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**The Procedural Forms of the Use of Artificial Intelligence Elements
in a Modern Commercial and Civil Litigation**

Dissertation summary
for the purpose of obtaining academic degree
Doctor of Philosophy in Law

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Doctor of Science in Law,
Associate Professor

Moscow - 2024

The thesis was completed at the School of International Law
of the Faculty of Law of the National Research University "Higher School of
Economics"

The text of the thesis is deposited and available
on the website of the Higher School of Economics: https://www.hse.ru/sci/diss

5.1.3 – Private Law (Civilistic) Sciences

ABSTRACT

The relevance of this research lies in the need for more legal papers on the issues of using computer technologies in judicial proceedings. As artificial intelligence (AI) systems continue to advance, there is a growing need to address their potential impact on judicial core elements such as the goals and objectives of the judiciary and judicial principles. Various countries are trying to implement AI technologies into judicial dispute resolution; these processes are progressing intensively, but there is still a significant gap in the existing legal literature on this topic.

This dissertation examines the impact of AI systems' use in courts on the core values of judicial proceedings. It explores whether and in which forms the use of AI by judges in modern civil and commercial litigation is admissible in terms of its impact on the perception and implementation of the goals, objectives and principles of legal proceedings.

A growing number of scholars are analysing the implementation of AI technologies in litigation. However, these research works primarily concentrate on the possible usage of AI systems in courts and other general issues, with only a few papers devoted to the deep analysis of legal risks associated with AI-enhanced judicial decision-making.

This research contributes to the scholarly discussion on the admissibility of AI-augmented adjudication in terms of the core values of the judicial systems. It examines the judicial principles in the context of Russian civil and commercial litigation and suggests that the use of AI impacts various principles differently. For one group of principles, AI implication empowers their realisation, but for others, AI usage requires rethinking and restatement.

The summary below is the significantly shortened version of the dissertation, originally written and submitted for public defence in Russian.

Keywords: artificial intelligence; AI in courts; digital courts; robot judge; future of justice; AI-enabled decision-making; AI-augmented adjudication.

ACKNOWLEDGEMENTS

I would like to express my most profound appreciation to my academic supervisor, Professor M. Galperin, who made this dissertation real. We worked together on the materials for this dissertation over five years, during which he not only helped with the research strategy, its drafting, and structuring but also supported me through all the challenges a young researcher faces.

I am also profoundly grateful to my colleagues from the Faculty of Law at HSE University, who enriched my dissertation in its final stages and provided their aid in its procession to the public defence. First of all, I would like to personally thank Professor V. Rusinova, the head of the School of International Law, where I was studying as a doctoral student and completed this dissertation. A number of reviewers and commentators produced an enormous impact on this dissertation, namely A. Argunov, L. Bardin, D. Boklan, M. Filatova, D. Krymskiy, P. Lomakina, M. Pavlova, A. Petrenko, L. Prokudina, Yu. Romashev, L. Soldatova, and V. Starzhenetskiy.

I should also acknowledge the contribution of my professors, who helped me become a qualified lawyer by sharing their expertise and exceptional examples of professional behaviour in different situations. Among many others, I am pleased to mention such outstanding scholars and professionals as T. Morschakova, G. Bogush, A. Didikin, A. Kovler, and S. Pashin, who tremendously enhanced my educational experience.

I thank my former colleagues from the Institute for Law in the Digital Environment at HSE University, where we jointly conducted impactful research on the various issues of AI implications. I am incredibly grateful to the head of this Institute, R. Ibragimov, and my supervisors there, S. Chekhovskaya and V. Naumov, for their trust and willingness to help.

Finally, I would like to thank all my colleagues from several law firms where I was working during these years and my friends, who treated me with the understanding of my academic intentions and obligations.

Introduction

Informational technologies, including those related to artificial intelligence (AI), have rapidly developed in many spheres of life. In recent years, chatbots and voice assistants with natural dialogue abilities, systems of automated stock trading, systems of humanless banking services, and many other examples have been developed.

Recent research in different countries has shown that one such AI system, GPT-4, can be successfully used for legal text analyses. A computer can pass with outstanding results a complex American bar exam, which includes not only extensive tests but also developed essays on different legal matters.[1] Scientists argue that GPT-4 is also capable of annotating court decisions and interpreting legal concepts on the level of well-educated law school students.[2]

Breakthroughs in hardware and software development, along with the growth in cloud technologies and big data usage, have forced AI proliferation forward over the last few decades.[3] In a number of jurisdictions, enthusiasts are trying to implement such technologies to automatise judicial decision-making.

The importance of this topic has been recognised on the international level. For instance, in 2018, the European Commission for the Efficiency of Justice (CEPEJ) admitted the rising value of AI in modern societies and the anticipated benefits of using AI for the efficiency and quality of justice.[4] Some researchers even say that the beginning of using AI technologies in courts can be named as

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[1] *Katz D. M., Bommarito M. J., Shang Gao S., Arredondo P. D.* GPT-4 Passes the Bar Exam. Preprint. March 15, 2023. Accessed August 16, 2023 from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4389233. P. 17.

