
Issues of Legal Regulation of Robotics in the Form of Artificial Intelligence

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Abstract: This article is organized as follows to address the possibility of prejudice in AI systems. The article looks at what bias in AI systems looks like, gives several examples of prejudice, and explains why bias leads to discrimination. The topic of transparency is briefly discussed here, as well as how a lack of openness frequently exacerbates the problem of algorithmic discrimination. The core emphasis of this work is evaluated in the second half of this chapter: present legislative protections and their efficacy in combating AI-based prejudice. Following that, the paper concludes with a discussion of a few approaches to dealing with the prejudice and discrimination issues that have been raised throughout the work.

Keywords: Artificial intelligence, General Data Protection Regulations (GDPR), European Convention on Human Rights (ECHR), "e-persons", robots, legal regulation, autonomous vehicles, medical robots, and robo-advisors.

Artificial intelligence (AI) is now widely used and the vast majority of 'global society stakeholders' recognize the limitless possibilities of contemporary technology for their businesses. In the end, this is due to the increasing availability of data, which has become a priceless commodity in today's society. The capacity to access and utilize the information made accessible through these big data sets is increasingly vital to an organization's success.¹ As a result, using artificially intelligent systems to analyse this data has become normal practice; as a result, we can find indicators and predictors existing in the data that may be employed in automated decision-making processes.²

Because of the usage of intelligent technology, data interpretation and use of outputs to make informed judgments may now be done autonomously, usually by a decision-making algorithm rather than a human. A system of rules or instructions that must be followed, generally by a computer, in order to perform a problem-solving activity is referred to as an algorithm. This technical innovation has far-reaching implications; for example, time-consuming and time-sensitive jobs can now be completed in a fraction of the time they would

¹A Narayanan, "How to Recognize AI Snake Oil" (Arthur Miller lecture on science and ethics, Massachusetts Institute of Technology, 18 November 2019), www.cs.princeton.edu/~arvindn/talks.

²Anna Ubaidullaeva, Said Gulyamov Artificial intelligence and intellectual property law, <https://www.gazzettadinapoli.it/uzbekistan/artificial-intelligence-and-intellectual-property-law/>

have required earlier.³ The use of algorithmic decision-making systems is not a new or unfamiliar notion, and we are constantly exposed to the results of automated decision-making processes. To mention a few uses, these systems are used to evaluate credit card applications, sift CVs during recruiting procedures, assist in judicial decision-making, and validate diagnoses in medical settings, to name a few.

There are always implications with every great technological advance, and in this case, both legal and ethical problems arise. AI has a long history of prejudice and bias, particularly in automated decision-making, and individuals who are subjected to these automated choices are at danger of becoming victims of a fundamentally unjust and inequitable process.⁴

This article is organized as follows to address the possibility of prejudice in AI systems. The article looks at what bias in AI systems looks like, gives several examples of prejudice, and explains why bias leads to discrimination. The topic of transparency is briefly discussed here, as well as how a lack of openness frequently exacerbates the problem of algorithmic discrimination. The core emphasis of this work is evaluated in the second half of this chapter: present legislative protections and their efficacy in combating AI-based prejudice.⁵

The examination of these protections is critical, since they constitute the first line of defense in the fight against algorithmic bias and discrimination. Part of this chapter's analysis focuses on the legal protections provided by the General Data Protection Regulations (GDPR), specifically Article 22 of the GDPR, as well as the effectiveness of current anti-discrimination legislation, such as the European Convention on Human Rights (ECHR) and the Equality Act 2010. As a result, this study examines both EU-centric and UK-specific legislation.

The article then goes on to discuss these legal safeguards in light of the lawsuit launched against the Home Office by the Joint Council for the Welfare of Immigrants and Foxglove. This is the first known legal challenge to the employment of algorithms in the United Kingdom; as a result, this study assesses the efficacy of current legal protections, such as the General Data Protection Regulation (GDPR) and applicable anti-discrimination statutes, and how they were implemented in this case.⁶

Before getting into the complexities of bias in AI systems, it's critical to establish a shared understanding of what the phrase "artificial intelligence" means. A precise definition of AI is difficult to come by, and it is commonly assumed that no single definition exists; yet, for the purposes of this chapter, the House of Lords' definition is judged adequate in presenting a succinct summary of what is commonly meant by the word 'AI':

AI encompasses a wide range of concepts and systems, but it may be defined as a collection of algorithms that can alter and generate new algorithms in response to learning inputs and data, rather than depending exclusively on the inputs they were built to recognize. Intelligence is defined as the ability to alter, adapt, and grow in response to new

³R Baldwin, *The Globotics Upheaval: Globalisation, Robotics and the Future of Work* (Oxford, Oxford University Press, 2019).

