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The Use of Artificial Intelligence in the Administration of Justice: Suggested Framework of Ethical Principles and Reasoning of Judges in the Use of Intelligent Systems

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Abstract

Artificial intelligence is already being used in the administration of Justice, with various applications assisting judges in resolving cases. In particular, in criminal Justice, these applications include predictive Justice and decision-making assistance through the assessment of facts, as well as the classification of criminals into risk groups. This article examines the current regulatory and ethical framework (AI Act, Council of Europe Convention on AI, CEPEJ Ethical Charter, UNESCO and OECD principles) and develops a regulatory approach to the use of AI systems by judges and prosecutors. The methodology is based on a doctrinal analysis of international, EU, and professional ethical literature, as well as on a synthesis of principles of judicial conduct (Bangalore Principles, Magna Carta of Judges). To strike a balance between the rules of governing system use and judicial ethics, the article proposes a consistent framework of ethical principles (legitimacy, transparency, accountability, integrity, human oversight, prohibition of discrimination) and introduces a practical "line of reasoning" with key questions that judges should consider before and during the use of intelligent tools (risks, bias, proportionality, understanding of the algorithm, and impact on judicial judgment). The article concludes that AI may improve the efficiency of the justice system only when included inside a strong ethical framework and specialized training, guaranteeing that final judicial decisions remain solely human and fully aligned with the rule of law.

Keywords: artificial intelligence (AI); judicial ethics; human rights; human oversight; impartiality; algorithmic bias; transparency; judges

Academic Editor: Casey Watters

Received: 13 December 2025
Revised: 29 January 2026
Accepted: 4 February 2026
Published: 18 March 2026

1. Introduction

Artificial intelligence (hereinafter AI) has already appeared in court practice, gradually shaping a new norm that may influence the administration of Justice in the future, mainly by assisting judges in their decision-making process (JTC Resource Bulletin 2020). A large number of AI applications are already used in civil and administrative disputes at the extrajudicial level, such as electronic dispute resolution (Online Dispute Resolution), where machine learning algorithms suggest dispute settlements (Thompson 2015). More sophisticated systems with a direct application in the administration of Justice include China's digital courts. There, algorithms resolve intellectual property, e-commerce, consumer product liability, and certain administrative law disputes (Susskind 2019). In the

particularly sensitive area of criminal Justice, applications of AI that have appeared to date include: (a) applications that predict the likely outcome of a trial ('predictive justice'), (b) applications that assist judges in the decision-making process during preliminary and main proceedings, particularly in evidence assessment and sentencing, and (c) applications that classify criminals according to their level of danger and likelihood of reoffending (CEPEJ 2018; Myltseva 2019; Aletras et al. 2016; González 2020), as presented below. Thus, we need to clarify what AI is.

In this context, the EU AI Regulation has provided a general definition of such systems, describing them as "machine-based systems designed to operate with varying levels of autonomy, and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infer, from the input they receive, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments;" (Regulation 2024/1689, Article 3(1)). The use of such systems involves some risks; the Regulation defines these as "the combination of the likelihood of harm occurring and the severity of that harm" (Regulation 2024/1689, Article 3(2)). For this reason, the Regulation classifies systems according to the 'risk' into four categories: 'unacceptable risk', 'high risk', 'limited risk,' and 'minimum risk'. Based on this classification, AI systems are subject to different implementation requirements. It is important to note that the systems which are used specifically in the administration of Justice are classified as 'high risk' (Regulation 2024/1689, Articles 5 and 6)[1].

In judicial services, the main objective of using AI tools is to improve the speed, efficiency and quality of Justice (Chucha 2023). To ensure fair trials and shield the process from bias and discrimination resulting from the processing of sensitive data, the processing of court decisions by AI must be carried out carefully (Greenstein 2022). Therefore, the basic principles of transparency, impartiality and equality must be respected when developing judicial decisions (CEPEJ 2018). In this regard, judicial officials (judges and prosecutors) bear increased responsibility, as they should have judicial conduct, compatible with the Bangalore Principles (UNODC 2002) and other international and European institutional texts when performing their duties. Subsequently, the questions that arise with regard to the main aspects of the present article are: (1) Can the use of AI systems be compatible with these principles?; (2) how can judges adhere to them when using the systems in question?; and (3) what should their duties be during the use of the above systems?

This study adopts a legal dogmatic methodology combined with a legal analysis of the rules. More specifically, it examines international, EU, and national regulatory texts relating to AI (including the AI Act and the Council of Europe Convention on AI), as well as professional texts on judicial ethics applied by judicial authorities. The study recognizes the unique governance duties of judicial administrations as implementers of AI systems under the EU AI Act, yet it primarily concentrates on judges as users of AI in judicial settings, emphasizing ethical and normative standards that guide judicial reasoning over technical or organizational compliance frameworks. The analysis also synthesises the principles of judicial conduct, with the aim of developing an ethical framework and a structured line of legal reasoning for the use of AI systems in the administration of justice. To make these principles applicable in practice, the paper suggests a reasoning in the form of questions that judges can use when operating an AI system. This indicative reasoning is the result of a doctrinal and normative approach, and attempts to reconcile the fundamental issues raised by the use of algorithms in the administration of justice with the ethical principles to which every judge must adhere in the performance of their duties. In this sense, the proposed

[1] Noting that the classification of AI systems as high risk should not be extended to AI systems intended for auxiliary administrative activities, such as the anonymisation or pseudonymisation of judicial decisions, documents or data, communication between staff or administrative tasks (Regulation 2024/1689, Recital 61).

reasoning constitutes a toolkit to help achieve this goal. It also serves as a mechanism for their continuous education and familiarisation with the use of algorithms.

2. Purpose of the Proposed Ethical Framework for Judges

This article, as the sequel to the aforementioned Code of Conduct for legal professionals, proposes the establishment of a framework of ethical guiding principles and rationale for judges and prosecutors to respect when using AI systems in the administration of Justice. At the same time, it delineates their role and responsibilities when using such systems. It is imperative to recognise a significant distinction in this regard. It is evident that the role of judges is distinctly different from that of individuals who exercise administrative functions in the courts and from developers of AI. Judges, when issuing decisions, act as AI users and not as AI developers. Consequently, they do not choose which developers to work with. Furthermore, a distinct differentiation in the role played by court staff becomes evident. To illustrate this point, consider the digitisation of information provided alongside legal interpretation. The objective of this process is to enhance the accessibility of information for artificial intelligence systems, whilst concurrently conducting a continuous monitoring of the efficacy of these systems (Reiling 2020). This responsibility falls upon those who are engaged in administrative functions. This task is distinct from that of judges when they issue decisions with the assistance of systems. For instance, in this particular context, the Court of Justice of the European Union has established general ethical standards for its members and staff, which are distinct from one another (Court of Justice of the European Union 2021). The purpose of this article is therefore to describe ethical frameworks that focus exclusively on codes of judicial ethics, providing an important assistance to judges when they are called upon as users to use such a system, that is, exclusively in the exercise of their judicial functions. The article's originality lies in its approach to the ethical principles for the use of AI (Regulation 2024/1689; Council of Europe 2024; NCSC 2024; Illinois Supreme Court 2025). Rather than repeating these principles, it provides a detailed explanation of how they should be applied in the context of judicial duties. Additionally, it proposes a line of reasoning that judges can follow, to ensure the use of these systems is compatible with the established rules of judicial ethics. In other words, this article proposes tools that are useful for creating a Code of Conduct, specifically for judges, when using an AI e system in the adjudication of a civil, criminal, or administrative case. It should be noted that cases involving different branches of law present different risks in relation to the use of AI. The risks are greater in criminal Justice, where fundamental rights are at stake, and much smaller in civil and administrative Justice[2].

These guiding principles should be compatible with the fundamental principles of fairness, transparency, accountability, and impartiality, in addition with understandable and justifiable system operation (Council of Europe Parliamentary Assembly 2020) to ensure the ethical use of AI in the administration of Justice (Sourdin 2021). Furthermore, the use of such systems must always be conducted responsibly, with respect to fundamental rights (Bharati 2024). The proposed ethical principles aim to create a widely accepted framework that encourages judicial officials to integrate and use AI responsibly, while upholding the fundamental values of human rights as defined in international texts (Bharati 2024). This framework also aims to prevent an arbitrary and biased reliance on algorithms. But how can this be ensured?