[2] *Savelka J., Ashley K. D., Gray M. A., Westermann H., Xu H.* Can GPT-4 Support Analysis of Textual Data in Tasks Requiring Highly Specialized Domain Expertise? Preprint. June 24, 2023. Accessed August 15, 2023 from https://arxiv.org/abs/2306.13906. P. 10.

[3] *Antebi L.* What is Artificial Intelligence? / Artificial Intelligence and National Security in Israel. Institute for National Security Studies. 2021. Accessed July 21, 2023 from http://www.jstor.org/stable/resrep30590.7. P. 31.

[4] European Ethical Charter on the use of Artificial Intelligence in judicial systems and their environment (adopted at the 31st plenary meeting of the CEPEJ, Strasbourg, 3-4 December 2018). The European Commission for the Efficiency of Justice (CEPEJ) of the Council of Europe. Accessed August 13, 2023 from https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c. P. 5.

one of the most significant changes that has happened in the sphere of justice for more than a hundred years.[5]

At the same time, with recognition of the imminence of enhancing the judicial sphere with AI, how to comply with traditional values at the core of justice is becoming more topical. Experts highlight the need to analyse the influence of AI on the right to a fair trial, including the right to be judged by 'an independent and impartial tribunal established by law' and the principle of equality of arms.[6]

In the judicial sphere, the typical problems of AI-enabled decision-making become more dangerous for society and, thus, require more extensive research. Among these problems are such issues as 'black box problems' (the lack of information on how AI reaches a particular decision), the risks of accidental discrimination by nationality, race, gender or social background, and the phenomena of automation bias, which leads to an excessive reliance from judges on the opinion of an AI.

The Russian Federation's experience is valuable for an international research agenda in this field due to a number of factors. The judicial sphere in Russia has been extensively digitalised over the last few decades, and now it is already highly automated. Even without holding leading positions in AI development in general, the Russian government actively implements computer technologies into the judicial sphere, becoming the leader (in terms of speed, but maybe not in terms of quality) in this race. Various officials across the Russian judicial system provide reports about different steps that are being taken to establish an AI-enabled justice system.[7] In 2024, one such official urged that 'a

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[5] *O'brien M., Kang D.* AI in the court: When algorithms rule on jail time. Phys.org. January 31, 2018. Accessed August 1, 2023 from https://phys.org/news/2018-01-ai-court-algorithms.html.

[6] *Ronsin X., Lampos V., Maîtrepierre A.* In-depth study on the use of AI in judicial systems, notably AI applications processing judicial decisions and data. European Ethical Charter on the use of Artificial Intelligence in judicial systems and their environment (adopted at the 31st plenary meeting of the CEPEJ, Strasbourg, 3-4 December 2018). Accessed August 13, 2023 from https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c. P. 15. Para. 8.

[7] In Russia, artificial intelligence has been employed to prepare court decisions. RIA News. May 25, 2021. (In Russian). Accessed July 6, 2021 from https://ria.ru/20210525/intellekt-

super-service Justice Online' should be released, which should be capable of drafting decisions by AI.[8] In 2021, the Russian government made digital amendments, allowing AI usage in part of civil procedure legislation that covers the enforcement of court decisions.[9]

Thus, Russian automation of civil procedures has excellent research potential due to extensive and, at the same time, intensive AI implementation. However, legal scholars still need to cover this topic sufficiently. The idea of using AI in litigation should be analysed in the context of conforming to judicial aims and principles at the heart of the judicial system.

To sum up, the topic of this research is highly relevant not only for the Russian Federation itself but also for many other jurisdictions that are already or may start using AI technologies in the sphere of justice or even in decision-making in general. The topic has a grand scientific, interdisciplinary, and human rights protection value because it deals with both technical and legal aspects of the ongoing digital transformation of the judicial sphere.

The scope of the research

This dissertation is devoted to the use of technologies that could be characterised as 'artificial intelligence' in judicial activities within civil and commercial disputes in the Russian Federation. The central focus of the research is the area of AI-augmented judicial decision-making. However, this paper also covers some aspects of using AI by litigants, experts, clerks, and bailiffs.

1733789200.html; *Kostenko Ya.* In the State Duma, it was proposed to expand the field of the use of artificial intelligence in courts. Gazeta.Ru. May 25, 2021. (In Russian). Accessed July 6, 2021 from https://www.gazeta.ru/tech/news/2021/05/25/n_16020674.shtml; *Gubanov A.* Momotov told where artificial intelligence will come from into Russian courts. LEGAL.REPORT. May 28, 2021. (In Russian). Accessed July 6, 2021 from https://legal.report/momotov-rasskazal-otkuda-v-rossijskie-sudy-pridet-iskusstvennyj-razum/.

[8] *Momotov V.* Artificial intelligence in litigation: state and prospects for use. Courier of Kutafin Moscow State Law University (MSAL). No. 5/2021. (In Russian). DOI: 10.17803/2311-5998.2021.81.5.188-191. P. 189.