⁴Юсупов, Сардор. "ЗАМОНАВИЙ ЖАМИЯТДА РОБОТОТЕХНИКА СОҲАСИНИ ФУҚАРОВИЙ-ҲУҚУҚИЙ ТАРТИБГА СОЛИШ МАСАЛАЛАРИ." *БАРҚАРОРЛИК ВА ЕТАКЧИ ТАДҚИҚОТЛАР ОНЛАЙН ИЛМИЙ ЖУРНАЛИ*(2022): 99-110.<http://www.sciencebox.uz/index.php/jars/article/view/1622>

⁵Saidakhrovovich G. S. REGULATORY LEGAL FRAMEWORK FOR THE REGULATION OF THE DIGITAL ECONOMY //Национальная ассоциация ученых. – 2020. – №. 58-1 (58). – С. 33-35.<https://cyberleninka.ru/article/n/regulatory-legal-framework-for-the-regulation-of-the-digital-economy>

⁶С.С. Гулямов И.Р. Рустамбеков Искусственный интеллект – современное требование в развитии общества и государства <https://drive.google.com/file/d/1DQ7NJYptIZoWxKLwGbTEzc9E10HePyjM/view>

input.⁷ Because of the enormous potential demonstrated by these intelligent systems, it is sometimes assumed that when AI is used in decision-making, human involvement is no longer necessary or present because of the gadgets' ability to "alter, adapt, and develop". This is partially due to our expectation that computer choices would be made only on the basis of facts. However, the converse is true: bias in decision-making algorithms is frequently prevalent due to human prejudice already present in the data, and the algorithm then reinforces this existing bias. As a result, it's not totally accurate to say that AI-powered automatic decision-making "takes the place of human discretion."⁸ Thus, in order to begin to free these systems of prejudice, it is necessary to look at the bias that exists inside algorithmic decision-making processes in more depth, as well as to investigate why this bias exists and how it leads to discrimination.

The term 'bias', like the phrase 'artificial intelligence,' has a variety of connotations depending on the context in which it is used. The term bias can be used in a neutral context or with a "strong moral connotation." This is because, in its most basic form, 'bias' refers to a preference for one thing over another, and because of this, the term may be used in any situation. Friedman and Nissenbaum use the example of a person choosing ripe fruit over damaged food to illustrate their point. Because they preferred the ripe fruit over the damaged fruit, the person is 'prejudiced.'⁹

Compare this to a person who refuses to hire someone because of their race; the individual is still 'prejudiced,' but there is a moral significance to the phrase. As a result, it is important to evaluate the word prejudice in a moral and ethical perspective for the sake of this research. As a result, when we think about prejudice, we're thinking about it in terms of its AI equivalent, algorithmic bias (which results in unfair and often discriminatory outputs).¹⁰

Discrimination caused by automated decision-making is frequently the result of biases already present in the data used to train the algorithm. According to Shrestha and Yang, this suggests that the new, automated system perpetuates historical preconceptions and stereotypes. Unfortunately, individuals from minority backgrounds are the ones who are most harmed, since they are discriminated against based on qualities such as gender, color, and even socioeconomic aspects like where they live and went to school.

The area of robotics is advancing at a rapid rate. Rapid expansion is occurring across the board in the sector, as well as in completely new areas. And these discoveries have reignited an important debate about robot ethics, as we explore who and what is accountable for keeping robots on the correct track.

Artificial entities now have their own legal character, thus humans aren't the only ones regulated by predetermined law. Due to its implications in omnipresent monitoring, patient

⁷С.С. Гулямов И.Р. Рустамбеков, Проект концепции Республики Узбекистан в области развития искусственного интеллекта на 2021-2030 годы
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⁸Yusupov, Sardor ROBOT TEXNIKASINI TARTIBGA SOLISH MUAMMOLARI: HUQUQIY VA AXLOQIY MUAMMOLARNI HAL QILISH BO'YICHA BA'ZI KO'RSATMALAR // ORIENSS. 2022. №3. URL:<https://cyberleninka.ru/article/n/robot-texnikasini-tartibga-solish-muammolari-huquqiy-va-axloqiy-muammolari-hal-qilish-bo-yicha-ba-zi-ko-rsatmalar>

⁹Bakhramova, Mokhinur. "THE ORIGINS OF THE ODR SYSTEM AND ITS ADVANTAGES OVER OTHER ADR METHODS." *БАРҚАРОРЛИК ВА ЕТАКЧИ ТАДҚИҚОТЛАР ОНЛАЙН ИЛМИЙ ЖУРНАЛИ* 2.1 (2022): 527-530.<http://sciencebox.uz/index.php/jars/article/view/1045/972>

¹⁰Bakhramova, M. . (2022). E-Arbitration and Its Role in Modern Jurisprudence. *Journal of Ethics and Diversity in International Communication*, 1(8), 15–20. Retrieved from <http://openaccessjournals.eu/index.php/jedic/article/view/960>

autonomy, non-human therapy, deceit, and AI interpretability, various research in the assistive robotics industry have examined ethics.¹¹ These problems and challenges should be kept in mind by robotics start-ups, since they have a direct influence on end-users, and legislation surrounding these themes is now being implemented to assist organizations in designing better robots.¹² Companies in the robotics industry must be proactive and ethical in their response to future developments, putting user rights at the forefront of the design process.

