identification of legal sources or organization of court work. It is the man who makes the decision, ie. the person retains full control over the procedure, while the algorithm has an exclusively auxiliary role. (Moses & Legg, 2026) This model is the dominant form of application of digital technologies in European judicial systems today. About 20 European Union member states use or are still developing this model based on which 125 tools are used. (European Commission for the Efficiency of Justice, 2026)

The second model is characterized by systems that, using statistical methods and machine learning techniques, analyze previous court decisions and generate predictions about the possible outcome of a specific procedure or recommendations regarding the choice of legal qualification, type or amount of sanction. These systems do not replace the judge, but serve as analytical support during decision-making. Their application exists in some countries and this so-called predictive analytics in the judiciary, and for this model the most common criticism refers to the transparency of the

algorithm, the possibility of checking its work and preventing discriminatory effects. (Gallese, 2026 & Brand, 2026).

The third model represents the highest level of automation. In this model, the algorithmic system independently makes decisions without direct human involvement or with minimal subsequent human control. Although this model is the subject of numerous scientific discussions, its application in judicial decision-making is still very limited. The reason for this lies in the fact that a court decision implies not only the application of legal rules, but also value assessment, interpretation of law, evaluation of evidence and individualization of punishment, but also the subjective feeling of the judge, which is still considered functions that require human reasoning. (Cordis, 2026 & Tang, 2026 & Szwajdler, 2026, p.11)

In principle, it could be indicated that the European institutions that deal with this issue proceed from the point of view that artificial intelligence systems can contribute to increasing the efficiency of the judiciary, but that they must not lead to the suppression of judicial independence or the reduction of procedural guarantees of the parties. Algorithmic systems must remain under constant and effective human control, and of course, although this should be taken for granted, they must be developed in accordance with the principles of respect for fundamental rights, transparency, non-discrimination, data security...

The above classification represents a suitable basis for comparative analysis. Although there are significant differences between countries in the scope and method of application of algorithmic systems in the judiciary, most modern solutions can be classified into one of the above models.

Comparative legal analysis of the application of algorithmic decision-making in the judiciary

Comparative legal analysis represents one of the most important research methods of modern legal institutes, especially in areas that are rapidly developing under the influence of technological innovations. Given that algorithmic decision-making in the judiciary has not yet reached a unified normative and practical model of application, the analysis of different legal systems allows us to see the advantages, limitations and directions of future development of this institute.

In the continuation of the research, consideration will be made of countries, ie legal systems against the specifics in the use and development of algorithmic decision-making in the judiciary.

The European Union will be analyzed as a regulatory model that, through the AI Act, the General Data Protection Regulation (GDPR) and documents of the European Commission and the Council of Europe, develops a normative framework for the application of artificial intelligence in the judiciary, based on the protection of fundamental rights and human control over algorithmic systems. China represents the most developed example of the practical application of digital technologies and artificial intelligence systems in the work of the courts through the concept of the so-called Smart Courts. The United States of America is important because of the development of predictive algorithmic systems that are used in certain segments of criminal justice, especially when assessing the risk of repeating criminal acts and individualizing sanctions. The experiences of the American judiciary are significant primarily due to the numerous court and academic discussions that opened the issues of transparency of algorithms, discrimination and protection of procedural rights of the parties. Estonia is a country that is considered one of the European leaders in the digitalization of public administration and justice. Although the application of algorithmic decision-making in the Estonian judiciary has not reached the scale characteristic of the Chinese model, the experiences of this country are an example of the gradual development of digital justice while maintaining a high level of legal certainty and institutional control.

The analysis of the mentioned legal systems allows us to see three different approaches to the development of algorithmic decision-making in the judiciary. The European model is based on normative regulation and protection of basic rights, the Chinese model on intensive technological application in the work of the courts, the American model on the development of predictive algorithms in decision-making, while the Estonian model is an example of the integration of digital technologies into the functioning of the judicial system. Precisely because of their mutual differences, the mentioned systems represent a suitable basis for a comparative analysis of the possibility of applying algorithmic decision-making in misdemeanor matters.