[9] Federal statute of December 21, 2021 No. 417-FZ 'On the amendments to the certain legislative acts of the Russian Federation'. (In Russian). Accessed January 7, 2024 from https://www.consultant.ru/document/cons_doc_LAW_404054/.

The term 'AI' should be understood as any software that simulates human mental operations. Such a broad approach to the definition allowed us to cover legal issues relevant to any automated decision-making in courts based either on the simplest algorithms or on potentially possible future 'strong AI' technologies (also called general-purpose AI, general AI, Artificial General Intelligence – AGI), which are capable of operating in any sphere of knowledge.[10] It is worth underlining the fact that strong AI has still not been invented. Moreover, scientists are still debating whether it is actually possible to invent it in the future.[11] At the same time, the author of this dissertation does not exclude the possibility of such an invention, so implications are presented with the belief that strong AI may exist.

By the element of AI in this work, we understand a separate software, either along with hardware or not. This term can be interchanged with an AI system within this paper, whilst 'AI technology' relates to AI in general.[12] In this research, we do not touch hardware development and usage issues, so we feel allowed not to distinguish whether we speak about software and hardware or only about software when the AI term is used.

Another essential characteristic of the scope of the research is that it covers civil and commercial adjudication in any form. AI can be implemented not only into digital proceedings but also into traditional court hearings (for instance, for simultaneous translation from a foreign language). Thus, the use of AI is analysed through the scope of all possible forms of proceedings, including traditional offline proceedings, e-justice, online courts, and even automated litigation by means of completing a short online form using a mobile gadget.

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[10] *Antebi L.* P. 32.

[11] *Manyika J.* Getting AI Right: Introductory Notes on AI & Society. Daedalus: The Journal of the American Academy of Arts & Sciences. The MIT Press: 2022, No. 151 (2). Accessed May 22, 2023 from https://www.jstor.org/stable/48662023. P. 12–13.

[12] *Lukonina Yu.* The digital civil procedural form: Theoretical and practical aspects. The dissertation of the Doctor of Philosophy in Law. Saratov, 2023. (In Russian). P. 65.

Consequently, to address all issues related to the topic of the dissertation, the following sources fulfilled the scope of the research: primary sources (international treaties, European regulations, the judgments of the European Court of Human Rights, the Constitution of the Russian Federation, Russian statutes and regulations, and Russian case decisions) and secondary sources (dictionaries, law reviews, journal articles, treatises, and dissertations).

Research questions and objectives

The research question of this dissertation was to evaluate whether and in which forms the use of AI by judges in modern civil and commercial litigation is admissible in terms of its impact on the perception and implementation of the core values of justice such as goals, objectives and principles of legal proceedings.

This question led us to the following **objectives** in conducting the research:

(a) to detect AI technologies which are already being used or which may be used in the near future within the judicial sphere and to determine appropriate procedural forms (models) of its usage in Russian civil and commercial proceedings;

(b) to analyse the core values of justice, namely goals, objectives and principles of civil and commercial proceedings, and their realisation in the context of AI-enhanced judicial decision-making;

(c) to evaluate the admissibility of the use of various types of AI systems in terms of adherence to judicial principles and objectives;

(d) to prepare proposals for the legislative bodies on how to amend Russian legislation in corresponding circumstances.

Literature review

The majority of issues analysed in this dissertation have previously been covered only separately (the legal status of AI, liability for AI activities, decision-making using AI, and AI-enhanced contracts), so there was a clear need to complexly evaluate the legal boundaries of using AI in courts. In contrast, some

scholars have paid attention to many issues relating to this topic at once, but the journal format has not been conducive to allowing them to comprehensively analyse all essential aspects.

Many authors have analysed general issues, such as the pros and cons of the judicial usage of AI. The most popular conclusion of these authors is that AI could assist with accomplishing repeatable tasks and adjudicating easy cases, helping judges concentrate on more complicated matters. For instance, Tim Wu compared the experience of using AI in other spheres with the concept of its usage in courts. His research led him to the implications that the automation of judicial decision-making could allow the judicial system to work quicker and let judges spend their time on more complex cases, or to determine which cases are too challenging for machines.[13]

There are countless legal resources on the core values of justice where AI technologies are not mentioned, but the main ideas of adjudicating have been presented perfectly. These papers are meaningful for research such as this as they enable us to better understand the framework of implementing AI systems. For example, we can find dozens of well-written papers dedicated to judicial independence. Scholars who have researched the actors who could be interested in influencing judges include S. B. Burbank,[14] T. S. Clark,[15] I. R. Kaufman,[16] T. Meron,[17] and many others. The importance of and grounds for judicial independence are described in the papers of S. J. Ervin,[18] P. Gewirtz,[19]

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[13] *Wu T*. Will Artificial Intelligence Eat the Law? The Rise of Hybrid Social-Ordering Systems. Columbia Law Review, 2019. No. 119 (7). Accessed October 2, 2020 from www.jstor.org/stable/26810857. DOI:10.2307/26810857. P. 2004–2005.