By developing specific, practical guidelines for judges and prosecutors when using AI systems, describing the reasoning they should follow when confronted with the results of the systems. In other words, if AI systems model judicial reasoning, judges should model

[2] See below, Section 9.

their own reasoning to check the system's results (Ashley 2017). As a consequence, the following questions need to be answered: (1) What measures can the judges implement to ensure the transparency of an AI system?; (2) What are their obligations when they find possible bias in a system?; (3) Can the use of such systems be combined with the basic principles of judicial conduct?; (4) What steps must judges take to ascertain whether an AI system is functioning properly?

2.1. The Critical Legal Tools

Within this framework, the relevant legal instruments on which the proposed ethical principles are based include the following international and European texts:

A. General rules for the use of AI:
   1. Regulation 2024/1689 of the European Parliament and of the Council laying down harmonised rules on AI (Regulation 2024/1689);
   2. The Council of Europe Framework Convention on AI and Human Rights, Democracy and the Rule of Law (Council of Europe 2024);
   3. The Recommendation on the Ethics of AI, adopted by the UNESCO General Conference (UNESCO 2021);
   4. The European Charter of Ethics for the Use of AI in Judicial Systems and their Environment, by the European Commission for the Efficiency of Justice of the Council of Europe (CEPEJ 2018);
   5. The Ethical Guidelines for Reliable AI, by the European Commission High-Level Expert Group on Artificial Intelligence (2019);
   6. The Council Recommendation on AI, by the Organisation for Economic Co-operation and Development (OECD)—OECD/LEGAL/0449 (revised 2024);
   7. The Toolkit for Responsible Innovation in AI in Law Enforcement: Principles for Responsible AI Innovation in Law Enforcement, jointly published by the INTERPOL Innovation Centre and the United Nations Interregional Crime and Justice Research Institute (UNICRI) (revised 2024);

B. Basic rules of judicial conduct:
   1. The Bangalore Principles of Judicial Conduct[3] (UNODC 2002);
   2. The Magna Carta of the Judges of the Council of Europe (CCJE 2010);
   3. Opinion 7/2005 "Justice and Society" of the Advisory Council of European Judges of the Council of Europe (CCJE 2005) and
   4. The Principles, Recommendations and Guidelines of the European Network of Justice Councils that have been issued from 2004 and on.

2.2. Why a Proposed Ethics Framework Specifically for Judges?

Compliance with the existing legal framework and a set of ethical principles and values, such as respect for human dignity, legality, transparency, and non-discrimination, is an essential prerequisite for the responsible use of AI by the judiciary. However, even auxiliary AI applications in Justice may affect traditional institutional guarantees of judicial independence and impartiality (Sourdin 2021), as enshrined in the Bangalore Principles (UNODC 2002). This is due to the fact that a lack of awareness of algorithms can raise concerns about the ability to uphold these institutional guarantees. Consequently, there may be implications for the right to a fair trial and its associated principles, particularly within the criminal justice system, with regard to the fundamental rights of the accused (Palmiotto 2021).

[3] The Bangalore Principles of Judicial Conduct was adopted by the Judicial Group to Strengthen Judicial Integrity in 2001 and was revised in 2002 at the Hague Conference.

Therefore, judges and prosecutors, as users of the systems during the adjudication of their cases, in particular, must understand the potential and limits of AI systems (Illinois Supreme Court 2025; Abhivardhan 2024; CEPEJ 2018), exercising necessary supervision and control to ensure reliable results (Patterson 2024). Of primary importance, particularly in the context of the administration of Justice, is to ensure that the principle of the rule of law is not undermined and that fundamental rights of those involved with the Justice system are not restricted while using these systems (Greenstein 2022; Sachoulidou 2023). Moreover, the ethical issues raised by the use of AI in the administration of Justice relate to the potential biases of the systems, as well as to confidentiality and privacy. Furthermore, unequal access to technological services is another significant issue.

For this reason, AI should apply in the justice system in a balanced way, ensuring that its predictions are accurate and that decisions are free of biases, stereotypes and discriminatory treatment. However, it is not enough to have a framework of ethical principles; there must also be clear, practical guidelines on how these principles should apply, otherwise they may end up being ineffective. In other words, judges and prosecutors need to follow specific standards; and adopt a rational when using such systems. Guiding principles of the proposed framework are therefore needed, while considering serious practical difficulties that may arise. For example, algorithm control seems almost impossible to achieve, despite the European legislator's efforts with the Regulation (EU) on AI (Veale and Borgesius 2021).

Responsible use of AI also, means, combining it with the Bangalore Principles of Judicial Conduct (UNODC 2002) and other rules of judicial ethics, which should not be affected or altered by the use of technology. For example, adopting the findings of an AI system that has been 'trained' with data that represent a specific trend, may have an effect on judicial independence (UNODC 2002, Bangalore Principles, Value 1, Principle of Independence). Indeed, given the potential risks, these rules must be observed with greater reverence and diligence when using intelligent systems.

2.2.1. The Institutionalized Rules of Judicial Conduct

According to the established rules of judicial ethics, judges must be independent, impartial, fair, decent, competent and diligent when performing their duties, in order to safeguard the equality of all parties involved in court proceedings. This is emphasised in the Bangalore Principles (UNODC 2002) and other texts that describe the proper ethical standards to be respected when performing judicial duties[4]. With regard to their independence, judges must be genuinely independent of both the legislature and the executive power. Furthermore, this independence must be evident and observable to any observer (UNODC 2002, Bangalore Principles, Value 1, Principle of Independence). In the same context, it is essential for judges to maintain impartiality and avoid any external influences that could raise suspicions of bias. Such influences may include political interference, public opinion, criticism, media pressure, or relationships with friends or family. It is also vital that the process is balanced so as not to give the impression that judges are biased or that prejudices and stereotypes are inherent in judicial decisions (UNODC 2002, Bangalore Principes, Value 2, Principle of Impartiality). It is recommended that these rules be combined with the general rules and ethical principles of AI as they have been developed thus far when exercising judicial functions.

[4] These are (a) the Magna Carta of Judges and Opinion 7/2005 "Justice and Society" of the Consultative Council of European Judges, (b) the Principles, Recommendations and Guidelines of the European Network of Councils for the Judiciary and (c) the studies of the European Commission for the Efficiency of Justice (CEPEJ).

2.2.2. Core Values When Using AI Systems

According to the Council of Europe (2024), the use of technology and AI should primarily strengthen democratic institutions and support citizen participation in order to build just societies, as outlined by UNESCO (2021). In order to become democratically legitimate, AI must be the product of open public debate and pluralism. This promotes citizen participation in the public sphere, enhancing freedom of expression and information (Nikolinakos 2023). The essence of this is constant human control. AI can therefore contribute to peace and democracy if it aligns with the values of equality, transparency, and accountability. Other core values include human dignity, social justice, sustainability, and peace (G20 2019; OECD 2019; UNESCO 2021; DUTH 2025).

In order to achieve this objective, it is essential that machine systems are designed in a manner that fosters democratic deliberation, thereby ensuring control of the technology and preventing its concentration in the hands of a small number of institutional or private actors (Jobin et al. 2019; Nikolinakos 2023; UNESCO 2021; Zekos 2022). In the critical domain of Justice, the implementation of intelligent systems, when executed judiciously, has the potential to enhance institutional credibility and prevent arbitrary surveillance or limitations on fundamental rights and freedoms (CEPEJ 2018).

In this regard, the role of AI should be considered as one of complement, rather than replacement, to judges, with the objective of enhancing their legal competencies through the utilisation of appropriately delineated and verifiable data (Sourdin 2021; Nikolinakos 2023). This approach is designed to safeguard both the professional autonomy of law enforcement officials and the fundamental rights of citizens. Furthermore, Regulation 2024/1689 on AI acknowledges that such applications can support decision-making and judicial independence, but they should not replace these processes, as the final decision must remain 'human-driven' (Regulation 2024/1689, Recital 61).

