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Justice and Artificial Intelligence

Secção I
Investigação Científica[*]

Justice and Artificial Intelligence

Justiça e Inteligência Artificial

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ABSTRACT: The article is devoted to the study of the use of artificial intelligence in the administration of justice. The article raises important issues of the impact of artificial intelligence on legal processes, the principles of applying artificial intelligence algorithms in justice, controllability of artificial intelligence and liability for artificial intelligence errors. This study is primarily a theoretical justification of the ways in which artificial intelligence can be used in court proceedings, its advantages and disadvantages. Particular attention is paid to the use of artificial intelligence in the justice system of Azerbaijan in order to explore the prospects for introducing AI into justice and analyse the potential pros and cons on the example of introducing AI into the justice system of Azerbaijan. The study concludes that the "weaknesses" of introducing AI algorithms in the justice system are the issues of human rights, privacy and information security, and gaps in legislation that do not keep pace with the development of technology. In general, this study is a comprehensive scientific theoretical work based on current scientific research and analysis of regulatory practice.
KEYWORDS: Justice in the Digital Era; Algorithmic Decision-Making; Ethics of AI Use; Impact of AI on Legal Processes; Liability for AI Errors.

RESUMO: O artigo dedica-se ao estudo da utilização da inteligência artificial na administração da justiça. O artigo levanta questões importantes sobre o impacto da inteligência artificial nos processos judiciais, os princípios de aplicação dos algoritmos de inteligência artificial na justiça, a controlabilidade da inteligência artificial e a responsabilidade por erros da inteligência artificial. Este estudo é, antes de mais, uma justificação teórica das formas como a inteligência artificial pode ser utilizada nos processos judiciais, das suas vantagens e desvantagens. É dada especial atenção à utilização da inteligência artificial no sistema judicial do Azerbaijão, a fim de explorar as perspectivas de introdução da IA na justiça e analisar os potenciais prós e contras do exemplo da introdução da IA no sistema judicial do Azerbaijão. O estudo conclui que os "pontos fracos" da introdução de algoritmos de IA no sistema judicial são as questões dos direitos humanos, da privacidade e da segurança da informação, bem como as lacunas na legislação que não acompanham o desenvolvimento da tecnologia. Em geral, este estudo é um trabalho teórico científico abrangente baseado na investigação científica atual e na análise da prática regulamentar.
PALAVRAS-CHAVE: Justiça na Era Digital; Tomada de Decisões Algorítmicas; Ética da Utilização da IA; Impacto da IA nos Processos Jurídicos; Responsabilidade por Erros de IA.

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Introduction

Today, technological progress is rapidly changing the world[4]. Artificial intelligence (AI) is finding its place in many areas of modern society and is considered one of the greatest achievements of modern technological innovation and science. AI is algorithmic programming that is purposefully applied by humans and loaded onto robots and machines[5].

AI literally means machine intelligence, which is used to facilitate human work by mirroring human qualities such as planning, reasoning, problem solving, speech recognition, thinking, and many other activities; the difference is that it works much faster and more efficiently[6], AI algorithms are transforming the procedures that underpin most legal systems[7].

The legal industry is not immune to the interference of new technologies, and software tools are beginning to influence various aspects of lawyers' work, including tasks that have historically relied on expert human judgement, such as predicting court outcomes.[8]

So, in recent years, the expert community has been increasingly discussing the possibility of using AI in the administration of justice, as well as the replacement of a judge with a universal AI system capable of analysing the actual circumstances of a case, giving them a legal assessment and making an appropriate decision[9]. Some studies point to the Covid-19 pandemic as a stimulating factor that can accelerate the development of mechanisms for AI

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[4] KOLINETS, Lesya. International financial markets of the future: technological innovations and their impact on the global financial system. *Future of Social Science*, vol. 3, n. 1, p. 4-19, 2023. Available from: https://doi.org/10.57125/FS.2023.09.20.01.

[5] ASGAROVA, M. P. Issues of international cooperation in criminal proceedings: Some problems of reform. *Amazonia Investiga*, vol. 52, n. 11, p. 186–194, 2022. https://doi.org/10.34069/AI/2022.52.04.20.

[6] DARSHAN, V. Demystifying the role of artificial intelligence in legal practice (July 2019). *Nirma University Law Journa*l, vol. 8, n. 2, 2019. Available from: https://ssrn.com/abstract=3443000.

[7] HUNTER, Dan; BAGARIC, Mirko; STOBBS, Nigel. A framework for the efficient and ethical use of artificial intelligence in the criminal justice system. *Florida State University Law Review*, vol. 47, n. 749, 2019-2020. Available from: https://heinonline.org/HOL/LandingPage?handle=hein.journals/flsulr47&div=33&id=&page=.

[8] ALARIE, Benjamin; NIBLETT, Anthony; YOON, Albert H. How artificial intelligence will affect the practice of law. *University of Toronto Law Journal*, vol. 68, n. supplement 1, p. 106–124, 2018. Available from: https://utpjournals.press/doi/10.3138/utlj.2017-0052.

[9] YAVUZ, Nilay; KARKIN, Naci; YILDIZ, Mete. (2022). E-justice: A review and agenda for future research. In *Scientific Foundations of Digital Governance and Transformation*, pp. 385-414. Cham: Springer International Publishing, 2022. Available from: https://doi.org/10.1007/978-3-030-92945-9_15.

governance, in particular in public administration and justice[10]. AI is a certain feature of automated systems "to choose and make optimal decisions based on previous experience and analysis of external factors that inherently resemble human intelligence"[11].