[14] *Burbank S. B.* Judicial Independence, Judicial Accountability & Interbranch Relations. Daedalus. 2008. No. 137 (4). P. 16–27.

[15] *Clark T. S.* The limits of judicial independence. Cambridge University Press. 2010. 337 p.

[16] *Kaufman I. R.* The essence of judicial independence. Columbia Law Review. 1980. No. 80 (4). P. 681–716.

[17] *Meron T.* Judicial Independence and Impartiality in International Criminal Tribunals. The American Journal of International Law. 2005. No. 99 (2). P. 359–369.

[18] *Ervin S. J.* Separation of Powers: Judicial Independence. Law and Contemporary Problems. 1970. No. 35 (1). P. 108–127.

[19] *Gewirtz P.* Independence and accountability of courts. China Law Review. 2005. No. 1 (1). P. 11–26.

L. Hilbink,[20] M. Shapiro,[21] and other scholars. These papers provide us with a clear understanding[22] of judicial independence as 'the ability and willingness of courts' to resolve disputes lawfully, having no undue regard for the opinions of government actors.[23] Almost the same situation exists with other judicial principles, which are generally thoroughly analysed without any correlation to AI.

Only a limited number of scholars have published papers dedicated to the problem of AI's influence on the core values of judicial systems. Ryan Calo raised issues related to this problem regarding applying judicial principles when using AI to make judicial decisions.[24] However, a detailed analysis was not provided in the paper. Xavier Ronsin, Vasileios Lampos, and Agnès Maîtrepierre addressed these issues in more detail in the context of civil, commercial and administrative proceedings. However, the future of each mentioned principle (access to a court, adversarial principle, equality of arms, impartiality and independence of judges, and right to counsel) was described only in several sentences.[25]

Works written on online court proceedings usually mention the potential problems related to AI. Nevertheless, due to the focus on online adjudication, AI systems are not covered in such papers well enough. One example can be provided by Zbynek Loebl's monograph on online courts, where, in one section, he discusses the principles and how they should be applied when using AI.[26] That

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[20] *Hilbink L.* The origins of positive judicial independence. World Politics. 2012. No. 64 (4). P. 587–621.

[21] *Shapiro M.* Judicial Independence: New Challenges in Established Nations. Indiana Journal of Global Legal Studies. 2013. No. 20 (1). P. 253–277.

[22] *Drozd D.* Judicial Independence and the Use of Artificial Intelligence in Courts. Law and State. 2023. No. 2 (99). DOI: 10.51634/2307-5201_2023_2_15. P. 19.

[23] *Melton J., Ginsburg T.* Does De Jure Judicial Independence Really Matter? A Reevaluation of Explanations for Judicial Independence. Journal of Law and Courts. 2014. No. 2 (2). P. 190.

[24] *Calo R.* Artificial intelligence policy: a primer and roadmap. UCDL Rev. 2017. No. 51 (399). Accessed July 24, 2023 from https://digitalcommons.law.uw.edu/faculty-articles/640. P. 413–415.

[25] *Ronsin X., Lampos V., Maîtrepierre A.* In-depth study on the use of AI in judicial systems, notably AI applications processing judicial decisions and data. P. 47–48. Para. 113–116.

[26] *Loebl Z.* Designing online courts. The Future of Justice is Open to All. Wolters Kluwer: 2019. P. 66–76.

section of his work is extensively based on the provisions of the European Ethical Charter on AI, released in 2018 by the CEPEJ.[27]

Kalliopi Terzidou has paid the most attention to the principles of justice in the digital age. The author concluded that for one group of principles, AI brings enormous benefits (such as access to a court), whilst, for another group, it leads to potential risks, which should be kept in mind during the establishment of judicial AI systems (such as the adversarial principle).[28] Meanwhile, despite the outstanding advantages of her work, the journal article format did not enable K. Terzidou to fully cover all significant problematic aspects in this sphere. For example, while the problem of the independence of judges was raised, she only shed light on one aspect, namely the risks associated with the possibility of private companies creating AI systems,[29] leaving many other essential aspects in the shadows.

Next, we should highlight that the papers mentioned above do not cover Russian national particularities of implementing AI-augmented adjudication. Since the dissertation is mainly dedicated to the Russian experience of using AI in courts, it is essential to analyse national scientific views on the core values of the judicial system and the idea of the judicial usage of AI technologies.

Articles from Russian scholars, similar to the papers of their foreign peers, usually concentrate only on the general aspects of the future of AI-enhanced decision-making.[30] Some authors argue that the flexibility of human thinking is better than computers' algorithmic way of 'thinking'.[31] Others describe the

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[27] European Ethical Charter on the use of Artificial Intelligence in judicial systems and their environment (adopted at the 31st plenary meeting of the CEPEJ, Strasbourg, 3-4 December 2018).

[28] *Terzidou K.* The Use of Artificial Intelligence in the Judiciary and its Compliance with the Right to a Fair Trial. Journal of Judicial Administration. 2022. Accessed August 19, 2023 from https://ssrn.com/abstract=4495715. P. 163.