Several critical ethical principles have already been incorporated into legislation. These include transparency, security, robustness, governance, data protection, accountability, documentation and innovation, all of which must take place in a safe manner. It is imperative to recognise the necessity of risk management in this context, and the establishment of monitoring mechanisms for AI activities is crucial (Council of Europe 2024). Evidence of this can be found in the combination of the two main European legislative texts: the AI Regulation (EU) and the Council of Europe Framework Convention on Artificial Intelligence (Council of Europe 2024). In addition to the ethical principles embedded in the legal framework, it is imperative that fundamental values of AI are established to provide an ethical basis for the creation of principles specifically for judges.

Therefore, it is a matter of finding the right balance between the fundamental principles of judicial conduct and the principles of the responsible use of AI. In order to achieve this balance, it is first necessary to present a summary of the applications currently used in the administration of Justice, focusing on criminal Justice, as this may pose a greater risk for fundamental rights due to its very nature. Other than the applications in criminal Justice, we will also present the applications used in the administration of civil and administrative Justice. It is important to acknowledge that the European Union currently utilises approximately 125 tools with the objective of enhancing the efficiency and accessibility of Justice (CEPEJ 2025). These systems, which are assistive rather than automatic, are based on both machine learning and natural language processing, while generative AI[5] is gradually increasing in the field of Justice (CEPEJ 2025).

[5] Generative AI is defined as a system that learns patterns and features from large data sets, i.e., it is based on a statistical understanding of language. Preliminary findings suggest that the system demonstrates particular effectiveness in specific processes, including translation and text generation. As indicated by CEPEJ (2025), it is also effective in semantic opinion analysis and text mining.

3. The Applications Used in the Administration of Criminal Justice

In the field of criminal Justice, the following applications have been developed thus far:

(a) systems that predict the possible outcome of the trial ('predictive justice'). These systems assess the likely outcome of a case by processing court decisions from similar cases in the past. In other words, existing case law guides the prediction of case outcomes (Myltseva 2019)[6];

(b) systems that assist judges in decision-making, particularly during the evaluation of evidence and sentencing, in both pre-trial and main proceedings (CEPEJ 2018; Myltseva 2019; Aletras et al. 2016; González 2020);

(c) systems that classify criminals into risk groups according to their likelihood of reoffending (CEPEJ 2018; Myltseva 2019; Aletras et al. 2016; González 2020).

The second and third cases are of particular relevance to this article, as these applications have been specifically developed to support the judiciary. These tools are essentially risk assessment instruments. In pre-trial proceedings, the application is used to determine whether to impose provisional detention. In main proceedings, it can be used for the determination of the sentence. An application of this kind would also be beneficial in the field of conditional release.

3.1. The Variables Used by the Systems for Risk Assessment

Researchers have identified two main categories of factors that systems take into consideration for their predictions: static and dynamic factors. The age, gender and previous criminal history of the accused or suspect are classified as static factors. Considering that static factors cannot be modified, researchers focus on identifying specific individual needs to ensure fair and effective rehabilitation (Innovative Prison Systems 2025)[7]. These dynamic factors include conditions, such as substance abuse, mental health problems, unemployment, relationships with criminal peers, and anti-social behaviour (Yukhnenko et al. 2020). At the level of the prison system, other dynamic factors are applied, such as the use of violence, the economic and social situation, and prison behaviour (Danielle et al. 2017).

In general, the variables used by these applications can be divided into five categories: (a) involvement in criminal activities; (b) social relations; (c) personality and behaviour; (d) family environment; and (e) social exclusion (Danielle et al. 2017). The latest risk assessment tools employ advanced statistical and machine learning methods to assess risk, with a clear tendency to use objective legal factors, such as criminal record (US Department of Justice 2024).

3.2. Risk Assessment Systems Especially at the Pre-Trial Stage

Another application of AI in criminal Justice, that is considered separately due to its specificity, is the use of risk assessment tools in criminal pre-trial proceedings. These instruments are used to assess the probability of reoffending and the risk posed by offenders prior to the judicial proceedings (González 2020). In pre-trial proceedings, therefore, a defendant may be released with or without restrictive measures, with or without a bail, or may be temporarily detained based on the risk assessment provided by these systems. This information can guide judges and prosecutors when making decisions[8]. The systems assess the likelihood of the defendant appearing or not appearing in court, the likelihood of

[6] A study involving a predictive justice system showed a 79% success rate in predicting ECHR decisions, by training the algorithm on the Court's case law (Aletras et al. 2016).

[7] See below, Section 3.4.

[8] Such systems are used in the United States, such as the Virginia Pretrial Risk Assessment Instrument (VPRAI), Public Safety Assessment (PSA), Ohio Risk Assessment System Pretrial Assessment Tool (ORAS-PAT), COMPAS PRRS-I, etc., while a similar system is also used in the United States at Federal level.

committing a new offence before the trial and the risk to public safety and, based on these criteria, recommend the appropriate treatment of the defendant in pre-trial proceedings (US Department of Justice 2024).

3.3. Support Systems for Judges in the Main Proceedings

As previously stated, the use of AI in criminal proceedings may give rise to concerns regarding:

(a) The evaluation of evidence, and
(b) The decision on the sanction.

When evaluating evidence, the systems check that the correct standard of proof has been applied and provide a separate standard for each crime. Furthermore, they are able to identify any gaps in the evidence and contradictions within it. At the sentencing stage, the systems assist judges with appropriate sentencing standards, as risk assessment tools. The systems' guiding principles are based on the analysis of previous decisions and sentences imposed in similar cases. Information is retrieved from relevant data, including sentences imposed in the past. The objective of these systems is to ensure that judges do not impose sentences that are excessively severe or unduly lenient[9]. In essence, these tools evaluate the probability of reoffending for a particular individual (US Department of Justice 2024). In certain countries, such as Canada, a typical case of such systems involves specific applications that are tasked with evaluating the likelihood of reoffending by sexual offenders (Hanson et al. 2015).

3.4. AI Applications Used in Prison Systems

The utilisation of AI systems has also been introduced in prison systems. These systems are employed to enhance prisoner reintegration, security, and prison management[10]. These systems facilitate the capacity of prison staff to take informed decisions regarding the risks and needs of prisoners. In this context, the algorithms evaluate the behaviour and criminal record of prisoners, while they are serving their sentence in order to determine their potential for reintegration. In essence, the assessment process involves the evaluation of the suitability of specific alternative sentences or alternative sentencing measures for the individual concerned. During the assessment process, prisoners who are classified as "low risk" by the systems are given the opportunity to serve their sentences outside of prison, with alternative measures and sentences, thus allowing them to maintain their family relationships and employment concurrently. This approach has been shown to address issues of prison overcrowding and to facilitate more effective allocation of resources (InmateAid 2024). The utilisation of AI has also the potential to contribute to the enhancement of prison security measures. This can be achieved through the development of surveillance systems that employ facial recognition and behavioural analysis technologies. In this particular instance, algorithms are used to monitor the behaviour of both prisoners and staff, with the objective of identifying potential conflicts and preventing criminal activity (InmateAid 2024).

These systems function in an analogous manner to applications employed in pre-trial or main criminal proceedings. The function of these factors, and the factors themselves, are discussed in this article, as they could be useful to judicial officers when deciding whether to grant parole. They could also be useful in replacing criminal convictions with alternative measures or penalties. In addition, AI systems have been found to be effective in reducing

[9] Such applications are used in the courts of China and Malaysia, with a focus in the Malaysian case on specific offences such as rape and drug cases (Daud 2022).
[10] Such tools are used for example in the USA (InmateAid 2024).

the risk of reoffending after release by developing personalised rehabilitation programs based on each prisoner's specific characteristics (Patterson 2024).

In sum, the objective of these applications is to enhance various aspects of prisoners' lives and behaviours with a view to mitigating the identified risk.

Social skills, attitudes, mental health, access to employment and education are critical variables in this respect, as they help to promote reintegration and reduce the risk of reoffending. However, considering that risk assessment tools use variables pertaining to both static and dynamic factors, there is genuine risk that biases and stereotypes may penetrate the assessment process (DUTH 2025). Consequently, it is imperative for judicial officers to adopt a judicial conduct that adheres to the fundamental moral and ethical principles of using AI when assisted by intelligent systems.