AI technologies are currently being used for fraud alerts for banking applications and to improve health diagnostics. Other sectors where such technologies are increasingly being used include law enforcement, judicial decision-making, and border security[12]. An example of the use of AI technologies in the public services sector is the Azerbaijan Service and Assessment Network (ASAN xidmet). ASAN, which means "easy" in English, is a state institution with a network of universal service centres that greatly facilitates the lives of citizens by reducing bureaucracy[13]. However, research lacks depth in certain segments of AI integration, for example, in the justice sector[14].

Undoubtedly, the digitalisation of justice is an inevitable process that meets the requirements of time and technological development. IT support for the judiciary and communication with users of the judicial system (E-JUSTICE) has more than twenty years of history in Europe[15]. The functioning of the judiciary is carried out with the help of Case Management Systems, which are integrated into all procedures of the administration of justice, promising transparency, efficiency and radical changes in work practices, such as paperless courts. AI has already mastered some of the decision-making algorithms of judges, so the prospect of a "robot judge" is no longer considered so fantastic[16]. The impact of such

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[10] GIGUASHVILI, Giuli; MAKASARASHVILI, Tamar. Possibilities of using artificial intelligence in post-pandemic Georgia. *Globalisation and Business*, vol. 6, n. 12, p. 83-87, 2023. https://doi.org/10.35945/gb.2021.12.011.

[11] SKLIARENKO, I. V. Prospects for the use of artificial intelligence in civil justice. *Uzhhorod National University Herald. Series: Law*, vol. 1, n. 81, p. 231-237, 2024. Available from: https://doi.org/10.24144/2307-3322.2024.81.1.36.

[12] ALIYEV, Vahid. Azerbaijan's newfound orientation towards Artificial Intelligence and Robots, 2020. Available from: https://www.researchgate.net/publication/341598034.

[13] Ibid.

[14] DE OLIVEIRA, Leonardo Ferreira; DA SILVA GOMES, Anderson; ENES, Yuri; *et al*. Path and future of artificial intelligence in the field of justice: a systematic literature review and a research agenda. *SN Social Sciences*, vol. 2, n. 9, p. 180, 2022. Available from: https://doi.org/10.1007/s43545-022-00482-w.

[15] BERNHARDT, Wilfried. The use of artificial intelligence in the field of justice. *In*: SZOSTEK, Dariusz; ZAŁUCKI, Mariusz (Orgs.). Internet and New Technologies Law. [s.l.]: Nomos Verlagsgesellschaft mbH & Co. KG, 2021, p. 173–196. Available from: https://doi.org/10.5771/9783748926979-173.

[16] RE, Richard M.; SOLOW-NIEDERMAN, A. Developing artificially intelligent justice. *Stanford Technology Law Review*, vol. 22, n. 2, p. 242, 2019. Available from: https://heinonline.org/HOL/LandingPage?handle=hein.journals/stantlr22&div=8&id=&page=.

technologies on the functioning of justice and the values established by international principles of judicial conduct is mostly positive[17]. The integration of AI into legal systems has brought about a paradigm shift in the legal landscape, presenting a complex interplay of challenges and opportunities for the justice system[18].

AI can be used to optimise court procedures, predict court decisions, and even prevent and deter crime[19]. At the same time, the introduction of AI into the justice system is associated with risks and challenges dictated by the following system features: sensitivity of processes, legal restrictions, ensuring the independence of the judiciary, system design, good user experience, and high interoperability[20]. In this light, the purpose of this article is to explore the prospects of introducing AI into the justice system and analyse the potential pros and cons on the example of the introduction of AI into the Azerbaijani justice system.

Key issues of interaction between AI and justice are modelling and supporting legal decision-making and predicting the outcome of court cases, supporting the legal community by providing AI-based tools to improve access to justice[21], solving procedural delays, reducing the cost and time of litigation[22], studying the role of AI in achieving justice, the issue of access to justice, balance and equality of parties, observance of human rights in the use of AI in justice, in

[17] KARMAZA, Oleksandra O., KOROIED, Sergii O.; MAKHINCHUK, Vitalii M., STRILKO, Valentyna Yu.; IOSYPENKO, Solomiia T. Artificial intelligence in justice. *Linguistics and Culture Review,* vol. 5, n. S4, p. 1413-1425, 2021. Available from: https://doi.org/10.21744/lingcure.v5nS4.1764.

[18] MADAOUI, Nadjia. The impact of artificial intelligence on legal systems: Challenges and opportunities. *Problems of Legality*, vol. 164, no. 1, p. 285-303, 2024. Available from: https://doi.org/10.21564/2414-990X.164.289266.

[19] BLOUNT, Kelly. Seeking compatibility in preventing crime with artificial intelligence and ensuring a fair trial. *Masaryk University Journal of Law and Technology*, vol. 15, n. 1, p. 25-52, 2021. Available from: https://doi.org/10.5817/MUJLT2021-1-2.

[20] YAVUZ, Nilay; KARKIN, Naci; YILDIZ, Mete. (2022). E-justice: A review and agenda for future research. In *Scientific Foundations of Digital Governance and Transformation*, pp. 385-414. Cham: Springer International Publishing, 2022. Available from: https://doi.org/10.1007/978-3-030-92945-9_15.

[21] COLLENETTE, Joe; ATKINSON, Katie; BENCH-CAPON, Trevor. Explainable AI tools for legal reasoning about cases: A study on the European Court of human rights. *Artificial Intelligence*, vol. 317, 103861, 2023. Available from: https://doi.org/10.1016/j.artint.2023.103861.