[29] Ibid. P. 160–161.

[30] See: *Morkhat P.* The Use of Artificial Intelligence in the Judicial Proceedings. Herald of Civil Procedure. 2019. Vol. 9, No. 3. P. 61–85. (In Russian). DOI: 10.24031/2226-0781-2019-9-3-61-8.

[31] *Tsvetkov Yu.* Artificial intelligence in justice. The Statute. 2021. No. 4. (In Russian). P. 105.

benefits of using AI in the judicial sphere. For instance, V. Andreev, V. Laptev, and S. Chucha, speaking about the advantages of AI-assisted courts, used examples of the possible automation of corporate dispute settlement.[32]

Some Russian specialists have analysed the practical experiences of using AI by foreign courts and their authorities. Al. Neznamov and An. Neznamov, with the help of foreign examples, described the primary positive effects of AI implementation in courts along with the corresponding risks that led them to the conclusion about the ability of modern AI systems to reduce time costs within judicial decision-making.[33] The analysis of foreign experience also helped K. Branovitskii, I. Renz, Al. Neznamov, An. Neznamov, and V. Yarkov conclude that machine adjudication will unavoidably replace human adjudication.[34]

The problems of the influence of digital technologies on the core values of the judicial system were analysed in Yu. Lukonina's papers, including her doctoral dissertation.[35] Admitting that the procedural forms in civil and commercial litigation adapt to digital changes, she concluded that it is reasonable to distinguish a new form of judicial decision-making called the 'digital civilistic form'.[36] The dissertation of Yu. Lukonina covers a broad range of electronic and digital issues in the judicial sphere, from Internet messages between litigants as evidence to online court hearings and smart contracts.[37]

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[32] *Andreev V. K., Laptev V. A., Chucha S. Yu.* Artificial intelligence in the system of electronic justice by consideration of corporate disputes. Vestnik of Saint Petersburg University. Law. 2020. No. 1. P. 19–34. (In Russian). DOI: 10.21638/spbu14.2020.102.

[33] *Neznamov Al., Neznamov An.* Using Artificial Intelligence at Legal Proceedings: First Experience and First Conclusions. Russian law: education, practice, and science. 2020. No 3. P. 32–36. (In Russian). Accessed January 7, 2024 from https://cyberleninka.ru/article/n/ispolzovanie-iskusstvennogo-intellekta-v-sudoproizvodstve-pervyy-opyt-i-pervye-vyvody.

[34] *Branovitskii K., Renz I., Neznamov Al., Neznamov An., Yarkov V.* Digital Technology and Civil Procedure: Problems of Interinfluence. Herald of The Euro-Asian Law Congress. 2018. Is. 2. P. 56–68. (In Russian).

[35] *Lukonina Yu.* The digital civil procedural form: Theoretical and practical aspects. The dissertation of the Doctor of Philosophy in Law. Saratov, 2023. (In Russian).

[36] Ibid. P. 31–32.

[37] See: Ibid. P. 35, 46–48, 67, 71, 77, 95, 150–156.

The research closest to the topic covered in this study was produced by P. Konstantinov in his doctoral dissertation defended in 2023.[38] However, his research methodology did not enable him to comprehensively cover all problematic issues of AI-enhanced judicial decision-making. The author tried to analyse many different aspects of the digitalisation of the legal sphere, including online court hearings, digital technologies within notary services, and the so-called concept of predictive justice. However, Konstantinov did not provide any analysis of procedural principles, so he discussed the interinfluence of principles and AI without a clear picture of what these principles really mean. Another weakness of the research is that P. Konstantinov ignored English-language original sources and cited Russian authors who had also not seen the original sources.

One of the examples of Konstantinov's ignorance of original sources can be found in the context of an Argentinian startup called Prometea. The author used this case to prove the violation of the judicial independence principle because, in 2018, Argentinian judges 'approved 100% machine-produced decisions'.[39] Indeed, if AI drafted hundreds or thousands of judgments, and judges in 100% of cases agreed with these drafts without any amendments, it could serve as a sign of the invasion of the independence of judicial decision-making. However, the original source reveals that Prometea is used not by courts but by prosecutors, whereas judges in Argentina only approve or disregard prosecutors' decisions.[40] As to the 100% result, it was pictured only after the first 33 cases were processed,[41] but the acceptance rate was extremely high (more than 92%) even

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[38] *Konstantinov P.* The influence of information technology on the principles of civil procedure (a comparative legal study using the examples of Russia and France). The dissertation of the Doctor of Philosophy in Law. Ekaterinburg, 2022. (In Russian). Accessed November 6, 2023 from https://www.usla.ru/science/dissovet/file/base/5/572/dissert_dl.pdf.

[39] Ibid. P. 235.

[40] *Gillespie P.* This AI Startup Generates Legal Papers Without Lawyers, and Suggests a Ruling. Bloomberg. 26.10.2018. Accessed November 12, 2023 from https://www.bloomberg.com/news/articles/2018-10-26/this-ai-startup-generates-legal-papers-without-lawyers-and-suggests-a-ruling.

