

The Main Ethical Risks of Using Artificial Intelligence in Business



E. L. Sidorenko, Z. I. Khisamova, and U. E. Monastyrsky

Abstract The article reveals ethical foundations underlying the creation and application of systems with artificial intelligence (AI) in the interests of business. The main problem today is the lack of internationally accepted principles regulating a responsible attitude to processing and use of personal data used for training systems with AI, as well as the use of these systems in the interests of business. The main research goal is to find the best ways to solve existing problems in the field of ensuring the confidentiality of personal data and ensuring interests of business and the state in the development of advanced machines. The authors note the need for an early adoption of global initiatives at the international level to regulate a responsible attitude to personal data processing in order to train AI and create data ethics. In addition, the authors justify the need to distinguish AI ethics as a separate direction in the field of data ethics.

Keywords Artificial intelligence · Data ethics · Business interests · Ensuring balance · Ethical principles

1 Introduction

About 5 years ago, various researchers made predictions about the possibility of automation and digitization of production processes by about 50% in the next 20 years [6]. The MIT Technology Review notes that AI experts often make mistakes in

E. L. Sidorenko (✉)

Moscow State Institute of International Relations (University) of the Ministry of Foreign Affairs,
Moscow, Russia

e-mail: 12011979@list.ru

Z. I. Khisamova

Krasnodar University of the Ministry of Internal Affairs of Russia, Krasnodar, Russia

e-mail: zarahisamova@gmail.com

U. E. Monastyrsky

Monastic, Zyuba, Stepanov & Partners, Moscow, Russia

e-mail: monastyrsky@mzs.ru

© Springer Nature Switzerland AG 2021

S. I. Ashmarina and V. V. Mantulenko (eds.), *Current Achievements, Challenges and Digital Chances of Knowledge Based Economy*, Lecture Notes in Networks and Systems 133, https://doi.org/10.1007/978-3-030-47458-4_51

423

such predictions [5]. We see a confirmation of this everywhere. The technological development pace significantly exceeds all existing forecasts. In its 2018 research, the analytics company Gartner identified artificial intelligence as a key technology and technological trend [3]. This is confirmed by data on the volume of global investments in the field of AI development, exceeding \$5 billions [14, 17]. The key areas of active AI implementation in the next 10 years will be:

- medicine where the effectiveness of AI has already been clinically proven. A team of researchers from the University of Nottingham has developed four machine learning algorithms to assess the risk of cardiovascular disease in patients, the accuracy of the algorithm exceeded 76.4%, while the standard diagnostic procedure implemented by the American College of cardiology provides an accuracy of only 72.8% [11],
- finance and insurance, where the neural network, unlike a person, is able to assess and anticipate all possible risks and fraud attempts, for example, the Japanese insurance company Fukoku Mutual Life Insurance has replaced its employees with a neural network to check medical certificates, as well as accounting for the number of hospitalizations and operations carried out by the insured person to determine the terms of insurance for customers. The neural network is expected to increase the insurance productivity by 30%. For similar purposes, AI is also used by the PayPal payment system [23],
- online retail, commerce and media. The main purpose of using AI for e-commerce is to ensure interests of potential customers and offer them the most likely and desirable product for purchases. For these purposes, machine learning algorithms analyze the behavior on the site and compare it with millions of other users, which provides trading platforms with up to 35% of sales, and streaming services with up to 70% of views of certain resources [4, 13]. AI is also actively used in other business areas, such as marketing, transportation, law, consulting, agriculture, and even security [22].

Artificial intelligence technologies in marketing and advertising are becoming ubiquitous and invisible, and imperceptibly for a person constantly reduce the space of supposed freedom of choice for each individual consumer. According to analysts, the global GDP growth due to the application of AI could reach 14% by 2030, and provide an additional \$15.7 trillions, that will allow the AI to become a leader among technological drivers of the economic growth. It is expected that the greatest benefits from the AI implementation will be felt in China (+26% of GDP by 2030) and North America (potential growth of 14%) [19]. However, with the growth of investments in AI, a number of problems that are inextricably linked to it are also of increasing concern. First of all, these are problems of an ethical nature.

2 Methodology

The methodological basis of this research is a systematic approach to the study of ethical foundations for the use of AI systems. During the research, the main risks associated with the use of AI systems in the interests of business were classified and analyzed. Traditional scientific methods such as dialectical, logical, method of scientific generalization, content analysis, comparative analysis, synthesis, source studies, etc. were used in the processing of factual material. Their application made it possible to ensure the validity of the analysis, theoretical and practical conclusions and developed proposals.

