

Using artificial intelligence algorithms in legal proceedings in the ecosystem services and digital economy

Damir Khamitovich Valeev*, Anas Gaptraufovich Nuriev, Nikita Nikolayevich Makolkin

Department of Law, Law Faculty, Kazan Federal University, Kazan, Russia

* Corresponding author's E-mail: valeev55@gmail.com

ABSTRACT

Machine learning algorithms can permit the usage of frequently available 'big data' and contribute to utilizing ecosystem service models across scales, examining and predicting the issues of these services to disaggregated beneficiaries. Digitalization of public relations involves changing the way of processing information and the speed of its perception. The introduction of digital resources leads to the automation of a number of processes that were previously executed by people and required a significant amount of time. The practical implementation of the achievements of the scientific and technical method that was started in production reaches some spheres that seemed unachievable for artificial intelligence. Normative regulation has to take into account the need to use artificial intelligence algorithms. A particular interest is paid to the possibility of using such algorithms in the administration of justice as well as ecosystem services.

Keywords: Digital economy, Digital justice, Artificial intelligence, Digital transformation, Algorithm, Ecosystem services.

INTRODUCTION

The change of public relations and the development of an information society pose new challenges, which are primarily related to the need to process a large amount of information (Gold 2004). Processing a large amount of data (big data) is already unthinkable without the involvement of external devices that automate many routine processes. The introduction of such tools is currently being implemented in many areas of human activity, which in the context of the information society exist in the environment, where information and the level of its application and availability dramatically affect the lives of citizens on economic and socio-cultural levels. Artificial intelligence as a digital tool designed to exist in the areas and within the framework created by the legislator, nowadays exists, out of the legislative field, and as a maximum, is limited to the level of the by-law regulation. An applied model of understanding algorithmic computerized observation frameworks, acquiring knowledge from Giddens, who proposed the thought of structuration as social works on getting from the convergence among structure and specialists was presented (Park *et al.* 2018). A method was introduced which permits utilizing setting inquiry for the quest for data assets; the setting information elucidation and explanation of the expressed scene of interdisciplinary logical bearing "Advanced Economy: e-administration and brilliant innovation" (Kononova & Prokudin 2018).

An all encompassing design of an Internet of AI-Centric (IoAIC), which is especially characterized as "a methodology that uses Artificial Intelligence (AI) as a basic computational center in significant parts of the Internet-of-X engineering to use the current IoX environment regarding usefulness and execution" was presented (Tanomvorsin & San-Um 2018). A three-level computerized keen biological model dependent on the system of the square chain cloud. Its center part is ethereum convention, primarily including keen agreement, murmur, swarm was planned (Xu & Shi 2020). Computerized incorporation, consolidating research territories, staff, cycles, clients, and information will make conditions for logical and innovative accomplishments and achievements, giving

logical and financial improvements in related businesses and, most importantly, in the worldwide mineral what's more, crude materials market (Litvinenko 2019).

All this raises important questions for modern society related to the need for mandatory legislative regulation of artificial intelligence, especially in legal relations that are known for the requirements of special formalism, such as procedural relations, the mandatory participant of which is the court (Kemal Öktem 2010; Urszula Nowicka 2019; Bagheri 2020).

The main aim of the study was to investigate the concept and use of Artificial Intelligence Algorithms in Legal Proceedings in the Ecosystem Services and Digital Economy. Moreover, the possibility of using such algorithms in the administration of justice has been taken into consideration.

MATERIALS AND METHODS

The methodological foundation of the study is the overall provisions of the procedural legal sciences: criminal procedural law, constitutional law, civil procedural law, administrative, procedural law, and ecosystem services. The research used the following methods of scientific knowledge: inter-branch legal method, dialectical, and sociological methods. We attempted to look for subjective and quantitative commitments that address the full scope of methodological issues stood up to by experimental exploration in the sociologies, including conceptualization, information investigation, information assortment, estimation, displaying, and research plan. likewise we utilized a rationalization technique which is at base a talk between at least two individuals holding various perspectives about a subject however wishing to set up reality through contemplated strategies for argumentation.

RESULTS AND DISCUSSION

The digitalization of public relations is becoming a significant factor in the improvement of public relations at the current stage, both within the framework of individual states and on the scale of global integration. As it can be found from the data contained in the program "Russian Digital economy" (Decree of the Government of the Russian Federation 2017) based on the I-DESI index in the digital technologies field by enterprises, Russia considerably lags behind the European Union, being between the twentieth and the thirtieth places in the rating. In fact, all national legal systems have formed the basis for global digital integration. Digital data becomes a factor that can influence the speed of management decisions, the quality of services provided, and as a result, the result of actions taken. The influence of modern information and telecommunications technologies on legal procedures cannot remain aloof from the achievements of scientific and technological progress (Valeev & Nuriev 2019; Zuev *et al.* 2017; Mdehheb *et al.* 2020). Digital data become a factor that can affect the legal outcomes of actions demanded. A unique characteristic of legal regulation in the digital economy is the appearance of dependence among digital technologies that present new communication possibilities and the system of legal regulators that guarantee their application. Legal relations, considering the accomplishments and chances of digital technologies, are going through a particular alteration: new chances for the implementation of rights and obligations arise; existing legal instruments are filled with new content. However, one area of digitalization, namely the use of artificial intelligence algorithms, currently does not have any legally defined rules of application.