[41] Ibid.

before the AI application.[42] Finally, in all these 33 cases, prosecutors manually proofread every draft prepared by the AI system before sending them to a court.[43] Thus, if we had such statistics, the one implication regarding independence from AI that could be made here is that prosecutors had made zero amendments to these drafts. Consequently, P. Konstantinov's conclusion that Prometea is the example 'of reducing the principle of independence to nothing'[44] is unreasonable. Despite the closeness of our topics, such limitations in his research not only leave a sufficient gap for further research but also allow and require us to double-check his findings.

To sum up, in both the international and Russian literature, no complex research papers have fully covered the legal issues of using AI in civil and commercial proceedings, emphasising the core values of justice, especially in Russian litigation. There are, however, research works on particular issues or broad research works stating the problems of AI-enhanced adjudication without their detailed analysis.

Meanwhile, many research papers have contributed to the dissertation. The theoretical basis of our research included the works on AI-enhanced adjudication and the core values of judicial proceedings.

In particular, publications examined and used in this dissertation include the following scholars: C. Abid, C. Aguzzi, M. Andenas, L. Antebi, P. D. Arredondo, K. D. Ashley, I. Bantekas, A. Barak, T. Bekkedal, J. D. Bolter, M. J. Bommarito, S. B. Burbank, A. Van den Branden, R. Calo, B. Casey, D. K. Citron, T. S. Clark, G. V. Cormack, A. Deeks, G. Du, J. L. Dunoff, S. J. Ervin, L. P. Feld, P. Gewirtz, M. D. Gilbert, D. M. Gibler, T. Ginsburg, K. Goddard, L. D. Godefroy, M. J. González-Espejo, M. A. Gray, P. W. Grimm,

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[42] *Estevez E., Fillottrani P., Linares Lejarraga S.* PROMETEA: Transformando la administración de justicia con herramientas de inteligencia artificial. 2020. Accessed November 12, 2023 from https://publications.iadb.org/es/prometea-transformando-la-administracion-de-justicia-con-herramientas-de-inteligencia-artificial. DOI: 10.18235/0002378. P. 26.

[43] Ibid.

[44] *Konstantinov P.* P. 235.

M. R. Grossman, A. Hamilton, L. Hilbink, J. A. Jolowicz, D. Kang, D. M. Katz, I. R. Kaufman, V. Lampos, C. Lapp, F. Lebaron, M. A. Lemley, J. Lévy-Vehel, Z. Loebl, M. Maas, A. Maîtrepierre, J. Manyika, J. Melton, T. Meron, E. Niiler, M. O'brien, L. Pantaleo, J. Pavón, M. A. Pollack, E. A. Posner, K. A. Randazzo, R. Reid, X. Ronsin, F. Rossi, A. Roudsari, J. Savelka, J. R. Searle, M. Shapiro, R. Simmons, S. Shubhendu, T. Sourdin, S. De Spiegeleire, R. Susskind, T. Sweijs, K. Terzidou, J. Ulenaers, J. F. Vijay, S. Voigt, H. Westermann, T. Wu, J. C. Wyatt, H. Xu, J. C. Yoo, J. Zerilli, and others.

As to the Russian scholars, the works of the following authors were analysed: D. Abushenko, A. Artizanova, I. Bannikov, E. Barbakadze, L. Berg, N. Bobrinskiy, A. Bondar, A. Bonner, K. Branovitskii, I. Chebotareva, L. Chegovadze, E. Chetvertakova, S. Chucha, E. Fokin, M. Galperin, M. Istomina, M. Kolosova, P. Konstantinov, A. Krasnov, M. Krasnov, E. Kudryavtseva, V. Laptev, O. Latyshev, Yu. Lukonina, P. Lyublinsky, S. Mehrabyan, M. Mitrofanova, E. Mishina, P. Morkhat, T. Morshchakova, Al. Neznamov, An. Neznamov, S. Nekrasov, O. Papkova, Z. Papulova, S. Pashin, M. Permilovsky, P. Pechegina, A. Pleshanov, I. Pokrovsky, V. Poludnyakov, L. Prokudina, O. Rabtsevich, I. Renz, A. Rubanov, T. Sakhnova, V. Sidorenko, A. Skorobogatov, D. Strigunova, A. Sultanov, Yu. Tsvetkov, A. Tyulkanov, R. Shakiryanov, E. Vaskovsky, V. Yarkov, T. Yaroshenko, and G. Zhilin.

Methodology

The research methodology was typical for legal dissertations with a significant focus on qualitative methods, especially the literature review. The analysis of published works by others was conducted in every section of the dissertation. Special attention was dedicated to the literature on the core values of the judicial system that enabled the use of these values competently. This approach, focusing on the analysis of judicial principles and objectives, distinguishes this research from many others, where the authors have tried to

discuss how AI influences judicial principles without a proper understanding of these principles.