4. The Applications Used in the Administration of Civil and Administrative Justice

The implementation of AI systems in the legal sector is a contemporary phenomenon that is already having a transformative effect on the management of civil disputes. Initially, the application of AI in legal research is focused on private litigation, where sophisticated platforms utilise machine learning algorithms to address legal inquiries. The utilisation of AI in the preparation of legal documents and pleadings for submission to the court via data processing represents a significant development in the field of legal technology. The system is capable of analysing facts and predicting the outcome of a trial before the commencement of civil proceedings.

At the extrajudicial level, applications of Online Dispute Resolution (ODR) utilise learning algorithms to suggest ways for the parties to settle the dispute (Thompson 2015). These platforms offer a model of judicial reasoning related to monetary claims, with a particular focus on the collection of overdue debts. Furthermore, they ascertain the pivotal parameters that are subject to evaluation in the course of judicial decision-making. These include the amount of the claim (including interest and costs), the jurisdiction and competence to resolve the dispute, and the legal validity of the claim (Papp et al. 2019). It is important to note that the system suggestion is not enforceable unless it is previously ratified by natural judges. In other implementations, the system simply evaluates the data and does not propose a solution. This is facilitated by human intervention through the implementation of procedural rules (Nakad-Westrate et al. 2015).

These systems are currently being utilised at the core of the administration of Justice, thereby complementing the decision-making process in civil and administrative trials. An illustration of such a sophisticated form of intelligent system is China's digital courts, which use algorithms to adjudicate cases involving intellectual property, e-commerce, and consumer product producer liability, as well as some administrative law disputes (Susskind 2019)[11]. These digital services offer citizens online legal assistance on a range of issues. Furthermore, the option of submitting documentation digitally is available, in addition to the use of voice recognition software for the transcription of significant claims and testimonies (Susskind 2019). These applications could also be used by judges when adjudicating civil or administrative law disputes. In this future context, the initial approach and potential resolution of the dispute would be provided to the judges by processing the necessary data.

[11] Such a system is used in the Beijing People's Court (Bloom 2020).

5. Adherence to Ethical Rules for the Use of AI

In accordance with the AI Regulation (EU), users of high-risk AI systems, are required to implement appropriate technical and organisational measures to ensure that the systems are in accordance with their instructions. This classification of "high-risk" applies to systems used in the judiciary. At the same time, it is essential to delegate supervision to individuals who possess the required competencies, training and support. It is also vital to ensure that the input data are relevant and sufficiently representative of the intended purpose of a 'high-risk system'. Furthermore, records automatically generated by the system must be retained for a designated period of time (Regulation 2024/1689, recital 67).

However, the existence of the legal framework (Regulation 2024/1689, Framework Convention on Artificial Intelligence) cannot guarantee transparency within systems, the absence of inequalities, or the non-substitution of human judgement. Without this assurance, there is a risk of losing citizens' trust in institutions (Boddington 2017; Jobin et al. 2019) and, consequently, in Justice. Therefore, in addition to the legislative framework, there is a necessity for the establishment of ethical/deontological principles (Boddington 2023) which should complement the existing legislative framework and provide clear written guidelines to the judiciary (NCSC 2024). This is because, when using AI, judges have limited knowledge of, understanding of, and control over machine behaviour. This may lead to a weakening of their professional power and, consequently, a failure to achieve the beneficial use of AI for Justice (Boddington 2017).

It is essential to emphasise that in order to successfully integrate AI into the administration of Justice, particularly in the criminal Justice sector, it is imperative to adhere to the principle of "human rights by design". This principle is emphasised by both the Committee of Experts on Online Ombudsmen (MSI-NET 2018) and the European Commission for the Efficiency of Justice (CEPEJ 2018). Additionally, ethical governance is crucial for ensuring the integrity and effectiveness of these systems, as outlined by UNESCO (2021). A reliable AI enhances the transparent and fair digital transition of Justice. Thus, the formalisation of professional ethics rules is essential for upholding values such as transparency, non-discrimination, accountability, and human oversight and supervision (Boddington 2017). Concurrently, the proposed rules will establish a distinct operational framework for AI within the Judiciary, ensuring adherence to all the aforementioned values and principles. The proposed ethical principles and the proposed reasoning of the judges, while using the systems, serve exactly this purpose. As mentioned below, the initial step should be the specification of the way by which the general principles can be integrated into the judiciary.

6. General Principles of Integrating AI into the Administration of Justice

In order to conform with the legislative framework and the crucial ethical principles in the administration of Justice, the principles, that need to be particularly respected by the courts, should be specified and adapted accordingly for the judiciary in relation to the general principles applicable to other legal professionals[12]. The following presentation outlines the general principles that judges should observe in the performance of their duties.

6.1. The Principle of Lawfulness When Using the Systems

The content of this principle concerns the compliance of algorithms with applicable national, European and International law, the rule of law, the fundamental rights and institutional guarantees. Therefore, courts must uphold this principle when utilizing AI

[12] In general, for legal professionals, the basic ethical principles are those of legality, which includes the principles of necessity and proportionality, prevention and minimisation of harm, enhanced by accuracy and human and environmental well-being, enhancement of human autonomy, non-discrimination, transparency and explainability, accountability, technical robustness and safety (DUTH 2025).

systems (UNICRI and INTERPOL 2024). Judges are the competent bodies par excellence for observing the principle of legality, as they have been entrusted with the judicial function, during which they set in motion the procedure of the administration of law. Within the framework of the principle of legality, any derogation from respecting the rights of individuals is only permissible if there exists a specific legal basis for such action, or if a legitimate objective is pursued (DUTH 2025).

Therefore, when judges exercise power through AI systems, their material sovereignty over these systems should be maintained (Abhivardhan 2024). The aforementioned principle, which serves to reinforce the existing principles of transparency and accountability in the utilisation of systems, has the potential to enhance citizens' trust in the administration of Justice, provided that it is respected (Scherer 2016).

6.2. The Principle of Proportionality When Accepting the Outcome of AI

According to the principle of proportionality, state decisions and legal actions must be clearly defined by law and appropriate, necessary and they should restrict individual rights to a minimum. When restricting a right, the harm suffered by an individual must be proportionate to the benefit resulting from that restriction (Möller 2012). Furthermore, under the European Convention on Human Rights (ECHR), any interference with human rights is permitted only if it is necessary to achieve one of the legitimate objectives listed in the Convention (ECHR, Article 18).

According to the case-law of the European Court for Human Rights, the desired balance is considered only when the restriction does not affect the essence of the right or lead to the loss of its actual content. Therefore, the principle of proportionality requires a fair balance between conflicting public and private interests (ECHR 2024: Case of Oleg Balan v. the Republic of Moldova; ECHR 2019: Case of Maltsev et al. v. Russia; ECHR 2017: Case of Pihl v. Sweden). The factors assessed include the importance of the conflicting interests, the objectivity, the adequacy of the restriction and its reasonable nature or the existence of a consensus among the member states of the Council of Europe on the issue under consideration (ECHR 2014: Case of National Union of Rail, Maritime and Transport Workers v. the United Kingdom).

In the same context, it is essential to ensure that the objective cannot be achieved by less intrusive means (UNICRI and INTERPOL 2024; Sachoulidou 2023). Consequently, judges should respect these limitations when using the systems, ensuring that the decision they make with the assistance of AI is well-documented regarding the acceptance or non-acceptance of the indicated result[13]. In sum, the benefit resulting from the use of the systems, namely the acceleration of the administration of justice, the reduction in costs and the feedback provided by the algorithms, should be more important than a possible burden on individual rights[14].

6.3. The Principle of Strengthening Judicial Autonomy

The Artificial Intelligence Regulation (EU) underlines the significance of upholding a 'human-led' approach to Justice (Regulation 2024/1689, recital 61). Judges should therefore not be substituted in their judgment by the systems, but on the contrary, they should intervene and correct the functioning of the systems when they detect a malfunction[15]. This type of correction means not taking into account algorithmic results if they are not in accordance with the judges' reasoning.

[13] For example, the AI Regulation states that "real-time remote biometric identification shall not be permitted unless the use is strictly ancillary to the objectives of the Regulation" (Regulation 2024/1689, Article 5).