[22] DE SOUSA, Weslei Gomes; FIDELIS, Rafael Antunes; DE SOUZA BERMEJO, Paulo Henrique; DA SILVA GONÇALO, Ana Gersica; DE SOUZA MELO, Bruno. Artificial intelligence and speedy trial in the judiciary: Myth, reality or need? A case study in the Brazilian supreme court (STF). *Government Information Quarterly*, vol. 39, n. 1, 101660, 2022. Available from: https://doi.org/10.1016/j.giq.2021.101660.

particular the right to a fair trial[23], determining the scope of legal personality of AI and the likelihood of liability[24].

There is no doubt that AI can improve efficiency and accuracy through its ability to analyse data, recognise patterns, and allocate resources efficiently[25]. Thanks to its ability to detect patterns and make informed decisions, AI is changing the administration of law and justice, in particular through the success of technology that supports access to the law, legal empowerment and a high degree of transparency.[26] In practice, the problem of creating AI is, on the one hand, at the intersection of computer technology, and on the other hand, with neurophysiology, cognitive and behavioural psychology.

Therefore, some researchers argue that guarantees are needed to make AI reliable, social, responsible, humane, ethical.[27] The integration of AI into our lives and its constant development give rise to problems in its legal regulation, the acquired abilities require determining its place in the legal order and a clear definition of its legal status[28]. Moreover, the introduction of new communication technologies and data analytics may change the conditions for the establishment and development of both procedures and the judicial process itself (both civil and criminal)[29].

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[23] TRANG, Nguyen Thi Thu, LINH, Nguyen Hoai; HOANG, Nguyen Thi Cam, KIET, Pham Vo Tuan, LOAN, Luu Thi Ngoc; PHUC, Nguyen Thi Hoai. The right to a fair trial when applying artificial intelligence in criminal justice - lessons and experiences for Vietnam. *Journal of Law and Sustainable Development*, vol. 12, n. 3 (March), e601, 2024. Available from: https://doi.org/10.55908/sdgs.v12i3.601.

[24] KARMAZA, Oleksandra O., KOROIED, Sergii O.; MAKHINCHUK, Vitalii M., STRILKO, Valentyna Yu.; IOSYPENKO, Solomiia T. Artificial intelligence in justice. *Linguistics and Culture Review*, vol. 5, n. S4, p. 1413-1425, 2021. Available from: https://doi.org/10.21744/lingcure.v5nS4.1764.

[25] CHAUHAN, Divesh. Artificial intelligence in criminal justice system. Ensuring protection of human rights, fairness and final, 2024. Available from: https://www.researchgate.net/publication/379994914_Artificial_Intelligence_in_Criminal_Justice_System_Ensuring_protection_of_Human_Rights_Fairness_andfinal.

[26] BEX, Floris; PRAKKEN, Henry; VAN ENGERS, Tom; et al. Introduction to the special issue on Artificial Intelligence for Justice (AI4J). *Artificial Intelligence and Law*, vol. 25, n. 1, p. 1–3, 2017. Available from: http://link.springer.com/10.1007/s10506-017-9198-5.

[27] VERHEIJ, Bart. Artificial intelligence as law: Presidential address to the seventeenth international conference on artificial intelligence and law. *Artificial Intelligence and Law*, vol. 28, n. 2, p. 181–206, 2020. Available from: https://doi.org/10.1007/s10506-020-09266-0.

[28] AHMADOV, Ali. The legal status and personality of artificial intelligence, 2024. Available from: https://www.researchgate.net/publication/379815482_The_Legal_Status_and_Personality_of_Artificial_Intelligence/citation/download.

[29] AXPE, Miguel Ramón Viguri. Ethical Challenges from Artificial Intelligence to Legal Practice. *In*: SANJURJO GONZÁLEZ, Hugo; PASTOR LÓPEZ, Iker; GARCÍA BRINGAS, Pablo; *et al* (Orgs.). *Hybrid Artificial Intelligent Systems*. Cham: Springer International Publishing, 2021, vol. 12886, p. 196–206. Available from: https://doi.org/10.1007/978-3-030-86271-8_17.

Methods

The study of the use of AI in justice is a comprehensive scientific theoretical work based on current scientific research and analysis of regulatory practice. For the purpose of the study, the author chose scientific research in 2018-2024, and the search was carried out using the Web of Science, Google Scholar, Science Direct, and ResearchGate platforms. As a result, the author selected 35 scientific studies that have a wide geography, covering the use of AI in the United States, Saudi Arabia, China, and, of course, Azerbaijan. The selected publications have been processed using general scientific research methods: analysis, synthesis, comparison, comparison, modelling.

The theoretical work is based on the dialectical method, which allowed for a thorough analysis of the concept of AI in justice, its key advantages and disadvantages, and analysed the ways in which AI is used in court activities. The theoretical basis of the study was developed using the method of thematic analysis, and theoretical foundations were summarised for each issue under study and interim conclusions were drawn. The author suggests areas for future research that go beyond the scope of this paper but require scientific substantiation within the framework of a comprehensive approach to solving the problematic issues of AI integration into justice.

Results and discussion

The Concept of AI in Justice. The Impact of AI on Legal Processes

AI has changed the face of modern law in a way that no other scientific and technological development in recent history has been able to do [30]. AI is a term used to describe how computers can perform tasks that normally require human intelligence, such as speech and object recognition, data-driven decision-making, and language translation, so AI mimics certain operations of the human mind. AI can be classified according to different criteria, for example, based on the intelligence it demonstrates, there are analytical, human-inspired and humanised intelligence, which corresponds to cognitive, emotional and social intelligence. In

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[30] SHAHID, Anum; QURESHI, Gohar Masood; CHAUDHARY, Faiza. Transforming legal practice: The role of AI in modern law. *Journal of Strategic Policy and Global Affairs*, vol. 4, n. 01, 2023. Available from: https://jspga.com/index.php/jspga/article/view/21.

addition, AI can also be classified according to its evolutionary stage, namely: artificial narrow, general and superintelligence[31].