3 Results

The research work identified the main ethical problems associated with the use of artificial intelligence in business. These problems are divided into two blocks: the first block is related to the collection and processing of personal data for the training purpose of systems with AI, the second block of problems is caused by the ethics of decisions made by AI and their compliance with generally accepted morality. The authors summarize that in the conditions of rapid development and implementation of AI systems, it is necessary to adopt global initiatives aimed at the responsible attitude to the handling of data in the development of AI systems, as well as the direct application of such systems.

4 Discussion

For training systems with AI, a huge array of data is used, which can only be collected using data collection and processing technologies, so the relation between artificial intelligence and data accounts for almost 100%. The main question today is: how to use maximum data with minimal risks? Thanks to modern computing power, AI technologies can analyze huge amounts of data and find complex and deeply hidden relations. However, there are still many questions about the ethics of using data, including personal data, for training AI technologies applied in business [1, 7, 10]. Data ethics is developing and becoming more relevant, as it is evidenced by the relevant documents of both public associations and international organizations. Defining boundaries of ethical access to data is a complex issue that affects various stakeholders: citizens, the state, business corporations, government agencies, etc. and requires a comprehensive solution [12].

Data ethics as a kind of applied ethics has appeared relatively recently and does not have a generally accepted definition yet. Data ethics is a new branch of applied ethics that describes value judgments and approaches we use when generating, analyzing,

and distributing data. This includes deep knowledge of data protection legislation and another relevant legislation, as well as the appropriate use of new technologies, which requires a holistic approach to applying best practices in computing, ethics, and information security [9]. Ethical issues related to the use of AI can be divided into 2 groups: problems related to the collection, analysis and processing of digital data; problems related to AI decision-making based on generalized data. Ethical difficulties are caused primarily by the collection, analysis and processing of citizens' digital data, Big Data, social and personal data. As it was already mentioned, businesses need them for AI training, online advertising, and online commerce, while the state needs them for making administrative decision, interacting with citizens, and ensuring the national security. Thanks to the collection and analysis of Big Data using AI, technology giants are able to build correlations that people themselves cannot determine themselves [20]. This also raises a question of maintaining a balance between ensuring the right to protect personal data and interests of science, business and our society in general, interested in the widespread use of AI technologies. In a number of countries today, there is a fierce debate between the use of citizens' personal data by government (and not only) organizations to ensure the public safety, training systems with AI and ensuring the right to privacy.

According to some experts, total surveillance is more dangerous than anything it should protect us against. Questions are raised about the ethics of using AI systems to control a socially approved behavior. For example, the Chinese government uses the artificial intelligence to create a social rating, using all information about the network users: their behavior, purchases, credit history, movements, social circle, interests. The basis of the European legislation since 2018 is the General Data Protection Regulation (GDPR) [8]. The main purpose of the regulation is to create a legal regime in the society, in which any citizen can be sure of the confidentiality of their personal data, including the ability to respond to cases of using his personal data without consent—to delete posted information.

At the same time, even despite the measures taken, a large amount of information remains in the network, which allows you to identify a person (using some methods of processing). So, using PCs, smartphones with mobile applications, most people without any hesitation give their consent to the smartphone use of geo-location data, access to the phone book and calls, to search queries and search history, to photo ads, etc. And the thesis that our data has become a product has become more relevant than ever. The lion's share of the world's most technology companies use a business model based on the collection and processing of users' personal data. And here the issue of ethics not only of collecting such information, but also of using it is on the agenda.

The second problem is related to the ethics and humanity of AI decisions. Systems with AI that are capable of learning go through a training phase where they "learn" to detect correct patterns and act according to the data entered. Once the system is fully trained, it can go into the test phase, where it will be given various examples and we can see how it copes with them. However, the experience of recent years shows that training is not enough, and despite the lack of feelings and emotions in AI systems, they cannot be considered as impartial and ethical ones for a number of reasons.

First, the very concept of ethics is very conditional, and can differ significantly within a single society and generation, not to mention over longer time periods. Second, it is the “level of bias and purity” and relevance of the data used for AI training. It seems extremely unlikely, even improbable, to find a large enough group of people in the society with zero bias to be able to use their data for AI training. As a result, we have cases of AI discriminating against people based on race or gender. Undoubtedly, programmers and large companies are trying to immediately eliminate such manifestations of “racism, chauvinism or xenophobia of AI”.

In their research, PwC talked about how to prepare data for AI training, extract maximum profit from the technology and not lose the trust of customers. According to analysts, the best basis for implementing AI is the competence center for artificial intelligence. Business and IT representatives should develop uniform regulations for working with data for the entire corporation and monitor their compliance; define technical standards for relationships with suppliers; manage the intellectual property; and evaluate the implementation level of the artificial intelligence. All tasks of artificial intelligence training should be solved by the AI competence center [17, 18].