[14] About the principles of proportionality and necessity see also (Regulation 2023/1543, recitals 2, 15 & 24).

[15] See Section 7 below for more on this.

Human intervention is, thus, vital for preventing any abuses or errors (Regulation 2024/1689, Article 14)[16]. Furthermore, it is crucial to emphasise that judges possess the prerogative to exercise independent judgment, without coercion or manipulation by technology. In other words, the decision-making process must be transparent, unbiased and provide alternative scenarios for every case they process (DUTH 2025). Conversely, AI should be considered a useful auxiliary tool that enhances the efficiency of Justice and the judgment of judges without limiting their autonomy. Otherwise, their conscience may be indirectly affected.

6.4. The Principle of Effective Access to Justice When Using AI

Article 6 of the European Convention on Human Rights, as well as Article 47 of the Charter of Fundamental Rights of the European Union, guarantee the right of effective access to Justice. From an AI standpoint, this principle means that individuals can effectively challenge decisions taken on their behalf by systems, thereby safeguarding their rights. This is due to the fact that automated decisions have the potential to be biased or opaque, and thus have an impact on fundamental rights and freedoms (CEPEJ 2018; European Group on Ethics in Science and New Technologies 2018).

6.5. The Principle of Gentle Adaptation

Considering the unprecedented experience of judicial systems and judges themselves in dealing with AI and its capacities, it would be preferable for the use of intelligent systems to initially assist judges in small-scale disputes (for instance, petty disputes or minor offences); i.e., tasks that present a low risk to human rights and the law. This principle is of particular relevance to policymakers and those involved in the administration of Justice, regarding the choices they will make in accordance with the integration of AI into the judicial decision-making process. Subsequent to this gradual introduction, the systems' results should be checked and documented to ensure their accuracy. After this gradual introduction, the results of the systems should be checked and documented for their correctness, so that they can then be expanded to assist with more serious or complex cases (NCSC 2024). Such a mild adjustment can preserve the basic institutional guarantees for the administration of justice intact. Such gentle adaptation is not just an option; it is an institutional imperative codified internationally as 'human-in-the-loop' (European Commission High-Level Expert Group on Artificial Intelligence 2019). But how can gentle adaptation help in this regard? Firstly, the algorithm should explain the reasoning behind its proposals, and judges should familiarise themselves with its potential strengths and weaknesses (NCSC 2024). This will enhance their familiarity with the systems, providing greater security, control, and supervision, while also helping them acquire technological literacy. Conversely, suddenly introducing the entire Justice system without control could reproduce social injustices on a massive scale due to the inherent biases that may exist in algorithms (CEPEJ 2018). Simultaneously, however, it may be easier to control the systems in this way. Finally, gentle adaptation using simple initial cases ensures that AI remains a supportive tool in line with the requirements of the Regulation (Regulation 2024/1689, Recital 61). Another proposal is to categorise cases according to the potential risk that the use of AI could pose to the judiciary. The 'risk-based' approach is increasingly being adopted by the European Union in relation to critical issues such as these (Nikolinakos 2023). Therefore, just as the Regulation categorises systems as prohibited, high-risk or limited-risk, the same could be done for judicial cases relating to the use of algorithms to assist in their issuance. For instance, the potential risks in criminal cases are

[16] "Oversight can be achieved through governance mechanisms such as ensuring a human-in-the-loop (HITL), human-on-the-loop (HOTL) or human-in-command (HIC) approach."

arguably higher than in civil cases. The latter present a higher risk than administrative fines, such as those for infringements of the road traffic code or tax offences[17]. With gentle adaptation, AI could initially be applied to 'low-risk' cases, such as those involving simple administrative offences or small monetary claims in civil law, to assess its potential and effects. Subsequently, if this is deemed safe and feasible, it could be extended to other "high-risk" cases. These include cases in criminal law.

7. The Type of Control by the Judges

Naturally, judicial officials should carry out the necessary controls while using these systems in order to assess the compatibility of the algorithms with the fundamental principles of judicial conduct. To achieve this, it is necessary to have a general familiarity with machine learning algorithms, natural language processing, and other AI techniques relevant to legal work (NCSC 2024). At the same time, ethical guidelines for AI must be followed to facilitate this oversight (DUTH 2025). This requires a combination of legal and procedural knowledge and a specific line of reasoning when using the systems in the administration of Justice.

The above form of control by the judge is not identical to a technical audit of the algorithm, nor to the algorithmic design or development. The role of the judge is oriented towards normative and ethical oversight of use (Regulation 2024/1689, Article 14; CEPEJ 2018), which must focus on the consequences of the algorithmic result on the judicial decision. In this context, the judge is not called upon to analyze the algorithm, but to assess whether and to what extent its use (and in what specific way) in the particular case is compatible with the fundamental principles of judicial ethics in general (UNODC 2002, Bangalore Principles) and the ethical use of artificial intelligence, such as independence, impartiality, proportionality, and human oversight (CEPEJ 2018)[18].

On the other hand, responsibility for ensuring that systems comply with the applicable regulatory framework, particularly with regard to data quality, lifecycle monitoring and institutional safeguards for their legality, lies primarily with the administration of Justice (CCJE 2001), which acts as the deployer of the system within the meaning of the Regulation on Artificial Intelligence (Regulation 2024/1689)[19]. Therefore, Justice administrators are responsible for continuously evaluating how each system works, documenting and analyzing any errors or deviations, and creating reporting and correction mechanisms. At the same time, setting up pre-implementation (ex-ante) review processes, before an artificial intelligence system is used in the courts, is consistent with both Regulation 2024/1689[20] and judicial ethics, as long as it does not interfere with a judge's ability to make decisions in individual cases.

Similar quality assessment methods have been recognized as necessary in the context of European guidelines on the ethical use of artificial intelligence in the justice system (CEPEJ 2018; European Commission High-Level Expert Group on Artificial Intelligence 2019). Therefore, having institutional evaluation mechanisms strengthens a judge's authority by ensuring that the systems used meet basic quality standards before they are used by the judge.

[17] It is important to note that this categorisation concerns exclusively the risk posed by the use of AI in resolving cases, in relation to the need for "strict" or more "relaxed" adherence to ethics, as the Regulation characterises all applications intended for use in the administration of Justice as "high risk".

[18] This distinction between institutional oversight and individual judicial judgment allows for the effective integration of artificial intelligence into the administration of justice, with clearly distinct roles and without undermining the human character of the judicial function or shifting responsibilities that exceed the institutional responsibilities of the judge.

[19] Primarily Articles 9, 10, 14, 26, 72–74.

[20] Articles 9, 26, 27 and 43.

Therefore, the requirement for human oversight cannot be interpreted as the judge's obligation to take over the deployer's responsibilities, nor should it imply a requirement for the judge to possess the technical expertise to identify or rectify errors at the model level, as if they were the system's creator. On the contrary, the judge is primarily responsible for exercising regulatory and ethical control over use, determining whether the algorithmic outcome and its application in the specific case are consistent with the guarantees of a fair trial and the fundamental principles of judicial ethics (CEPEJ 2018; UNODC 2002, Bangalore Principles). However, as demonstrated by the subsequent indicative questions, the judge does not abdicate his or her own responsibilities, particularly in light of human oversight and the principle of accountability (CEPEJ 2018; UNESCO 2021; UNICRI and INTERPOL 2024), because judicial discretion and ultimate responsibility for the decision remain human and personal (CEPEJ 2018; European Commission High-Level Expert Group on Artificial Intelligence 2019).

Thus, the principle of explainability (UNESCO 2021) serves as an essential prerequisite for the judges to comprehend the algorithm's outcomes, while the principle of traceability (UNICRI and INTERPOL 2024), facilitates the documentation and reconstruction of the processes that produced these results, thereby augmenting transparency and the capacity to justify judicial decisions (European Commission High-Level Expert Group on Artificial Intelligence 2019; CEPEJ 2018). Consequently, since the administration of Justice is tasked with the selection and management of systems throughout their life cycle, it is imperative to ensure guarantees of explainability and traceability at both the design and organizational levels. This will enable judges to effectively exercise their regulatory and ethical oversight over the utilization of such systems, without compromising the independence of judicial discretion (CEPEJ 2018; Regulation 2024/1689, recital 61).