AI in judicial proceedings can perform the main function of administering direct justice, provided that such technology is highly developed; and the auxiliary function of automating routine tasks, processing large amounts of information or analysing data[32]. Lawyers are already using AI for processes such as reviewing documents during court proceedings, analysing contracts to determine whether they meet predefined criteria, conducting legal research, and predicting case outcomes. The introduction of artificial intelligence tools in the justice sector has several implications, for example, the availability of court proceedings data carries potential privacy risks or the use of predictive technologies may be accompanied by data protection and transparency issues[33], in addition, there is a debate about the ethical implications of the use of AI in justice[34].

There are various technological solutions for the use of AI in the judicial system. For example, the TaSbeeb judgement support system developed for lawyers in Saudi Arabian courts is a significant step towards a more efficient and accurate judgement-making process in the Arab legal system[35]. Torelik is an electronic information system of courts in Kazakhstan that uses AI tools to automatically distribute court cases among judges to negate the powers of court presidents in matters related to judicial decision-making[36].

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[31] GULIYEV, Ibrahim Gadim; JABBAROVA Aynur Imran; MAMMADOVA Sevar Momin; SALEHZADEH, Gulchohra Saleh. Evaluación de las oportunidades de aplicación de la inteligencia artificial en el gobierno digital en Azerbaiyán. *Revista Universidad y Sociedad*, vol. 15, n. 5, p. 38-48, 2023. Available from: http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S2218-36202023000500038&lng=es&nrm=iso&tlng=en.

[32] SKLIARENKO, I. V. Prospects for the use of artificial intelligence in civil justice. *Uzhhorod National University Herald. Series: Law*, vol. 1, n. 81, p. 231-237, 2024. Available from: https://doi.org/10.24144/2307-3322.2024.81.1.36.

[33] LUPO, Giampiero. Regulating (Artificial) intelligence in justice: how normative frameworks protect citizens from the risks related to ai use in the judiciary. *European Quarterly of Political Attitudes and Mentalities*, vol. 8, n. 2, p. 75–96, 2019. Available from: https://nbn-resolving.org/urn:nbn:de:0168-ssoar-62463-8.

[34] LUPO, Giampiero. The ethics of Artificial Intelligence: An analysis of ethical frameworks disciplining AI in justice and other contexts of application. *Oñati Socio-Legal Series*, vol. 12, n. 3, p. 616–655, 2022. Available from: https://opo.iisj.net/index.php/osls/article/view/1366/version/2304.

[35] ALMUZAINI, Huda A.; AQIL M. Azmi. TaSbeeb: A judicial decision support system based on deep learning framework. *Journal of King Saud University - Computer and Information Sciences*, vol. 35, n. 8, 101695, 2023. Available from: https://doi.org/10.1016/j.jksuci.2023.101695.

[36] NURKEY, Aisulu, YEDILKHAN, Didar; KOSHERBAYEVA, Aigul. Digitalisation of legislative decision-making processes in Kazakhstan on the base of "Torelik" information system". In *2022*

The Supreme People's Court of China has proposed the concept of a "smart court"[37] China's online litigation platform "Mobile Micro Court", which aims to promote the modernisation of judicial systems by making full use of AI technologies[38]. The ROSS intelligence, an advanced electronic brain, also called a robot lawyer, is used by most law firms in the United States, with KIRA, Ebrevia, and Lawgeex systems using real-time editing tools to help lawyers monitor changes made by their colleagues to the contract[39].

The COMPAS risk assessment algorithm is used in the United States to inform courts about the likelihood that offenders will reoffend[40]. The European Union, through its proposed AI Act (AIA), seeks to develop harmonised standards that incorporate abstract normative concepts such as transparency, fairness, and accountability[41]. The common feature of the above examples is that they take place without a clear strategy and methodological basis, which creates some problems in the concepts of legislation in the context of technological development.[42]

The benefits of AI include increased efficiency, accuracy and impartiality in judicial proceedings, while the disadvantages include concerns about potential bias, ethical difficulties and risks to privacy and human rights. The potential advantages of AI over human activity also include the speed of information processing and decision-making, as well as the absence of emotional

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International Conference on Smart Information Systems and Technologies (SIST). Nur-Sultan, 2022. Available from: https://doi.org/10.1109/SIST54437.2022.9945742.

[37] MINGTSUNG, Chen; SHULING, Li. Research on the application of artificial intelligence technology in the field of Justice. *Journal of Physics: Conference Series*, vol. 1570, n. 1, p. 012047, 2020. Available from: https://iopscience.iop.org/article/10.1088/1742-6596/1570/1/012047/meta.

[38] WANG, Liyuan. Application of information technology in judicial field: The development model of online litigation in China. *Computer Law & Security Review*, vol. 52, 105936, 2024. Available from: https://doi.org/10.1016/j.clsr.2024.105936; SHI, Jiahui. Artificial Intelligence, Algorithms and Sentencing in Chinese Criminal Justice: Problems and Solutions. *Criminal Law Forum*, vol. 33, n. 2, p. 121–148, 2022. Available from: https://doi.org/10.1007/s10609-022-09437-5.