However, the rapid development and use of AI technologies makes such control almost impossible. In 2018, New York city passed a law aimed at preventing discrimination through algorithms used by public services. It became the basis for the creation of a public group of experts who analyze legal and ethical aspects of the city automated decision-making systems, as well as the creation of a position in the city mayor office that is dedicated to combating biases in algorithms and increasing the responsibility for their decisions [16].

However, it should be noted that excessive restrictions on access to data can slow down the development of AI technologies. Well-thought-out legislation will allow maintaining a balance between regulating the volume and degree of anonymity of personal data without imposing numerous prohibitions. But such legislation, unfortunately, has not been created in any country in the world yet. It should be noted that this issue will become the main topic of discussions in the world arenas in the coming years [25]. A number of countries have already adopted separate acts aimed at creating a legal regime for the application of AI systems [2]. However, from the point of view of the ethical component, the most interesting is the self-regulation of the industry. Thus, in 2017, developers and researchers in the AI field adopted the Asilomar AI Principles [10], which formed the basis of ethical aspects spelled out in the Montréal Declaration for Responsible Development of Artificial Intelligence, adopted in December 2018 [24]. The responsibility principles in the development of advanced AI systems, personal data privacy, freedom and privacy, as well as security are at the heart of these ethical memoranda and a number of other private initiatives [21].

5 Conclusion

In general, it can be stated that as the number of systems with AI that actively process citizens' personal data increases, the question of the ethics of their use for various purposes, including commercial ones, is increasingly raised. AI ethics can be identified as a new independent area of data ethics. Without forming an ethical framework for the use of AI systems and the principles of personal data use in their processing, further progress is impossible. Public legal institutions are already actively involved in the ethical regulation of artificial intelligence.

In our view, the integration of ethical principles should be regulated by national or international organizations [15]. It should be noted that this sphere has become a key issue on the agenda for discussion on the world arenas. It is important to maintain a balance between interests of individuals and businesses. Well-thought-out legislation and its enforcement will allow maintaining the balance of regulating the volume and degree of anonymity of personal data without imposing numerous prohibitions. But such legislation, unfortunately, has not been created yet.

References

1. Bostrom N, Yudkowsky E (2011) *The ethics of artificial intelligence*. Cambridge University Press, Cambridge
2. Carrillo MR (2020) Artificial intelligence: from ethics to law. *Telecommun Policy*. <https://doi.org/10.1016/j.telpol.2020.101937>. Accessed 09 Jan 2020 (in press)
3. Cearley D, Burke B, Searle S, Walker M (2018) Top 10 strategic technology trends for 2018. Gartner. <https://www.gartner.com/doc/3811368>. Accessed 09 Jan 2020
4. DTI Algorithmic (2017). Neural networks: how artificial intelligence helps in business and life. <https://blog.dti.team/nejroseti/>. Accessed 09 Jan 2020 (in Russian)
5. Emerging Technology from the arXiv (2017). Experts predict when artificial intelligence will exceed human performance. <https://www.technologyreview.com/s/607970/experts-predict-when-artificial-intelligence-will-exceed-human-performance/>. Accessed 09 Jan 2020
6. Frey CB, Osborne MA (2013) The future of employment: how susceptible are jobs to computerisation? www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf. Accessed 09 Jan 2020
7. Geis JR, Brady A, Wu C, Spencer J, Ranshaert E, Jaremko J, Langer SG, Kitts AB, Birch J, Shields WF, van den Hoven van Genderen R, Kotter E, Gichoya JW, Cook TS, Morgan MB, Tang A, Safdar NM, Kohli M (2019) Ethics of artificial intelligence in radiology: summary of the joint European and North American multisociety statement. *J Am Coll Radiol* 16(11):1516–1521. <https://doi.org/10.1016/j.jacr.2019.07.028>
8. General Data Protection Regulation (GDPR). <https://gdpr-info.eu/>. Accessed 09 Jan 2020
9. Government Digital Service (2018) Guidance data ethics framework. <https://www.gov.uk/government/publications/data-ethics-framework/data-ethics-framework>. Accessed 09 Jan 2020
10. Koering D (2019) Ethics, AI, and human beings. Unpublished. <https://doi.org/10.13140/rg.2.2.25131.80169>. Accessed 09 Jan 2020
11. Krittanawong Ch, Zhang HJ, Wang Zh, Aydar MT, Kitai T (2017) Artificial intelligence in precision cardiovascular medicine. *J Am Coll Cardiol* 69(21):2657–2664