Another qualitative method used in the research is the case study method. Case decisions showed existing problems in the sphere of litigation, which can be effectively addressed by means of AI technologies. Court cases also served as a good point for discussing with other authors. For instance, on the real examples provided by another scholar, we argued about why defying the law by judges is not better than AI's blind following the rules.

Another method utilised is a method of critical analysis. This method enabled us to examine other authors' implications and ideas. This was valuable for this work as many others, as mentioned above, skipped the analysis of the judicial core values and tried to discuss their future in the case of AI employment. Thus, we critically challenged conclusions that were not based on reliable data, which often led us to opposite conclusions. Critical analysis was also widely used within the detailed examination of the digital amendments to the Russian enforcement legislation. We found a number of harmful mistakes made by the Russian legislator in this sphere, which is tightly coupled with litigation.

The research benefited from quantitative methods using empirical data from AI and experiments in different countries. More specifically, statistical data helped evaluate the development of judicial AI systems. For instance, relevant data on COMPAS allowed us to conclude that racial biases in AI systems, like those found in the system adjudicating on bails developed back in 2013, can be mitigated.[45] Our research also relied on data from experiments on the use of AI technologies in Russian courts that revealed several types of judge activities that can be more or less efficiently optimised by AI employment.

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[45] *Ramey C.* Algorithm Helps New York Decide Who Goes Free Before Trial. The Wall Street Journal. September 20, 2020. Accessed January 3, 2024 from https://www.wsj.com/articles/algorithm-helps-new-york-decide-who-goes-free-before-trial-11600610400.

Results and discussion

The research methods employed by the author enabled the completion of the dissertation with a clear understanding of the boundaries within which judges may use AI in modern civil and commercial litigation in terms of its impact on the implementation of the core values of justice. The novelty of the research is revealed in the detailed examination of the future of the goals, objectives, and principles of legal proceedings in implementing AI technologies. This approach distinguishes the dissertation from other publications devoted to AI-enhanced proceedings where the step of analysing judicial core values has been missed. The judicial principles determine the existing and future procedural forms of AI application in courts, so their analysis is of high value.

The scientific novelty of the research is predetermined by the fact that the new ways of using AI in Russian litigation were analysed not only based on the existing experience of AI's use in other spheres and other countries but also by matching with the values inherent to the judicial system. Moreover, the author analysed all existing and possible future AI technologies. In the author's opinion, limiting this research by only examining technologies that are in operation today is unreasonable due to the exponential speed of technological development, and the speed of change that is occurring in this field. Thus, this dissertation is the first complex and systematic research on the admissibility of using AI technologies in judicial decision-making in the context of its coherence with the core values of Russian procedural law.

The key implications submitted for the public defence of the dissertation were the following:

1.   When defining the procedural forms, the AI elements should be understood as any software capable of performing operations that usually require human cognitive abilities.

2.   Because automation bias can tremendously impact litigation results, it is reasonable to categorise all judicial AI systems into two groups: systems that assist judges and systems that adjudicate independently. The latter includes not

only AI systems that produce decisions or manage the whole trial but also the systems that prepare the drafts of decisions for judges.

3.   In order to achieve the goals of judicial proceedings and as required by the principle of procedural formalism, the use of any AI systems, regardless of their technical complexity, should be based on the orders of actions (procedural forms) directly prescribed for litigants and the court by procedural statutes. These orders of actions should cover all meaningful aspects of using these algorithms. For instance, procedural statutes should state the criteria for determining whether AI shall process a particular case, the type of AI system and its abilities, the order of challenging AI decisions, whether judges have the power to amend or cancel AI decisions, and how and when they can do that.

4.   Widespread replacement of human judges by AI systems is impossible due to the lack of AI abilities to perform judicial discretion, which is vital for adjudication. Considering the current level of technology development, the foreseeable prospects for using AI lie in resolving standard disputes, where facts can be relatively easily analysed, and involved legal issues do not raise severe debates in court practice and between scholars.

5.   The influence of AI in litigation does not change the whole system of judicial principles. For one group of principles, like procedural economy and reasonable time of proceedings, AI implication empowers their realisation. For another group, like the accessibility of justice and publicity, AI does not lead to meaningful changes (but corresponding digitalisation maybe will). For the third broad group of principles, including the immediacy of judicial proceedings, the equality of arms, the adversarial principle, and judicial independence, AI usage requires their rethinking and restatement. In that case, the admissibility of the use of AI should be evaluated by its potential effect on achieving the goals and objectives of proceedings. The wide use of AI in courts can raise the adversariality of proceedings if the results of AI analysis will be accessible to litigants for their use during the trial.

6.   AI augmentation in judicial proceedings requires supplementing the principle of judicial independence with two new elements. The first proposed element is the security of AI-processed data from illegal interruption. The second is the security of AI systems from unauthorised changes in the logic of algorithm operation, the revision of which is possible only by the collective decision of several impartial, competent actors with divergent interests (judiciary representatives, bar community and in-house lawyers' representatives, scholars, human rights organisations, and others).

7.   The use of AI systems that draft decisions for judges does not comply with the immediacy of judicial proceedings principle, but it could be deemed admissible. However, such AI systems should be reliable, and it should be beyond a reasonable doubt that no distortion of case facts and litigants' arguments occurred by the machine.