Clarity about the state of AI will be critical in gaining people's trust. What to do with robots that operate in more independent ways is one of the most significant, and legally disruptive, concerns brought by AI. It is critical that the regulation advances in this area.

There has previously been talk of giving robots electronic personhood, in which AI and robots would be deemed "e-persons." This would give them obligations and fundamentally change how they are seen in the perspective of human law. In this respect, if something goes wrong, the AI or robot might be held liable under present frameworks. Although the notion was rejected, the larger debate about how we place robots inside regulatory systems and who has ultimate accountability continues.¹³

An further complication arising from determining who is responsible for the damage caused by more autonomous robots may be resolved by enacting a mandatory insurance program. This might be a reflection of the car sector, which already has a procedure like this. The insurance sector would be responsible for developing new products and types of offerings that are in accordance with current advancements in robotics and society.¹⁴ With this in mind, AI engineers should be aware that the creation of autonomous vehicles, medical robots, and robo-advisors may soon become highly regulated, costly, and subject to a slew of liability chains.

As a result, there's a chance that these insurance pressures will lead to better robots design. If manufacturers are required to insure their robotic devices against damage as well as provide safe-to-use equipment, there is an extra motivation to develop products that prioritize user experience.¹⁵ The good news is that because regulation is aimed toward generating goods that are of the best possible level for user experience, this development is expected to lead to enhanced product design, as well as better robotics development and delivery of machines into the field.

Consider Internet of Things (IoT) devices, which have been the subject of rising legislation in the UK in recent years as a result of historical vulnerabilities and little manufacturer support once they leave the production line. The answer is in software, which can continuously

¹¹The EU White Paper on AI left key concepts such as "high risk" and "robustness and accuracy" undefined. See European Commission, "White Paper on Artificial Intelligence: A European Approach to Excellence and Trust" COM (2020) 65 final. Contrast the European Commission's proposal for a regulation laying down harmonized rules on artificial intelligence (Artificial Intelligence Act) COM(2021) 206.

¹²M Bakhramova- THE ROLE AND IMPORTANCE OF ONLINE ARBITRATION AND ELECTRONIC DISPUTE RESOLUTION IN PRIVATE INTERNATIONAL LAWТЕОРЕТИЧЕСКИЕ АСПЕКТЫ ЮРИСПРУДЕНЦИИ И ..., 2021, <https://www.elibrary.ru/item.asp?id=46968096>

¹³P Low and A Mattoo, "Is There a Better Way? Alternative Approaches to Liberalization under GATS," in P Sauve and RM Stern (eds), GATS 2000: New Direction in Services Trade Liberalization (Washington D.C., Brookings Institution, 2000), at 449.

¹⁴Mokhinur, Bakhramova. "NECESSITY AND IMPORTANCE OF ELECTRONIC DISPUTERESOLUTION IN INTERNATIONAL LAW." *Збірник наукових праць SCIENTIA* (2021), https://scholar.google.com/scholar?hl=en&as_sdt=0,5&cluster=18030531839024872669

¹⁵LB Moses, "How to Think about Law, Regulation and Technology: Problems with Technology as a Regulatory Target" (2013) 5(1) Law, Innovation and Technology 1.

protect an IoT device, or in this example, a robot, beyond its physical form.¹⁶ Choosing an operating system that prioritizes security and the end-user helps a robot to adapt to changing regulations more effectively over time.

Using big embedded systems like Ubuntu Core, autonomous robots may be outfitted with many levels of security built right into the operating system, with system integrity assuring that the program is free of tampering.¹⁷ In terms of IoT, this adds another layer of security to the data collected, in accordance with GDPR and broader security concerns in the robotics business.

In time, software will supplant hardware as the most important factor in determining a robot's worth. As a result, confidence in machines will be built on the foundations of security and dependability, while cooperation will encourage more dynamic robots, such as those that can prolong their lifespans through third-party apps. Snaps, for example, can help in this situation. Snaps are pre-configured software packages that are simple to build and distribute. They are secure to use and can update automatically and transactionally to ensure that an update never fails. If a security vulnerability in an app's libraries is detected, the app's publisher is contacted so that the app may be rebuilt swiftly and sent out with the provided remedy.

Finally, implementing regulations for the robots sector has genuine benefit since it will deliver the best possible user experience. The building blocks of robots are software, which will lead to greater concord between autonomous machines and the laws that govern them.

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¹⁶K Irion, "AI Regulation in the European Union and Trade Law: How Can Accountability of AI and a High Level of Consumer Protection Prevail over a Trade Discipline on Source Code?" (23 January 2021), <https://ssrn.com/abstract=3786567>.

¹⁷D Ernst, "Competing Artificial Intelligence Chips: China's Challenge amid Technology War" (26 March 2020), CIGI Special Report, www.cigionline.org/publications/competing-artificial-intelligence-chips-chinas-challenge-amid-technology-war. See also Winn and Chiang's Chapter 16 on the AI rivalry between China and the USA.

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