[39] DARSHAN, vol. Demystifying the role of artificial intelligence in legal practice (July 2019). *Nirma University Law Journal,* vol. 8, n. 2, 2019. Available from: https://ssrn.com/abstract=3443000.

[40] RYBERG, Jesper. Criminal justice and artificial intelligence: How should we assess the performance of sentencing algorithms? *Philosophy & Technology*, vol. 37, n. 1, p. 9, 2024. Available from: https://doi.org/10.1007/s13347-024-00694-3.

[41] LAUX, Johann, WACHTER, Sandra; MITTELSTADT, Brent. Three pathways for standardisation and ethical disclosure by default under the European Union artificial intelligence act. *Computer Law & Security Review*, vol. 53, 105957, 2024. Available from: https://doi.org/10.1016/j.clsr.2024.105957.

[42] PETIT, Nicolas. Law and Regulation of artificial intelligence and robots - conceptual framework and normative implications. *SSRN Electronic Journal*, 2017. Available from: http://www.ssrn.com/abstract=2931339.

assessment of facts, which serves as a higher degree of objectivity and impartiality[43]. Furthermore, it is important to emphasise the importance of interdisciplinary cooperation and a comprehensive regulatory framework to ensure the intelligent and impartial integration of AI technologies into the justice system[44]. Artificial intelligence systems should be designed in such a way that they are sufficiently transparent to enable the user to interpret and use the system's output [45]. The advantages and disadvantages of using AI in justice are shown in more detail in Table 1.

Table 1. Pros and cons of AI in justice

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Saving time and money	Information confidentiality issues
AI fuels investment in law enforcement	Gaps in the legislative regulation of AI
Facilitating access to justice	Risks of job losses
Democratisation and transparency of judicial procedures	Mechanisms for control and responsibility for decisions
Reduced administrative burden	Issues of human rights violations
Integration of different databases	Issues of information and technical support of courts
Reducing the burden on the courts	

Source: authors' own development

Therefore, AI can perform functions of forecasting, risk assessment, evidence analysis, and judicial decision-making[46], and can also be used to ensure justice, manage investigations and read emotions from facial features and

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[43] BAGARIC, Mirco; SVILAR, Jennifer; BULL, Melissa; HUNTER, Dan; STOBBS, Nigel. The solution to the pervasive bias and discrimination in the criminal justice system: transparent and fair artificial intelligence. *American Criminal Law Review*, vol. 59, n. 95, 2022. Available from: https://heinonline.org/HOL/LandingPage?handle=hein.journals/amcrimlr59&div=7&id=&page=.

[44] VARGAS-MURILLO, Alfonso Renato; DE LA ASUNCION PARI-BEDOYA, Ilda Nadia Monica; TURRIATE-GUZMAN, Adriana Margarita; DELGADO-CHÁVEZ, Cintya Amelia; SANCHEZ-PAUCAR, Franshezka. Transforming justice: Implications of artificial intelligence in legal systems. *Academic Journal of Interdisciplinary Studies*, vol. 13, n. 2 (March), p. 433, 2024. Available from: https://doi.org/10.36941/ajis-2024-0059.

[45] FINK, Melanie. The EU artificial intelligence act and access to justice. EU Law Live, 10 May 2021. Available from: https://eulawlive.com/.

[46] VARGAS-MURILLO, Alfonso Renato; DE LA ASUNCION PARI-BEDOYA, Ilda Nadia Monica; TURRIATE-GUZMAN, Adriana Margarita; DELGADO-CHÁVEZ, Cintya Amelia; SANCHEZ-PAUCAR, Franshezka. Transforming justice: Implications of artificial intelligence in legal systems. *Academic Journal of Interdisciplinary Studies*, vol. 13, n. 2 (March), p. 433, 2024. Available from: https://doi.org/10.36941/ajis-2024-0059.

facial expressions[47]. In turn, the author provides an interpretation of various areas of AI use in justice in Table 2.

Table 2. Areas of AI application in justice

Predicting court decisions	conducting legal research and forecasting the outcome of a case; for lawyers - success forecasts for the outcome of a dispute based on criteria inserted by the user
Online court dispute resolution	An algorithm for resolving court disputes based on the knowledge gained during previous court proceedings; The services can also be used in court proceedings under the supervision of judges, until they decide on the merits of the dispute.
Analysis of case law	An algorithm for processing previous court decisions to search by user-defined criteria, searching for similar legal constructions and court decisions.
Big Data Analytics	An algorithm for the centralised collection of information about the parties to a case, for subsequent storage by multiple agencies and services and subsequent review by a judge, sometimes within a very short period of time (e.g. in the context of expedited court procedures)
To prevent criminal acts	An algorithm for preventive justice by identifying possible crime scenes or possible criminals
Relapse assessment	An algorithm for analysing information about a person accused of committing a crime to determine the likelihood of re-committing the crime by that person.
Assistive technologies	Speech-to-text, automatic translation, face and voice recognition, decision templates, and more.

Source: Authors' own elaboration based on[48]

The use of AI in the judicial system of Azerbaijan

Following global trends, Azerbaijan is widely integrating AI into various spheres of society: entrepreneurship, public administration, medicine, security,

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[47] KABOL, Ali. The use of artificial intelligence in the criminal justice system (a comparative study). *Webology*, vol. 19, p. 593, 2022. Available from: https://www.researchgate.net/publication/365027297_The_Use_Of_Artificial_Intelligence_In_The_Criminal_Justice_System_A_Comparative_Study.