12. Lee M, Cochrane L (2020) Issues in contemporary ethics: AI warfare. https://www.researchgate.net/publication/339434471_Issues_in_Contemporary_Ethics_AI_Warfare. Accessed 09 Jan 2020
13. Market Research Future (2019) Video streaming market research report-global forecast 2023. <https://www.marketresearchfuture.com/reports/video-streaming-market-3150>. Accessed 09 Jan 2020
14. MarketsandMarkets Research Private Ltd. (2019) AI in fintech market by component (solution, service), application area (virtual assistant, business analytics & reporting, customer behavioral analytics), deployment mode (cloud, on-premises), and region—global forecast to 2022. <https://www.marketsandmarkets.com/Market-Reports/ai-in-fintech-market-34074774.html>. Accessed 09 Jan 2020
15. Mittelstadt B (2019) Principles alone cannot guarantee ethical AI. *Nat Mach Intell* 1:501–507
16. NYC (2019) The New York City automated decision systems (ADS) task force. <https://www1.nyc.gov/site/adstaskforce/index.page>. Accessed 09 Jan 2020
17. PwC (2018) Risk management for sustainable growth in the age of innovation. <https://www.pwc.ru/ru/riskassurance/publications/assets/pwc-2018-risk-in-review-russian.pdf>. Accessed 09 Jan 2020
18. PwC (2019) How AI will transform the CFO's role. <https://www.pwc.com/gx/en/issues/data-and-analytics/artificial-intelligence/cfo-artificial-intelligence.html>. Accessed 09 Jan 2020
19. PwC (2019) Sizing the prize. What's the real value of AI for your business and how can you capitalise? <https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-analysis-sizing-the-prize-report.pdf>. Accessed 09 Jan 2020
20. Saariluoma PI, Leikas J (2020) Designing ethical ai in the shadow of hume's guillotine. In: Ahrum T, Karwowski W, Vergnano A, Leali F, Taiar R (eds) *Intelligent human systems integration 2020. Advances in intelligent systems and computing*, vol 1131. Springer, Cham, pp 594–599. https://doi.org/10.1007/978-3-030-39512-4_92
21. Shahriari K, Shahriari M (2017) IEEE standard review. Ethically aligned design: a vision for prioritizing human wellbeing with artificial intelligence and autonomous systems. In: Umiversity R (ed) *IEEE international humanitarian technology conference*. IEEE, Piscataway, pp 197–201. <https://doi.org/10.1109/ihtc.2017.8058187>
22. Tadviser (2019) Artificial intelligence (Russian market). [http://www.tadviser.ru/index.php/%D0%A1%D1%82%D0%B0%D1%82%D1%8C%D1%8F:%D0%98%D1%81%D0%BA%D1%83%D1%81%D1%81%D1%82%D0%B2%D0%B5%D0%BD%D0%BD%D1%8B%D0%B9_%D0%B8%D0%BD%D1%82%D0%B5%D0%BB%D0%BB%D0%B5%D0%BA%D1%82_\(%D1%80%D1%8B%D0%BD%D0%BE%D0%BA_%D0%A0%D0%BE%D1%81%D1%81%D0%B8%D0%B8\)](http://www.tadviser.ru/index.php/%D0%A1%D1%82%D0%B0%D1%82%D1%8C%D1%8F:%D0%98%D1%81%D0%BA%D1%83%D1%81%D1%81%D1%82%D0%B2%D0%B5%D0%BD%D0%BD%D1%8B%D0%B9_%D0%B8%D0%BD%D1%82%D0%B5%D0%BB%D0%BB%D0%B5%D0%BA%D1%82_(%D1%80%D1%8B%D0%BD%D0%BE%D0%BA_%D0%A0%D0%BE%D1%81%D1%81%D0%B8%D0%B8)). Accessed 09 Jan 2020 (in Russian)
23. Terry H (2018) Fukoku mutual—insurance firm to replace human workers with AI system. *The Digital Insurer*. <https://www.the-digital-insurer.com/dia/fukoku-mutual-insurance-firm-to-replace-human-workers-with-ai-system-2/>. Accessed 09 Jan 2020
24. The Montréal declaration for responsible development of artificial intelligence. <https://www.montrealdeclaration-responsibleai.com/>. Accessed 09 Jan 2020
25. UN & COMEST (2017) Report of COMEST on robotics ethics. <https://unesdoc.unesco.org/ark:/48223/pf0000253952>. Accessed 09 Jan 2020