European Union

The European Union does not know a single model of algorithmic decision-making in the judiciary, nor is there a binding legal framework that would require the courts of member states to apply artificial intelligence systems in the process of making judicial decisions. On the contrary, the development of digital justice in the European Union is based on the gradual digitization of judicial systems while preserving basic procedural rights,

judicial independence and the right to a fair trial. (European Commission, 2020)

When it comes to algorithmic decision-making, the European Union starts from the assumption that artificial intelligence systems can represent a significant instrument for supporting the work of the courts, but not a substitute for judicial decision-making. This approach is particularly evident in the AI Act (Artificial Intelligence Act, 2024), which classifies judicial systems among high-risk AI systems. The reason for this approach lies in the fact that decisions made in court proceedings directly affect the rights and freedoms of citizens, which is why it is necessary to ensure a high degree of reliability, transparency and human supervision over the application of artificial intelligence systems. (European Commission, 2026)

The AI Act does not prohibit the use of artificial intelligence systems in the judiciary, but prescribes strict conditions for their application. In particular, issues related to risk management, sample data used for system training, technical documentation, transparency of system operation, record keeping of actions and processes, human supervision and a high level of cyber security are foreseen and regulated. In this way, the European Union strives to ensure a balance between technological development and the protection of the fundamental rights of individuals. (Stokes, 2026)

The General Data Protection Regulation (GDPR) is also of particular importance for algorithmic decision-making. Article 22 of this regulation guarantees the right of an individual not to be the subject of a decision based solely on automated data processing if such a decision produces legal effects or similarly significantly affects his legal position. (Stojčić, 2026) The mentioned provision represents one of the most important procedural guarantees against fully automated decision-making without appropriate human intervention.

It can be concluded that the European approach to algorithmic decision-making is characterized by an extremely cautious regulatory model based on the principle that algorithmic systems should improve the efficiency of court work, but must not take over the function of judges or replace human legal reasoning. This is precisely why the European model represents a reference framework for assessing the acceptability of applying algorithmic decision-making in other legal systems, including the misdemeanor law of the Republic of Serbia.

China

China represents one of the most significant examples of the application of digital technologies and artificial intelligence systems in the judiciary.

During the last decade, Chinese courts have intensively developed the concept of the so-called Smart Courts, whose main goal is to improve the efficiency of court proceedings, unify court practice and increase the availability of justice to citizens. (Supreme People's Court of the People's Republic of China, 2026)

The development of this concept is based on the application of information technologies in almost all stages of court proceedings. Algorithmic systems are used for electronic submission of submissions, case management, automatic classification of disputes, search of relevant case law, analysis of evidence and drafting of court decisions. In addition, systems have been developed that provide judges with recommendations regarding legal qualification and the possible outcome of the proceedings based on the analysis of a large number of previously resolved cases. (Shi, Sourdin & Li, 2026, p.5)

The Supreme People's Court of China has repeatedly emphasized that artificial intelligence systems have an auxiliary function and that their application cannot call into question the independent exercise of the judicial function. Therefore, algorithmic systems in the Chinese judiciary are primarily used as an instrument for increasing the efficiency of the courts, reducing the duration of proceedings and standardizing court practice, while decision-making is still reserved for a human judge. (Supreme People's Court of the People's Republic of China, 2026b)

The Chinese model confirms that even in the most developed digital justice systems, the concept of complete algorithmic decision-making without human control is not accepted. Precisely because of this, the Chinese experience represents a significant basis for considering the possibility of applying algorithmic systems in misdemeanor cases, which due to their characteristics are often counted among the most massive court proceedings.

United States of America

Unlike the European approach, which is primarily focused on the normative regulation of the application of artificial intelligence systems in the judiciary, the development of algorithmic systems in the United States of America took place primarily through the practice of certain federal states and the application of various commercial software solutions. Special attention of the professional public is focused on systems for risk assessment tools, which represent one of the most significant forms of algorithmic support for judicial decision-making.

The most famous among them is the COMPAS system (Correctional Offender Management Profiling for Alternative Sanctions), developed to assess the likelihood of reoffending. The system analyzes various data on the perpetrator and, based on statistical models, generates a risk assessment that can represent one of the elements that the court takes into account when deciding on setting bail, imposing a sanction or parole. It is important to emphasize that COMPAS does not make a court decision or replace a judge, but has an exclusively advisory function. (Engels, Linhardt & Schubert, 2025, p. 385)

The application of this system caused a lot of debate after the decision of the Supreme Court of the state of Wisconsin in the case of State v. Loomis from 2016. In this case, the defendant claimed that the use of algorithmic risk assessment violated his right to a fair trial, since the way the COMPAS system worked was not public due to the protection of the software manufacturer's trade secrets. However, the court took the position that the use of COMPAS is not unconstitutional, provided that the algorithmic assessment represents only one of the factors in the decision and that the final decision is made by the judge based on all the circumstances of the specific case. (State v. Loomis, 2016)

Contemporary American practice does not accept algorithmic decision-making as a substitute for the judicial function.