[48] SPYROPOULOS, Fotios; ANDROULAKI, Evangelia. Aspects of artificial intelligence on e-justice and personal data limitations. *Journal of Legal, Ethical and Regulatory Issues*, vol. 26, n. 3, p. 1-8, 2023. Available from: https://www.researchgate.net/publication/378316141_Aspects_of_artificial_intelligence_on_e-justice_and_personal_data_limitations.

industry, etc. In particular, the use of AI in the justice sector has achieved good results in recent years. In 2020, the Decree of the President of the Republic of Azerbaijan approved the Regulation on the Electronic Court Information System, whose software includes the use of AI in judicial activities[49].

The Azerbaijani judicial system operates through the AZEMIS (Azerbaijan Electronic Judicial Information System), which uses AI algorithms to manage court cases. In particular, AI algorithms are used to expedite the procedure for consideration of indisputable small claims through the automated e-Order system.
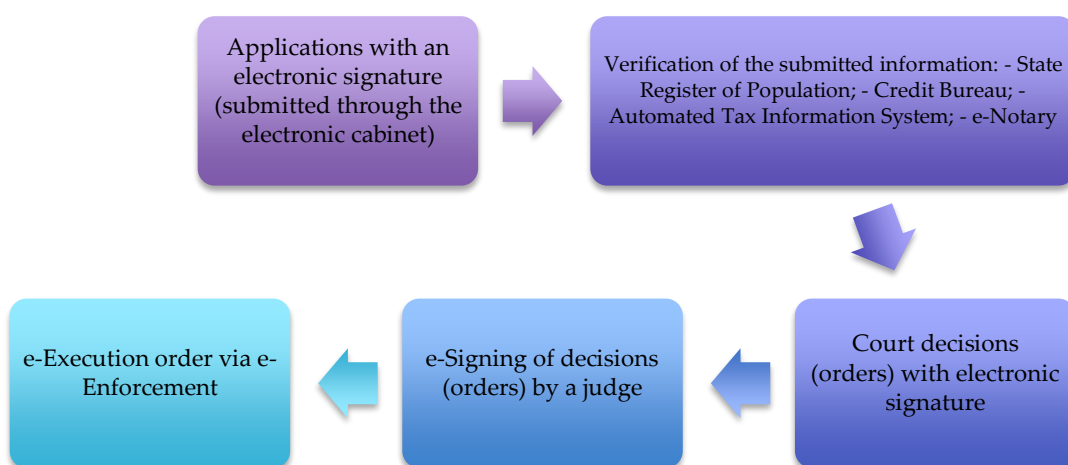

Figure 1. The algorithm for considering indisputable small claims through the e-Order automated system

Source: authors' elaboration based on[50]

Among the positive qualities of e-Order proceedings are the following: consideration of cases within 1 working day, about 7% of appealed court decisions, registration of more than 60 business entities in the system, increased trust in the courts, acceleration of the enforcement process through e-Enforcement, cost and time savings for the business environment (legal and

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[49] PRESIDENT OF THE REPUBLIC OF AZERBAIJAN. Decree on approval of the "Regulation on the information system "Electronic Court", 2020. Available from: http://www.e-qanun.gov.az/framework/45080.

[50] GURBANOV, Ramin. Judicial Services and Smart Infrastructure Project. Azerbaijan: e-Courts and the joint achievements in digitalisation of justice, 2022. Available from: https://thedocs.worldbank.org/en/doc/3ecf7262788a3ec69c8a45bbd3342a28-0080022021/related/29-06-21-Presentation-e-Court-WB-Dr-Ramin-Gurbanov.pdf.

postal services)[51]. Thus, AI has a positive impact on task automation, increases the efficiency of legal research and speeds up the drafting of documents. On the other hand, it poses risks, such as the provision of fictitious and incorrect facts through distortion and data privacy violations[52].

The scientific community raises many questions about the shortcomings of legal regulation of the use of AI in justice. For example, the Law of the Republic of Azerbaijan "On Information, Informatisation and Information Protection" does not contain a definition of AI or "AI system", and there is no such provision in sectoral laws. Indeed, the concept of "information system" is reflected in the legislation. However, it would be incorrect to group AI systems under the term "information system"

Another cornerstone of the introduction of AI algorithms in court proceedings in Azerbaijan is the issue of data protection and privacy. Azerbaijan's data protection laws currently consist of three main pieces of legislation: The Law on State Secrets, the Law on Data, Data Processing and Protection, and the Law on Personal Data. In addition, Azerbaijan is a party to the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (Convention 108) and its Additional Protocol, which requires the establishment of an independent supervisory authority as an important element of the data protection system, and has signed the Ethical Charter on the use of AI in judicial systems and their environment[53].

Responsibility for AI decision-making and errors

The digitalisation of the justice system takes place on two levels: through "traditional" digital technologies (simple online forms and e-justice platforms, Case Management Systems) and AI-based systems (online court, speech-to-text, recidivism assessment, court decision prediction). On the other hand, the work of AI in drafting court decisions is impossible separately from a human

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[51] Ibid.

[52] NAGHIYEV, Rufat. Lawyer's artificial intelligence assistant and rules of professional conduct: Comparative analysis of Azerbaijani and US legislation. *Baku State University Student Law Journal*, vol. 10, n. 1, 2024. Available from: https://lr.bsulawss.org/wp-content/uploads/2024/04/10BSULawRev1.4.pdf.

[53] COUNCIL OF EUROPE. Action Plan for Azerbaijan 2022-2025 CM(2022)21 1 February 2022 approved by the Committee of Ministers of the Council of Europe on 16 February 2022 (CM/Del/Dec(2022)1425/2.3). 2022. Available from: https://rm.coe.int/action-plan-azerbaijan-2022-2025-eng/1680a59aa3.

judge; existing algorithms do not allow AI to make "machine decisions" (court acts) independently, without providing legal assessment and qualification by a human judge[54].