8.   The use of AI that drafts decisions or adjudicates independently should not begin from appellate or higher courts. AI-enhanced litigation should be first tested in trials where the decision of the AI system may be challenged before its execution. Nevertheless, in all cases, litigants should retain the right to access a human judge, at least at the court of appeal or by an extraordinary procedure against AI mistakes.

Conclusion

This research, for the first time, complexly addresses the critical aspects of the realisation of judicial principles in the age of AI. Several implications lead to rethinking the arguments of many other scholars that AI allegedly should not act as a judge in any case but only technically assist them. The author has also provided the classification of judicial AI systems, which has a significant meaning for further research and the practical use of AI. The author's implications also allow us to have a fresh look at some traditional academic views and legislative provisions.

The practical importance of the research focusing on the Russian experience has its roots in 2021, when Russian authorities started the first pilot project on AI-augmented adjudication in small and repeatable civil cases. Following this, in 2022, a similar experiment was announced in Russian commercial courts. Finally, in 2024, it was planned to launch an online platform for all Russian courts where AI would play a significant role, including in preparing draft decisions. There are grounds to predict that such experiments in Russia will be continued within its rash digitalisation in other public spheres.

The conclusions made from this research could help implement AI technologies in the judicial sphere with lower risks of human rights violations. The implications of the dissertation may be used to improve current legislation and adjust the approaches used to conduct experiments on the use of AI in legal proceedings.

The research findings were tested within the author's work as a junior research fellow at the Institute for Law in the Digital Environment, HSE University (2020–2021). The author contributed to the research on the following topics: 'Problems of Using Artificial Intelligence in Making Legally Binding Decisions', 'Regulation of Liability in the Field of AI', 'Problems of Civil Transactions Using AI Systems', and 'Legal Problems of Identification in the Field of AI and Robotics'.

The findings of the research have been presented and discussed at international and national legal conferences, including the XII International Scientific-Practical Conference 'Law in the Digital Age' (Moscow, 2023), the National Scientific Conference 'The Ethical and Legal Problems of the Digital Transformation: From a Conflict to a Harmony?' (Moscow, 2020), and the X International Scientific-Practical Conference 'Law and Data: Theory and Practical Aspects' (Saint-Petersburg, 2020). The research was also delivered to the participants of the Doctoral students' workshop held by the School of International Law of the Faculty of Law, HSE University (Moscow, 2021) and to

the panel of examinators during the state exams from the Doctoral School of Law, HSE University (Moscow, 2023).

The research implications served as the basis for developing the author's course proposal for the Masters programme at HSE University, named 'Dispute Resolution at the Digital Age'. The implications were also used within the author's legal practice as an attorney during court hearings and in preparing memorandums.

The final text of the dissertation was discussed at the joint meeting of the School of International Law and the School of Private Law of the Faculty of Law, HSE University (Moscow, 2023).

The key findings of the research were published in six legal journal articles. The four were published in the journals separately recommended by both HSE University and the Supreme Attestation Commission under the Ministry of Science and Higher Education of the Russian Federation (the Russian central authority on awarding scientific degrees). One article was published in English in a foreign journal.

The dissertation is written in Russian and consists of the introduction that includes the literature review and the theoretical framework, the three chapters, the conclusion, and the reference list.

The author's papers on the topic of the dissertation were published in the following journals recommended by HSE University:

1. *Drozd D.* Equality of the Parties and Adversariality in the Use of Artificial Intelligence in Courts. Arbitrazh and Civil Procedure. 2023. No. 2. P. 43–47. (In Russian). DOI: 10.18572/1812-383X-2023-1-43-47.

2. *Drozd D.* How Can the Use of Artificial Intelligence Affect Equality of the Parties and Adversariality? Arbitrazh and Civil Procedure. 2023. No. 6. P. 9–13. (In Russian). DOI: 10.18572/1812-383X-2023-6-9-13.

3. *Drozd D., Nikitina M.* The Influence of Digital Technologies on Legal Proceedings. The Legislation. 2022. No. 1. P. 46–54. (In Russian). Accessed January 7, 2024 from https://www.garant.ru/company/lawm/1523864/.

4. *Drozd D.* The Immediacy of Judicial Proceedings when Using Artificial Intelligence. Russian Juridical Journal. 2022. No. 4. P. 87–98. (In Russian). DOI: 10.34076/20713797_2022_4_87.

The publications of the author in other journals were the following:

1. *Drozd D.* Judicial Independence and the Use of Artificial Intelligence in Courts. Law and State. 2023. No. 2 (99). P. 15–27. DOI: 10.51634/2307-5201_2023_2_15.

2. *Drozd D.* Dispute Resolution in the Digital Age: Prospects for the Use of Artificial Intelligence in Litigation. Law and Information: The questions of theory and practice. The collection of works of International Scientific and Practical Conference. Is. 10, 'Electronic legislation' series. 2021. P. 157–165. (In Russian).