Digitalization also causes a change in the decision-making algorithm. So, if initially, digitalization led to the automation of processes performed by humans, now the use of artificial intelligence algorithms is becoming a reality.

The use of artificial intelligence as a result of digital transformation is, on the one hand, one of the most groundbreaking areas. On the other, it raises several essential questions of ethical nature and legal responsibility for society. The last three years have been marked by a critical breakthrough in the implementation of new norms into the system of legal regulators. These norms establish a mechanism for interaction of a legal entity with certain digital technologies so that this interaction has an inevitable legal consequence. However, the use of artificial intelligence algorithms still does not have clear boundaries of legal regulation.

The legislative systems of individual states, including the United States of America and the European Union, as well as Russian legislation in the field of artificial intelligence regulation are at the very initial stage of development. They do not have clearly defined mandatory algorithms for their implementation and their role in the regulation of public relations. Questions on the use of artificial intelligence are contained at the level of

principles that declare a certain possible variant of their implementation into national legal systems. An example is the European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their environment.

The use of artificial intelligence algorithms in the field of administration of justice is currently limited only to the automation of some processes at the level of court document management, which at the same time have important procedural consequences. According to representatives of the Russian doctrine, at the moment in the Russian Federation, there are legal, technical and technological prerequisites for the active use of artificial intelligence that can solve highly specialized tasks (weak artificial intelligence; Momotov 2020).

Accordingly, by automating only the issues of court document management, we are talking about the use of artificial intelligence algorithms, provided by user control, by employees of the court apparatus. The introduction of artificial intelligence algorithms in the judicial sphere is only at the initial level and does not have legally defined rules of application, including, even rules of ensuring user control by the judiciary (Golubtsov 2013; Nuriev & Khodzhiev 2015; Valeev & Nuriev 2019; Valeev & Nuriev 2020).

An example for a possible reference point is the European ethical charter on the use of artificial intelligence in judicial systems and their environment (European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their environment).

SUMMARY

In foreign doctrine, the issue of digitalization and the introduction of artificial intelligence is on the current agenda and appears to be more developed in comparison with the Russian legal system. It is noted that digitalization and the introduction of artificial intelligence is a huge opportunity that can lead to the emergence of new business models, new alternative ways of management, the promotion of certain social norms can go beyond the traditional legal entities and mechanisms, realizing that there is no single solution for adapting law and management to modern technologies.

CONCLUSIONS

The study of digitalization and integration of artificial intelligence in modern society from the point of view of ethical aspects and issues of legal responsibility is vital for Russian science. Particularly important is the research in the field of administration of justice ecosystem services, as an indicator of the level of confidence in the results of digital transformation.

ACKNOWLEDGEMENT

The survey has been done based on the Russian Government Program of Competitive Growth of Kazan University. RFBR funded the reported study according to the research project № 18-29-16147 MK.

REFERENCES

- Bagheri, S, Zare-Maivan, H, Heydari, M & Kazempour, Osaloo, S 2020, Relationship between broadleaved mixed forest understory species groups with soil and elevation in a semi-arid Persian oak (*Quercus brantii* L.) ecosystem, *Caspian Journal of Environmental Science*, 18: 157-170.
- Decree of the Government of the Russian Federation 2017, On the approval of the program “Digital Economy of the Russian Federation. Moscow, Russia, 15 p.
- European Ethical Charter, 2018, 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) <https://rm.coe.int/ru-ethical-charter-en-version-17-12-2018-mdl-06092019-2-/16809860f4>.
- Gold, N 2004, Understanding Service-Oriented Software. *IEEE Software*, 21: 71-77
- Golubtsov, VG 2013, Conciliation procedures in the field of economic justice: trends and prospects. *Law*, 8: 93-99.
- Kemal Öktem, M 2010, Innovation with public administration in Turkey. *Journal of US-China Public Administration*, 7: 42-50.
- Kononova, O & Prokudin, D 2018, Synthetic Method in Interdisciplinary Terminological Landscape Research of Digital Economy. In SHS Web of Conferences, EDP Sciences, Vol. 50, p. 01082.