7.1. Safeguarding Impartiality in the Use of Algorithms

Technology is a human creation; hence, human biases are transferred to machines. These biases can be embedded in algorithmic systems either unintentionally, due to their presence in the data provided to the algorithm, or intentionally, where programmes deliberately shape the data samples that are used to train the algorithms in order to serve specific interests. Respect for human dignity implies that systems must treat individuals as beings possessing will, individuality, rights, and corresponding obligations (DUTH 2025). In the administration of Justice, particularly criminal Justice, where personal freedom is at stake, judges must intervene to prevent such bias (Illinois Supreme Court 2025).

In accordance with the Bangalore Principles and other international and European texts on judicial ethics, judges should perform their duties impartially, without favour or prejudice, to ensure that their conduct, both in and out of court, strengthens public and party confidence in the impartiality of the judiciary (UNODC 2002, Bangalore Principles, Value 2, Principle of Impartiality). Indeed, impartiality applies not only to the decision, but also to the procedure by which it was made. This is precisely the crucial point: since AI systems are employed during the decision-making process, they must therefore operate in a manner that prevents the perpetuation of structural discrimination and social exclusion against certain social groups that have a record of previous discrimination. But how can judges guarantee this?

7.1.1. Transparency and Explainability of Systems

To ensure the impartiality of the systems, it is necessary for judges to understand how these work. In other words, they should understand what AI is, its data-driven learning process, and the criteria and variables on which its outputs are based. They should also understand the process by which these results are extracted.; It is not enough to just issue a

result, but the system must be able to justify why it chose the specific solution. Nowadays, it is widely recognised that AI can generate false or misleading information (NCJI 2024). Therefore, it can produce a legally misleading resolution of the dispute. So, a double check by the judges for any information provided by the system is necessary (Supreme Court of Arizona 2024). As a Code of Conduct, it must strike a balance between abstract principles and the use of AI. The application of these principles must therefore be translated into concrete practice (Boddington 2017). In this context, the following reasoning is proposed in the form of questions that judges can ask when using a system to help maintain human control: This reasoning is, by definition, imperfect due to the continuous evolution of AI, and must therefore be subject to permanent revision (Boddington 2017). Consequently, when judges are dealing with a case in which they can receive assistance from AI, they should consider, as an example, some questions related to impartiality:

(1) What was the rationale for utilising the specific AI system in this case, and what was required from this?
(2) What data did the algorithm use to reach its conclusion?
(3) Did it employ only static or dynamic factors to make its assessment? Which factors were they?
(4) Does the algorithm adequately justify its judgement, or is it unclear?
(5) Is the legal solution provided by the algorithm in line with existing case law?
(6) If not, does this case need to be addressed by developing new case law, and does the algorithm data need to be modified?

In any case, if the algorithm does not adequately explain how it reached its conclusion, or if the judges cannot understand its reasoning, they should not follow the system's instructions, as otherwise the decision may be biased (DUTH 2025).

7.1.2. The Principle of Continuous Supervision and Individual Control

Further, judges must be capable of monitoring the automated systems, intervening, and rectifying the functionality of AI systems during their use. The principle of human intervention during the process ("human-in-the-loop") must be in effect, so as to ensure that the final responsibility and judgement belong to humans (Nikolinakos 2023). This is crucial for preventing errors and abuses (Regulation 2024/1689, article 14). Such a control must be established through clearly defined roles and processes, in order to ensure the flexibility of the human intervention and accountability in critical decisions (DUTH 2025).

Therefore, the courts are required to maintain a continuous control of the impact that an automated system could have on various groups, in order to form strong protocols for equal access to Justice. This is a responsibility of the Justice administration. Furthermore, the adoption of appropriate models for the administration and management of courts, particularly with regard to new technological issues, has long been a priority for the CCJE (2001), in relation to the independence and impartiality of judges. So, how can this be achieved? One approach is to establish oversight committees composed of judges to evaluate the results of AI applications and their impact on different groups (NCSC 2024).

For instance, if the system's results indicate differential treatment of a specific group based on gender, colour, origin, or other features, the data employed may be biased. In other words, means of control should be in place to ensure that the data used are diverse and representative (Laskowski et al. 2023). In this context, the committees can inform the algorithms' manufacturers of their findings and propose specific standards. The manufacturers can then make the necessary adjustments or replace the systems by incorporating new data and changing social norms that reduce prejudice and stereotypes over time (Laskowski et al. 2023). Additionally, the right to challenge the effects of any biased algorithms, and the assurance that automated processes are compatible with ethical

behaviour and empathy, are aspects of human dignity (DUTH 2025). Consequently, courts could hire specialised technical advisors (NCSC 2024) to inform, for example, judges about the following:

(1) Where does the training data for the algorithms come from?
(2) Is it representative or could it be statistically biased[21]?
(3) Does the data include sensitive information, present in static and dynamic factors, such as race, gender, religion, socioeconomic status, sexual orientation, etc., that may influence the outcome?

Furthermore, when judges are using a system that evaluates the risk of criminal reoffending, they can employ two strategies: (a) form their own personal opinion based on the evidence; then use the system to compare their judgment with that of the system, considering of course that the system aims to improve the administration of Justice; (b) pose the same question to the algorithm using exactly the same information and differentiating the social group from which the suspect or accused comes from, (race, gender or origin), and check if the system behaves differently. That is, to follow an experimental method (Laskowski et al. 2023). This will allow them to check whether the system's judgement, based on the factors it uses, comes at the expense of a specific social group, gender, ethnic origin, or other, and thus identify possible algorithmic bias and correct it through their decision-making process. In such a case, some relevant questions posed by the judges should be:

(1) Do the results of the algorithm align with human judgement in this case?
(2) If so, are they improving it in some ways?
(3) If demographics, social group or other specific characteristics are differentiated, does this affect the system to alter its legal judgement?
(4) If so, is this because biased data has entered the algorithm?

The purpose of the above reasoning is to establish trust in the algorithm's ability to explain its conclusions. This includes the ability to reconstruct the reasoning behind the results issued and detect any errors or inconsistencies. Without this reasoning, errors cannot be identified, and it is impossible to determine whether the results are the product of inherent bias. While maintaining this judicial oversight does not guarantee the success of the system's outcomes, it can however facilitate timely judicial intervention to circumvent decisions that the system cannot explain (Laskowski et al. 2023).

7.2. Defending Judicial Independence

Judicial authorities should also consider the following parameters when using the systems: First, their training relies on imported data from the study of previous court decisions and case law. Consequently, the data, imbued with specific trends, include previous judgments that lead to results that simply mimic the decisions with which they have been trained. This indicates that the algorithms' judgments can be altered in accordance with the preferences of the manufacturer, based on the data chosen to produce the desired result. Furthermore, the manufacturers of the algorithms responsible for court rulings are private companies with which the executive power of the state cooperates in the context of the digital transformation (Franssen and Berrendorf 2021). So, if it is not possible to verify the data used by the algorithm during the system's operation (based on the previous step), then at this stage it is essential to ensure that the control mechanism that maintains the independence of judges is intact, that is, "the exercise of their function, based on their own real facts assessment, without any external inducements, influences, pressures, threats or

[21] Statistical bias arises when the data used by the algorithms are not representative or not appropriate for the specific case (European Union Agency for Fundamental Rights 2022).

interventions, direct or indirect, from any party or for any reason" (UNODC 2002, Bangalore Principles, Value 1, Principle of Independence). Which are the necessary steps to ensure the independence of judges during the use of the systems?

7.2.1. Oversight of the System Developer

There are several steps that judges could take in this context. First, the algorithm developer should be subject to the following scrutiny and, of course, this data should be provided to the judges. From the judges' perspective, the following reasoning could help in this direction:

(1) If the algorithm is privately developed and operated, what are the company's motives and interests?
(2) Is the algorithm related to financial or other interests that may affect the outcome of the case?