Estonia

Estonia stands out as one of the most developed digital countries in Europe. Thanks to the long-term development of electronic administration, the digital identity of citizens and information systems, conditions have been created for a high degree of digitization of the judiciary and other public services. (Peaks, 2026)

Special attention of the international public was attracted by information about the development of an artificial intelligence system for resolving small-value disputes (AI judges). Although automation has been established, it is still under human supervision. The digital transformation of the Estonian judiciary is primarily based on electronic case management, electronic communication between courts and parties, digital access to court records and wide application of information technologies in the organization of court work. The development of digital tools in the Estonian judiciary is aimed at providing support to judges and improving the efficiency of court work, while preserving human control over decision-making. (Fabri, 2024, p.13)

The experience of Estonia confirms that a high degree of digitization of the judiciary does not necessarily imply a high degree of automation of judicial decision-making. The Estonian model shows that the application of modern information technologies can be successfully developed while simultaneously preserving the traditional principles of exercising judicial power.

Perspectives of algorithmic decision-making in misdemeanor proceedings in the Republic of Serbia

One of the characteristics of misdemeanor legislation in the Republic of Serbia is that there are a large number of cases pending during the year. Also another characteristic is that there are relatively standardized factual situations in certain types of misdemeanors, which often raises the question of the need for efficient and economical handling, making this area particularly suitable for the application of modern information technologies. Precisely because of this, the issue of algorithmic decision-making in misdemeanor matters takes on special importance in the process of digital transformation of the judiciary. The effectiveness of the procedure and the system of prevention through punishment, that is, through the implementation of the penal policy, is made possible to a significant extent through the institution of the misdemeanor order as well as the agreement on the recognition of the misdemeanor.

Unlike criminal proceedings (Duzlevski, 2026), in which decisions are made on the most serious violations of social values and the most severe criminal sanctions are imposed, a significant part of misdemeanor proceedings refer to situations in which decisions are made on the basis of objectively ascertainable facts, especially when it comes to traffic safety offenses recorded by automatic devices for controlling the speed of vehicle movement, passing through an intersection during the duration of a red light, improper use of traffic lanes, illegal use of a mobile phone... In these cases, a large part of the factual situation is determined by the application of technical means, with minimal influence of the human factor. (Pravilnik o načinu vršenja kontrole i neposrednog regulisanja saobraćaja na putevima, 2024)

Modern video-surveillance systems are no longer just devices for recording events, but use algorithms for automatic recognition of vehicle license plates (Automatic Number Plate Recognition - ANPR), identification of time and place of violation, connection to appropriate registers and generation of electronic records of the event. Such systems

enable quick and reliable recording of a large number of violations without the immediate presence of an authorized official at the scene. (Mobility & Transport - Road Safety, 2026)

It is necessary to distinguish between algorithmic detection of violations, algorithmic data processing and algorithmic decision-making. The fact that the violation was registered by an automatic device or that certain information was generated using an algorithm does not mean that the decision on the existence of responsibility was made by algorithm. On the contrary, the algorithmic systems that are used today in the Republic of Serbia primarily have the function of recording events, processing data and providing support to competent authorities, while the decision on responsibility and imposition of sanctions is still made by the authorized authority in accordance with the law.

Limits of application of algorithmic systems in misdemeanor proceedings in the Republic of Serbia

Analysis of modern comparative law solutions shows that algorithmic systems can significantly contribute to the improvement of the efficiency of misdemeanor proceedings, but at the same time indicates that there are clear limits to their application. These limits are not primarily technological, but of a legal nature and arise from the basic principles of the misdemeanor procedure and the right to a fair trial.

The greatest potential for automation exists in the stages that involve the processing of a large number of standardized data. This primarily refers to the reception and registration of cases, automatic distribution of cases according to predetermined rules, electronic communication with the participants of the procedure, search of court practice, analysis of relevant regulations, preparation of statistical reports and generation of drafts of individual procedural acts. In the mentioned cases, the algorithmic systems do not perform a legal assessment of the specific case, but perform technical and organizational tasks that can contribute to greater efficiency of the courts.

A significantly more complex issue is the application of algorithms in the phase of determining the factual situation. In certain types of violations, especially in the area of traffic safety, algorithmic systems already participate in the recording of events using radar devices, video surveillance and systems for automatic recognition of vehicle registration plates (ANPR). Such systems can with a high degree of reliability register exceeding the speed limit, passing through an intersection during the

duration of a red light or moving a vehicle in a prohibited traffic lane, using a mobile phone, not using a seat belt... However, even in these cases, the algorithm does not determine the existence of misdemeanor liability, but provides evidence that is the basis for further proceedings.