This leads to the conclusion that the purpose of using AI in court cases is not to replace lawyers, but to provide support by identifying problems and indicating the likely consequences of the facts of the case[55], providing automated computerised assessments that either fully determine the outcome of a decision or at least influence it[56].

The use of AI does not represent a decision to take power out of human hands, but rather a new way of using human power by making justice central to its conscientious activity[57]. AI should be used as an auxiliary tool for the work of a judge, not as a replacement.

Responsible use of AI in justice means that AI algorithms should comply with the basic principles of justice and should not lead to human rights violations[58]. The introduction of AI into judicial proceedings should be based primarily on the principles of the rule of law, respect for fundamental human rights, respect for honour and dignity, equality before the law and the court, proportionality, competitiveness of the parties, transparency, impartiality and fairness[59]. AI cannot completely replace judges, but its implementation will help optimise the work of judges and courts.

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[54] KARMAZA, Oleksandra O., KOROIED, Sergii O.; MAKHINCHUK, Vitalii M., STRILKO, Valentyna Yu.; IOSYPENKO, Solomiia T. Artificial intelligence in justice. *Linguistics and Culture Review*, vol. 5, n. S4, p. 1413-1425, 2021. Available from: https://doi.org/10.21744/lingcure.v5nS4.1764.

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[56] SURDEN, Harry. Artificial intelligence and law: an overview. *Georgia State University Law Review*, vol. 35, 2019, U of Colorado Law Legal Studies Research Paper No. 19-22, Available from: https://ssrn.com/abstract=3411869.

[57] RAFANELLI, Lucia M. Justice, Injustice, and artificial intelligence: lessons from political theory and philosophy. *Big Data & Society*, vol. 9, n. 1 (January), 2022. Available from: https://doi.org/10.1177/20539517221080676.

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[59] MATULIENĖ, Snieguolė; SHEVCHUK, Viktor; BALTRŪNIENĖ, Jurgita. Artificial intelligence in law enforcement and justice bodies: Domestic and European experience. *Theory and Practice of Forensic Science and Criminalistics*, vol. 29, n. 4, p. 12-46, 2023. Available from: https://doi.org/10.32353/khrife.4.2022.02.

The ethics of using AI in justice

The question of how to integrate ethics into AI technologies is one of the challenges facing the scientific community and legislators in order to harmoniously integrate AI into the justice system[60]. In particular, the symbiosis of AI and ethics in terms of privacy and social justice is considered[61], given that most codes of ethics were drawn up before the introduction of AI in the justice system[62].

The inter-integration of technology and ethics in modern society is expressed in several key dimensions: AI as the basis of a new ethical paradigm, transformation of ethics under the influence of AI, balance and autonomy of innovative technologicality and traditional morality[63].

The European Ethical Charter on the use of artificial intelligence (AI) in judicial systems and their environment, adopted by the European Commission on the Efficiency of Justice in 2018, states that AI in judicial proceedings can be used to improve search engines (in the context of case law); resolve disputes online; assistance in drafting procedural acts; analysis and forecasting; classification of contracts according to various criteria and identification of discrepancies or incompatible provisions; informing or supporting parties in court proceedings through "Chatbots"[64].

The European Ethical Charter on the use of artificial intelligence (AI) in judicial systems and their environment has identified the following key principles to be followed in the field of AI and justice:

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[60] HERMANSYAH, Muhammad; NAJIB, Ainun; FARIDA, Any; SACIPTO, Rian; RINTYARNA, Bagus Setya. Artificial intelligence and ethics: Building an artificial intelligence system that ensures privacy and social justice. *International Journal of Science and Society,* vol. 5, n. 1, p. 154-168, 2023. Available from: https://doi.org/10.54783/ijsoc.v5i1.644.

[61] PASHA, A. M. Criminal procedure and forensic aspects of mutual legal assistance between states in criminal matters: Experience of Ukraine and the Republic of Azerbaijan. *Cuestiones Políticas*, vol. 40, n. 72, p. 591-607, 2022. https://doi.org/10.46398/cuestpol.4072.35.

[62] YAMANE, Nicole. Artificial intelligence in the legal field and the indispensable human element legal ethics demands. *Georgetown Journal of Legal Ethics*, vol. 33, n. 877, 2020. Available from: https://heinonline.org/HOL/LandingPage?handle=hein.journals/geojlege33&div=44&id=&page=.

[63] RAKHIMOV, Tokhir. Research on moral issues related to the use of artificial intelligence in modern society. *Future Philosophy*, vol. 2, n. 2, p. 30-43, 2023. Available from: https://doi.org/10.57125/FP.2023.06.30.03.

[64] COUNCIL OF EUROPE. European ethical charter on the use of artificial intelligence (AI) in judicial systems and their environment, 2018. Available from: https://www.coe.int/en/web/cepej/ethical-charter-on-ai1.

● The principle of respect for fundamental rights: ensuring that the development and implementation of AI tools and services are compatible with fundamental rights;

● The principle of non-discrimination: the specific prevention of the development or aggravation of any discrimination between individuals or groups of individuals;

● Quality and Security Principle: to process judgements and data using certified sources and intangible data with models developed on an interdisciplinary basis in a secure technological environment;

● The principle of transparency, impartiality and fairness: make data processing methods accessible and understandable, allow external audit;

● The "user-controlled" principle: eliminates a prescriptive approach and ensures that users are informed participants and in control of their choices[65].