As mentioned above regarding impartiality, an independent body such as the relevant court committee should be able to certify the system (NCSC 2024)[22]. At the same time, judicial officers should have access to these audit reports, which certify the system's independence throughout its life, when exercising their duties. Systems evolve dynamically and thus, they can learn and modify their initial reasoning in response to new data, which may affect their autonomy. In other words, judges must be aware that the system continues to function properly, that is for the purpose for which it was created, and that it has not been affected in the meantime. Thus, the crucial questions for the judges' reasoning in this case could be the following:

(1) Is there an external evaluator overseeing how the algorithms treat different groups?
(2) Have variables been used that are not related to the case?
(3) Is the system suitable for the specific case, or does it have peculiarities that make its use inappropriate?

7.2.2. The Court Decision as a Human-Centric Activity

As mentioned above, AI is a useful tool for judges that contributes to the efficiency of Justice. In this context, AI's unimaginable speed, the possibility of remote access to courts and reduced costs are just some of its advantages (Asthenidis 2022). However, it should serve as another useful tool, complementary to the judge's legal knowledge and the conviction they have formed about the case (DUTH 2025; Nikolinakos 2023). In other words, the judges should have the right to disregard the system's decision if they disagree with it or question its neutrality, without having to justify this choice. Furthermore, the judges should have the right to refuse (either explicitly or implicitly) the system's assistance and render their decision based on their own judgement, provided they determine, based on the proposed reasoning, that the algorithm may have been influenced by external factors, leading to direct or indirect interference with judicial independence (UNODC 2002, Bangalore Principles, Value 1, Principle of Independence). The rights of judges constitute the quintessence of their independence from external factors and thus, they maintain the ability, their only criteria for decision-making to be their consciousness and the law. As far as the above are concerned, a sound reasoning can be developed based on questions such as the following:

(1) Is the result of the system fair and reasonable?
(2) Can a court decision be adequately justified when it differs from the algorithm's conclusion?

[22] Such committees have been established for example in some US Supreme Courts, such as Arizona, Georgia and Delaware (Supreme Court of Arizona 2024; NCSC 2025).

(3) If so, why does the algorithm give a different answer?
(4) Is this a standard or atypical scenario that the system cannot resolve?

In conclusion, in order to maintain the independence of judges, the following cumulative factors should be present while using AI tools:

(a) Compliance with the fundamental principle of transparency, as mentioned above;
(b) Regular review of the results of the algorithms by independent bodies or competent committees within the courts;
(c) Judges should have personal control over the procedure by adopting the above reasoning;
(d) Human oversight should be guaranteed by ensuring that the judges have the last word in decision making.

7.3. Maintaining the Decency and Integrity of Judges When Using the Systems

According to the accepted rules of judicial conduct, integrity is essential for the proper performance of the judicial function (United Nations, Bangalore Principles, Value 3, Principle of Integrity). This should be evident to the average reasonable observer, and it strengthens citizens' faith in the judiciary system. As outlined in the Bangalore Principles of Independence, "Justice must not only be done, but must also be seen to be done" (United Nation, Bangalore Principles, Value 1, Principle of Independence). Therefore, if judges rely on AI to offer quick and easy solutions to legal and factual questions, without observing the aforementioned principles related to impartiality and independence or using the reasoning that ensures the systems' function properly, the average reasonable observer will not apprehend whether the execution of judicial duties is correct or not. Instead, they will consider that prejudices and stereotypes are at play, and that the delivery of Justice is based upon specific interests or is simply a formal procedure.

Thus, public trust will weaken, delivering a significant setback to the principle of integrity. This also undermines the principle of propriety, since according to this principle, judges should avoid situations that could give rise to suspicion, favouritism, or bias (UNODC 2002, Bangalore Principles, Value 4, Principe of Propriety). This may occur if systems containing data imbued with specific trends were used without prior filtered by judges. Therefore, observing the aforementioned best practices when using the systems, ensures among other things, the integrity and propriety of judges in the exercise of their duties.

7.4. Protection of Equal Treatment of the Parties

Another fundamental principle of proper judicial conduct is the assurance of equal treatment of all parties before the courts alongside the knowledge and understanding of the diversity of society and the differences that arise due to race, colour, gender, religion, national origin, disability, age, marital status, sexual orientation, social and economic status, and other factors. That is, the manifestation of bias or prejudice towards any party, witness, lawyer and court staff is reprehensible behavior, unrelated to the appropriate performance of judicial duties. At the same time, the judge must require that all parties involved refrain from any bias unrelated to the legal issues of the case (UNODC 2002, Bangalore Principles, Value 5, Principle of Equality).

Consequently, equal treatment of all parties involved should be a key priority for the judge when using the systems. To this end, it is recommended that the judge initially notify the parties of the use of an AI system. This is essential, as parties must be aware that algorithms were used to solve their case, and they should be able to challenge the system's results by presenting their own arguments and evidence. It is also imperative that the judge examines the possible use of sensitive data and conduct a comparative analysis with other cases that have similar demographic characteristics, as different results in similar cases may

signal bias. Ultimately, the final judgement should rest with the judge, who must oversee the algorithm's application throughout the process. This also guarantees the right to access to Justice, as enshrined in Article 6 of the European Convention on Human Rights (ECHR) and Article 47 of the Charter of Fundamental Rights of the European Union.

Questions such as the following should lie at the heart of the judge's reasoning in this case:

(1) Is a party adversely affected by the system's characteristics during the judgement?
(2) Is the system's judgement reasonable and fair, or would a human judgement lead to a different result?
(3) Have the parties been informed about the use of the AI tool?
(4) Is the system certified and scientifically valid?
(5) Is the methodology by which the system reached its decision explicit?
(6) Can the parties understand the reasoning behind the conclusion so that they can challenge it?

This reasoning can help judges control the procedure to its full extent, while the system can contribute to efficient decision-making without replacing human judgement. This ensures, among other things, that the parties are treated equally.

7.5. Judges' Awareness of Their Competence and Diligence When Using the Systems

Another vital parameter in adopting an appropriate judicial conduct is the diligence and competence with which judges exercise their duties. A basic prerequisite for this is the adoption of measures to maintain and enhance the knowledge, skills, and personal qualities crucial for properly performing their duties. In this context, judges should make use of the training available to them (IOJT 2017). They should also keep up to date with international developments concerning human rights, adopting their decisions fairly, effectively and with reasonable speed. Any conduct that is incompatible with the diligent performance of their duties is unacceptable (UNODC 2002, Bangalore Principles, Value 6, Principle of Competence and Diligence). Judges should therefore be receptive to training in the use of systems to understand how they work, adopting a culture of proper use with respect for fair trials and human rights and adhering to the aforementioned principles (Migliorini and Moreira 2024; Roy et al. 2023; Rajendra and Thuraisingam 2022). In this way, the rational integration of these systems into the administration of Justice can be achieved.

Increasing the Attention of Judges

Judges should have heightened reflexes and intense attention when using the systems, especially given the fact that AI transforms scientific research into data-driven research due to the massive participation of systems in scientific research, in which they can find patterns in an increasing amount of data (He 2024; Bianchini et al. 2022). Therefore, the methodology with which the scientific research is carried out has been transformed, on the one hand, by machine learning techniques, that identify patterns within input data, and on the other hand, by general-purpose algorithms capable of producing complex results by searching in a huge amount of data (Nature Editorial 2023). This change also affects legal science through the aforementioned tools.

In addition, the digitalisation of Justice leads to a convergence between legal science and computer science, resulting in the integration of human expertise and AI algorithms becoming a vital component of legal research (Villasenor 2023). Consequently, a "statisticalisation" of Justice emerges, whereby statistics are used to process the data studied by systems to extract knowledge (Lind et al. 2013). Simultaneously, future judges utilizing AI as an assistant will become acquainted with algorithms, which could affect their judgement due to the fact that if they are solely trained in the basic skills required for algorithms, such

as pattern recognition, this may affect not only their perception of scientific competence, but also their creativity (The Royal Society 2024). This is a cause for concern as over-reliance on AI could lead to a decline in the necessary skills for legal thinking, judgement and perception (Bharati 2024).