- Litvinenko, VS 2019, Digital Economy as a Factor in the Technological Development of the Mineral Sector. Natural Resources Research, Moscow, Russia, pp. 1-21.
- Mdehheb, Z, Elkihel, B, Bouamama, M, Hammouti, B & Delaunois, F 2020, The environmental management system and its application impacts on the business economy in the eastern region of Morocco, *Caspian Journal of Environmental Sciences*, 18: 13-20
- Momotov, VV 2020, On the plenary session on the theme “Perspectives of usage of artificial intelligence in the judicial system of the Russian Federation”, Qatar. Official site of the Council of Judges of the Russian Federation. <http://www.ssrp.ru/news/lienta-novostiei/36912>.
- Nowicka, U 2019, Electronic communication in the functioning of public administration. Uniwersytet Przyrodniczo-Humanistyczny w Siedlcach, Issue: RAIP 2019; Specjalny (XIX), pp. 203-220.
- Nuriev, AG, Khodzhiev, AR 2015, Procedural guarantees of rights of citizens of the Russian Federation in the foreign states. *Research Journal of Applied Sciences*, 10: 832-834.
- Park, YJ, Chung, JE & Shin, DH 2018, The structuration of digital ecosystem, privacy, and big data intelligence. *American Behavioral Scientist*, 62: 1319-1337.
- Tanomvorsin, V & San-Um, W 2018, A holistic architecture of internet of AI-centric as a conceptual framework for supporting Thailand digital economy. *International Journal of Future Computer and Communication*, 7: 91-97, DOI:10.18178/ijfcc.2018.7.4.527.
- Valeev, DKh, Nuriev, AG 2019, Electronic document management in the field of justice in the digital economy. *Herald of Perm University. Jurisprudence*, 3(45): 467-489.
- Valeev, DKh, Nuriev, AG 2020. The influence of digital technologies on the implementation of the social functions of the state in the context of ensuring the right to enforce a court decision. *Russian judge*, 3: 16-21.
- Valeev, DKh, Nuriev, AG 2019, Digital confidence environment in procedure relationships. *Revista Genero & Direito*, 8: 42-49.
- Xu, J & Shi, Y 2020, April. Reseach on an Innovative Digital Intelligent Ecological Model Based on the BlockChain Cloud in China. In: International Conference on Big Data and Informatization Education (ICBDIE), IEEE, pp. 498-501.
- Zuev, DS, Marchenko, AA, Khasyanov, AF 2017, The use of text mining tools in jurisprudence. Analytics and data management in areas with heavy data usage, Collection of Scientific papers of the XIX International Conference DAMDID/RCDL, pp. 277-281. DOI: <https://doi.org/10.22478/ufpb.2179-7137.2019v8n6.49195>

استفاده از الگوریتم‌های هوش مصنوعی مرتبط با اقدامات قانونی و حقوقی در خدمات اکوسیستم و اقتصاد دیجیتال

دامیر خامیتویچ والوف^{*}، آناس گپترافوویچ نوریوف، نیکیتا نیکولایویچ ماکولکین

گروه حقوق، دانشکده حقوق KFU، دانشگاه فدرال کازان، کازان، روسیه

(تاریخ دریافت: ۹۹/۰۴/۰۳ تاریخ پذیرش: ۹۹/۰۸/۲۵)

چکیده

الگوریتم‌های یادگیری ماشینی امکان استفاده از کلان داده‌های موجود را داده و به استفاده از مدل‌های خدمات اکوسیستم در مقیاس‌های مختلف و بررسی و پیش‌بینی مسائل و مشکلات این سرویس‌ها کمک می‌کند. دیجیتالی شدن روابط عمومی مستلزم تغییر شیوهی پردازش اطلاعات و سرعت ادراک آن است. معرفی منابع دیجیتال منجر به اتوماسیون تعداد فرایندهای اجرا شده توسط افراد و نیز نیازمند مصرف مقدار زیادی زمان است. پیاده‌سازی عملی روش‌های علمی و فنی که در زمینه‌ی تولید شروع شده است، اکنون در زمینه‌های مختلف هوش مصنوعی اجرا می‌شود. مقررات قانونی، نیاز به استفاده از الگوریتم‌های هوش مصنوعی دارد. توجه ویژه‌ای باید به امکان استفاده از این الگوریتم‌ها در مدیریت عدالت و نیز خدمات اکوسیستم معطوف شود.

^{*}مؤلف مسئول

Bibliographic information of this paper for citing:

Khamitovich Valeev, D, Gaptraufovich Nuriev, A, Nikolayevich Makolkin, N 2020, Using artificial intelligence algorithms in legal proceedings in the ecosystem services and digital economy, Caspian Journal of Environmental Sciences, 18: 589-593

Copyright © 2020