The principle of free evaluation of evidence implies that the judge evaluates each piece of evidence individually and in relation to other presented evidence, whereby he makes a decision based on his conviction formed after a conscientious and careful assessment of all the circumstances of the specific case. Such an assessment cannot be reduced to the application of pre-defined mathematical or statistical models, since it often requires an assessment of the credibility of statements, mutual compatibility of evidence and other circumstances that are not amenable to complete formalization.

Also, the choice of the type and amount of the sanction is not the result of the mechanical application of legal provisions, but requires the evaluation of numerous circumstances of the specific case, including the severity of the offense, the degree of responsibility of the perpetrator, previous behavior, personal and property circumstances, as well as the existence of mitigating and aggravating circumstances. Precisely because of this, algorithmic systems can eventually offer a recommendation based on the analysis of previous court practice, but they cannot take over the function of a judge in the process of individualizing the misdemeanor sanction.

Based on the presented analysis, it can be concluded that algorithmic systems have significant potential for improving the efficiency of misdemeanor proceedings, but primarily in areas related to data collection and processing, case management and providing professional support to judges. In contrast, deciding on the existence of misdemeanor liability, evaluation of evidence and individualization of the sanction remain in the domain of human legal reasoning. This is precisely the basic limit of the application of algorithmic systems in misdemeanor proceedings.

Model of application of algorithmic systems in misdemeanor proceedings of the Republic of Serbia

Starting from comparative legal experiences and the valid normative framework of the Republic of Serbia, it can be concluded that the development of algorithmic systems in misdemeanor proceedings can be based on the principle of gradual and controlled application, with a clear demarcation of tasks that can be automated from those that must remain in the exclusive jurisdiction of the judge.

The greatest potential for the application of algorithmic systems exists in the administrative and organizational segments of the procedure, such as receipt and recording of cases, automatic distribution of cases, electronic delivery of documents, management of the court calendar, search of court practice and analysis of relevant regulations. In these areas, algorithmic systems can significantly contribute to the efficiency of the work of misdemeanor courts without encroaching on the exercise of judicial function.

At a higher level of development, it is possible to envisage the implementation of a system that would provide the judge with professional support through the analysis of previous court practice, identification of similar cases, drafting of decisions or proposing a range of sanctions based on legally prescribed criteria. However, such systems would have to have an exclusively advisory character, whereby the judge would retain full authority to accept or reject the recommendation of the algorithm and base his decision on the circumstances of the specific case.

Determining misdemeanor responsibility, evaluation of presented evidence, evaluation of testimony of participants in the procedure and individualization of misdemeanor sanctions represent actions that, due to their legal nature and importance for exercising the right to a fair trial, must remain in the exclusive jurisdiction of the judge. This is exactly the limit of acceptable application of algorithmic systems in the misdemeanor procedure of the Republic of Serbia. The future development of digital justice should therefore be directed towards the development of algorithmic systems that will represent reliable support for judicial decision-making, and not its replacement.

Concluding remarks

The digital transformation of the judiciary represents one of the most significant directions of development of modern legal systems. The development of algorithmic systems and artificial intelligence has opened up new opportunities for improving the efficiency of court proceedings, more rational management of cases and standardization of court practice. At the same time, the application of these technologies raises numerous legal and ethical questions, especially when it comes to exercising basic procedural rights and preserving the independence of the judiciary.

Comparative analysis showed that the European Union is developing a regulatory framework based on the protection of fundamental rights and human supervision of artificial intelligence systems, China is applying

advanced algorithmic systems to support the work of the courts, the United States of America is using algorithmic models for risk assessment and decision support, while Estonia is an example of a high degree of digitization of the judiciary while maintaining the decisive role of the judge. The common feature of all analyzed models is that algorithmic systems have an auxiliary, not a substitute, function in the exercise of judicial authority.

The research results confirm that the future development of digital justice in the Republic of Serbia should be based on a model in which algorithmic systems represent reliable support for the judge, and not a substitute for his decision-making. Such an approach enables the simultaneous improvement of the efficiency of the misdemeanor procedure and the preservation of the basic principles of legality, fair trial and legal certainty. In this sense, algorithmic systems should be understood as an instrument of judicial modernization, while the responsibility for making a decision must still remain in the hands of an independent and impartial judge.

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