Therefore, judges should be cautious when using these systems, based on the aforementioned framework, so that they do not change their way of scientific thinking and structuring judicial reasoning, while maintaining intact human control over the systems, which will keep their ability to administer justice active. Thus, the questions that the judges could ask in their reasoning are the following:

(1) Was my decision autonomous, or was I influenced by the algorithm's reasoning?
(2) Did I use the scientific tools of constructing legal reasoning correctly and subject the facts to the rules of law with individualization and uniqueness?
(3) Can I identify my own methodological steps in my judgement and then juxtapose my own judgement with that of the system?
(4) Does my judgment reflect my conscience and the law or is it influenced by the establishment of certain patterns?

Enhancing the knowledge and technological skills of judges is now emerging as a very important factor in ensuring that they perform their duties properly and with integrity.

8. What Is the Value of Judges' Reasoning?

The value of this reasoning and the indicative questions that a judge can ask when implementing an AI system, in order to check its compatibility with the administration of Justice, is twofold. Firstly, it can make the basic ethical principles applicable in practice. The proposed individual reasoning tool aims to illustrate the perspective that a judge should adopt when overseeing the system.

Also, these questions can function as a filter for critical thinking. Although AI can process huge amounts of data by identifying patterns and standards (European Council 2025), it differs from human judgement in that it cannot make moral assessments or understand the social context in the same way as a natural judge (CEPEJ 2018). By posing such questions during their reasoning, judges can ensure that the result is not simply the product of algorithmic processing, but has been evaluated through fundamental legal and ethical principles, which are also guaranteed by the aforementioned European Union legislative framework on AI (Voigt and Hullen 2024).

Furthermore, the inquiries posed by this line of reasoning can facilitate the identification of the strengths and weaknesses of the systems in question. It is important to note that sophisticated algorithms may be subject to inherent biases or be based on incomplete and unrepresentative data (CEPEJ 2018; Hacker 2018). Consequently, these inquiries and the proposed rationale can assist the judge in determining whether an algorithmic determination necessitates further examination or should be repudiated, thereby enhancing the protection of the rights of the parties and the legitimacy of the process (DUTH 2025). This is in alignment with the prevailing process of judicial reasoning and decision-making.

Moreover, these questions enhance both transparency and accountability (European Commission High-Level Expert Group on Artificial Intelligence 2019). The legitimacy of a judicial decision that is informed, in whole or in part, by an algorithmic system necessitates that the judge provides a detailed rationale for their adoption or rejection of the system's conclusions. Consequently, this reasoning, which can be supplemented by additional questions that each judge can individually ask at his discretion, enables the documentation of the decision-making process, thereby strengthening public confidence in Justice (DUTH 2025).

Finally, reasoning questions serve as a mechanism for ongoing education of judges, thereby contributing to the principle of continuous learning and adaptation. As AI systems undergo development, judges who engage in active and critical reasoning can leverage the benefits of technology without compromising the human factor, as stipulated by European Union legislation (Regulation 2024/1689, recital 61). In summary, the establishment of judges' reasoning can ensure that the use of AI in the administration of Justice remains faithful to the accepted principles of Justice and keeps alive the principles of independence, impartiality, propriety, integrity, equality, competence and diligence (UNODC 2002, Bangalore Principles).

9. Discussion

The application of AI in judicial systems creates new challenges and significant opportunities for the administration of Justice, which can clearly improve its efficiency (OECD 2019). However, what potential contributions might AI make to the field of Justice? Initially, the automation of bureaucratic tasks, case classification, research in legal databases, document processing and automatic translation through large language models (LLM) (European Commission 2025), virtual assistants, and even the monitoring of judicial performance. These are simple applications that are not related to the interpretation of facts and the law and therefore do not fall under the "high-risk" systems (Regulation 2024/1689, Recital 61). The "high-risk" applications have been defined as those which assist the judicial system in its decision-making processes. In such instances, a categorisation system according to European law standards may be employed, resulting in the delineation of subcategories. To illustrate this point, consider the lower risk to fundamental rights posed by simple administrative offence cases resolved with the assistance of AI, compared to civil law cases, where the system automatically calculates the amount of compensation. This occurs because, in this situation, the system circumvents the substantive diagnosis of the case. Conversely, civil cases pose a reduced risk in comparison to that posed by predictive systems in criminal proceedings, which seek to predict the risk of reoffending, the judgement regarding pre-trial detention or the imposition of a sentence (CEPEJ 2018; Myltseva 2019; Aletras et al. 2016; González 2020). In such cases, where the risk to fundamental rights is minimal, there is scope for a more relaxed application of these principles, although not to the extent of complete deactivation, as this could lead to complacency. However, even in criminal proceedings, where algorithms do not play a decisive role in the core judicial decision-making process, but at other stages of the judicial hearing, ethical principles may be subject to less stringent constraints. To illustrate this point, consider the inherent value of a system that automatically evaluates evidence, thereby providing judges with a vivid representation of the evidence at the trial stage. This representation encompasses the depiction of the crime itself (Farber 2025).

AI has the potential to act as a catalyst for enhancing the accessibility, and efficiency of the administration of Justice, provided that the fundamental principles of legality, proportionality, effective access to Justice, strengthening judicial autonomy and gentle adaptation are effectively integrated into the functioning of the judicial system (Sourdin 2021; CEPEJ 2018). The following hypothesis is hereby put forward: if an AI system were to be developed that could assist judges in their deliberations, combining the aforementioned capabilities with a strict adherence to fundamental procedural principles, then this would be of significant benefit to the Justice system. The advantages of this approach are readily apparent.

In any case, the existence of AI is now an indisputable fact in the administration of Justice. The future essentially calls on judges to adapt to the dynamics of AI and to apply it safely for the benefit of the administration of Justice. However, in order to achieve such

a goal, it is first necessary to gain a comprehensive understanding of the way in which it works and its implications, as well as the legal and social consequences of algorithms, especially when they are applied to the narrow core of Justice (DUTH 2025), namely the interpretation of facts and the law (Regulation 2024/1689, Recital 61). The development of a culture of digital judicial ethics is therefore essential for Justice to remain a human-led, transparent, reliable and institutional activity, as is also urged by existing European Union legislation (Regulation 2024/1689, Recital 61).

The notion of automated Justice, which may hold particular appeal in certain circumstances, should not be confined merely to the attempt to maintain a balance between technology and ethics. Conversely, it should establish a dynamic framework that will enable judges to practically comply with the fundamental principles of judicial ethics when utilising these systems (Boddington 2023). The transition from theoretical frameworks to practical applications necessitates the development of specific tools and procedures that will empower judges to exercise individual judgment and assess the alignment of system usage with both the ethics of AI and the established standards of judicial conduct (Ashley 2017; DUTH 2025). Judicial independence, impartiality, decency and integrity must not be undermined by the pressure of "algorithmic dependence". Rather, these values should be strengthened through the continuous education and training of judges on AI issues and their active participation in the shaping of algorithmic tools (Boddington 2023; Nikolinakos 2023). The future of justice will certainly involve AI, which should serve as a support mechanism for judges, not a substitute. It is recommended that AI is employed to enhance transparency, accountability and equal treatment, whilst simultaneously ensuring the possibility of challenging and controlling algorithmic decisions by both judges and parties (CEPEJ 2018; UNESCO 2021). The continuous evaluation of AI systems, alongside the active involvement of judges in the formulation of rules for the use of AI, is considered to be of paramount importance for the successful integration of AI in the Justice system of the future.

Author Contributions: Conceptualization, N.M. and E.T.; methodology, N.M. and A.S.; writing—original draft preparation, N.M.; writing—review and editing, E.T. and A.S.; supervision, A.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research was conducted in the context of FAIR-PReSONS EU project (https://fair-presons.aegean.gr/, accessed on 3 February 2026) no. 101160473, funded within e-JUSTICE program (JUST-2023-JACC-EJUSTICE).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: No new data were created or analyzed in this study.

Acknowledgments: The authors would like to express their gratitude to Konstantinos Kosmatos for his valuable assistance in the completion of this paper, following the passing of our beloved colleague and co-author, Athanassia Sykiotou. DeepL v. 2025 was used to support translation and expression refinement during manuscript preparation. All conceptual, analytical, and interpretative work is solely the authors' own, and all AI-assisted wording was reviewed and approved by the authors.

Conflicts of Interest: The authors declare no conflict of interest.

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