This list is sufficient to apply the "ethical compass" in court proceedings, in particular, with the use of AI technologies. However, there is an ongoing discussion about the need to revise the legal doctrine and the foundations of justice in connection with the use of AI technology[66]. The e-justice paradigm developed in the EU aims to enable new digital tools and technological systems to improve the administration of justice, especially in relation to cross-border litigation arising from the application of fundamental human rights and freedoms[67].

The use of AI in criminal justice deserves special attention, the use of advanced technologies is becoming a new paradigm in police work[68], criminal justice and the penitentiary system. The algorithms promise to predict offender behaviour, identify potentially dangerous individuals, and support crime

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[65] COUNCIL OF EUROPE. European ethical charter on the use of artificial intelligence (AI) in judicial systems and their environment, 2018. Available from: https://www.coe.int/en/web/cepej/ethical-charter-on-ai1.

[66] SKLIARENKO, I. V. Prospects for the use of artificial intelligence in civil justice. *Uzhhorod National University Herald. Series: Law*, vol. 1, n. 81, p. 231-237, 2024. Available from: https://doi.org/10.24144/2307-3322.2024.81.1.36.

[67] COVELO DE ABREU, Joana. The Role of Artificial Intelligence in the European e-Justice Paradigm – Suiting Effective Judicial Protection Demands. In: MOURA OLIVEIRA, Paulo; NOVAIS, Paulo; REIS, Luís Paulo (Orgs.). *Progress in Artificial Intelligence*. Springer International Publishing, 2019, vol. 11804, p. 299–308. Available from: https://doi.org/10.1007/978-3-030-30241-2_26 .

[68] BLOUNT, Kelly. Using artificial intelligence to prevent crime: implications for due process and criminal justice. *AI & SOCIETY*, 2022. Available from: https://doi.org/10.1007/s00146-022-01513-z.

investigations.[69] The integration of AI into the criminal justice system has sparked widespread debate due to concerns about human rights violations and its impact on fairness and due process[70]. For example, the use of AI algorithms designed to provide sentencing recommendations in individual criminal cases has already become a reality in some jurisdictions and given the clear intentions to use AI in criminal justice practice, it is certainly very likely that the use of such technological tools will increase in the near future[71].

In the field of criminal justice, in order to ensure the right to a fair trial in the use of AI, it is further proposed to systematically integrate the right to a fair trial at every stage of the design, development, implementation and ongoing monitoring of products, services and systems that use AI[72]. AI has the potential to be a permanent part of criminal justice, assisting investigations and enabling criminal justice professionals to better maintain public safety[73].

Already today, the use of AI technology provides litigants with better opportunities to exercise their rights and obligations[74]. We agree with the statement that when AI is integrated into the functioning of the main institutions of the state, the norms that apply to state institutions also apply to AI systems[75]. AI systems should be created and used with respect for fundamental principles such as respect for human rights and freedoms, legitimate interests, equality,

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[69] SIMMLER, Monika; BRUNNER, Simone; CANOVA, Giulia; *et al*. Smart criminal justice: exploring the use of algorithms in the Swiss criminal justice system. *Artificial Intelligence and Law*, vol. 31, n. 2, p. 213–237, 2023. Available from: https://doi.org/10.1007/s10506-022-09310-1.

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[72] TRANG, Nguyen Thi Thu, LINH, Nguyen Hoai; HOANG, Nguyen Thi Cam, KIET, Pham Vo Tuan, LOAN, Luu Thi Ngoc; PHUC, Nguyen Thi Hoai. The right to a fair trial when applying artificial intelligence in criminal justice - lessons and experiences for Vietnam. *Journal of Law and Sustainable Development*, vol. 12, n. 3 (March), e601, 2024. Available from: https://doi.org/10.55908/sdgs.v12i3.601.

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[74] QUEUDOT, Marc; MEURS, Marie-Jean. Artificial Intelligence and Predictive Justice: Limitations and Perspectives. *In*: MOUHOUB, Malek; SADAOUI, Samira; AIT MOHAMED, Otmane; *et al* (Orgs.). *Recent Trends and Future Technology in Applied Intelligence*. Cham: Springer International Publishing, 2018, vol. 10868, p. 889–897. Available from: https://doi.org/10.1007/978-3-319-92058-0_85.

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tolerance and humanism. At all stages of the process of data collection, processing and use of AI systems, no deviations that may threaten the personal safety of people should be allowed, and people should be able to control all processes.

Conclusions

AI is one of the greatest technological challenges of our century. While it offers significant opportunities for societies and individuals, it also affects universally recognised standards such as human rights, democracy and the rule of law. Given the results already achieved, in particular in the Azerbaijani judicial system, we conclude that AI has the potential to make the justice system more efficient, faster and of higher quality, but this requires certain compromises. The results of this study indicate that the "weaknesses" of the introduction of AI algorithms in the justice system are the issues of human rights, privacy and information security, and gaps in legislation that do not keep pace with the development of technology. In this context, we support the thesis that the norms of national and international legislation regulate relations between individuals, but with the development of AI, another plane of interaction appears – "man-machine"[76].

Certain positive developments have been identified, for example, the adoption of the European Ethical Charter on the use of artificial intelligence (AI) in judicial systems and their environment, which regulates the ethical issues of judges' work with AI algorithms. The issues of controlled artificial intelligence and its legal personality in the administration of justice remain open, which may serve as a basis for further research.

With regard to the use of AI in the Azerbaijani judiciary, the country has the opportunity to become a global leader in advanced technologies; government initiatives, cooperation with international organisations, and investment in AI research and development are contributing to the development of AI in the Azerbaijani justice system.

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