

An Overview of the Challenging Paths Ahead for the Future of Artificial Intelligence Law

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Abstract; Today, artificial intelligence, using its capabilities such as text and image processing, has many applications in education, health and wellness, career development, personal affairs, and even law. Among its applications are the analysis of raw data for research, content production, disease detection and identification, and marketing.

Therefore, artificial intelligence is progressing at a rapid pace, and its monitoring is visible in our lives and work and in the not-so-distant future, it will cover an important part of our lives. Therefore, it is important to understand the paths and challenges facing the future of artificial intelligence law.

In this regard, this research discusses the relevant field of artificial intelligence law, and also considers what kind of regulatory issues artificial intelligence projects at the national and international levels can add to the current digital law discourse.

Relying on the literature on artificial intelligence law, this research points out other problems related to the subjectivity of artificial intelligence law and the real personality of artificial intelligence that have not yet been recognized in digital law.

Keywords: *Digital Rights, Artificial Intelligence Rights, International, Privacy, Intellectual Property*

1. INTRODUCTION

It is no coincidence that artificial intelligence is one of the most widely used terms in all branches of the transhuman sciences. The idea that machines can become equal in intelligence and perception to humans has occupied many writers and scientists for decades.

From the computer system in the film *A Space Odyssey* to the superhuman androids in the Western world, all prove that artificial intelligence has encompassed a wide range of human imaginations. On the other hand, the study of law and information technology is accompanied by an inherent contradiction, because while technology encompasses concepts such as internationalization and globalization, law, in most cases, is still limited to a certain extent by national borders.

Partly overcoming this contradiction is the concept of the rule of law, which contains within itself the idea that "the rule of law is good for everyone," a view that apparently enjoys international support.

It is acknowledged that this strong support for the rule of law is based on different interpretations of what the rule of law is and in some cases may even be hijacked by those who wish to use it as a cover to hide actions that contradict its ideals. However, in most cases, the rule of law remains an ideal, similar to the concept of "good," in the sense that everyone supports it but has conflicting beliefs about what it is.

However, as society becomes increasingly digital, a second, more subtle threat is on the rise. This threat comes from technology, particularly technology that includes elements of artificial intelligence. As great strides are being made in the academic field of artificial intelligence, this technology is making its way into digital decision-making systems, which in turn are replacing human decision-makers, institutions, both public and private, that are seeking to increase their effectiveness.

Human decision-making is currently assisted by digital decision-making systems and this function is increasingly given to machines, the field of governance is no exception. The threat to the rule of law lies in the fact that most of these decision-making systems are “black boxes”, because they use very complex technology that is fundamentally beyond human cognitive capacities, and the law also prevents transparency to some extent.

It is here that the fulfillment of the demands of the rule of law, such as insight, transparency, fairness and explainability, is almost impossible, which in turn raises questions about the extent to which the rule of law is a viable concept in a technocratic society.

Therefore, given that in recent years, especially the past year, the growth of artificial intelligence has shaped human social life, the main question and issue is what is the legal path and legislative challenges in the future of artificial intelligence? Will regulating this technology remain an opportunity for the future and human life? The present research method is library and documentary.

The data is from the most authoritative and latest domestic and foreign scientific studies focusing on intellectual property rights. The data analysis method is also descriptive-analytical.

2. RESEARCH BACKGROUND

Hanieh Zakirinia, (2023), *The Nature and Basis of Civil Liability Arising from Artificial Intelligence in the Laws of Iran and the European Union*. Today, it is essential to adapt regulations to new technological challenges. Therefore, choosing a clear and coherent civil liability regime for artificial intelligence will be crucial.

National laws differ and offer varying degrees of flexibility to adapt to the challenges of artificial intelligence. Fault-based liability is a general assumption in most European legal systems. In the laws of some countries, the liability of artificial intelligence can be explained as liability for the acts of others based on customary invocation. When there are multiple responsible parties, joint liability can be justified.

Mohammad Mehdi Davar, (2023), *Authorizing the Ethical Use of Artificial Intelligence Using Farabi's Theory of Natural Rights and Happiness*. The discussion of artificial intelligence as an emerging phenomenon in the present era has always faced numerous ethical challenges. The spread of artificial intelligence is inevitable, and since this phenomenon is related to the human and social world, and everything related to humans and society falls within the realm of ethics and law, it is necessary to know whether the use of artificial intelligence is ethical or not? And also, do humans have the right to use it or not? It seems that Farabi's thought in the field of practical wisdom can answer this issue.

By reflecting on the theories of this prominent philosopher in civic wisdom, the theory of natural rights is received, and on the other hand, Farabi's ethical views are also in harmony with the theory of natural rights and with Farabi's civic wisdom in general. Therefore, it is possible to consider and explain this issue according to Farabi's ethical and civic school.

Anahita Seifi and Nejm Harzamkhah, (2022), Artificial Intelligence and the Challenges Ahead in the Field of International Human Rights, An Approach to the Right to Work. Despite the various benefits of "artificial intelligence" in human daily life, the world has witnessed the undesirable effects of its use in various areas, including the job security of the weak and vulnerable segments of society due to the automation of some jobs; an issue that can entail a violation of one of the fundamental human rights, namely the right to work. However, according to the provisions of the International Bill of Human Rights, governments not only have the duty to implement and ensure the right to decent work, but also must refrain from creating any obstacles in the process of enjoying this right. Therefore, the main question is what should be done in the conflict between the benefits of using artificial intelligence and the fundamental right to work and having job security? It is certain that, given the obligations that governments have to ensure and implement the right to work, they must, in addition to providing the necessary conditions to ensure welfare and new employment opportunities for people who have lost their jobs due to the automation of some jobs, provide facilities to provide the necessary training in society to become more familiar with artificial intelligence and its applications with the aim of increasing the productivity of this new technology in society.

Stanley Greenstein, (2022), Maintaining the Rule of Law in the Age of Artificial Intelligence. The study of law and information technology is accompanied by an inherent contradiction, because while technology is developing rapidly and encompasses concepts such as internationalization and globalization, traditional laws can in most cases be slow to respond to technological developments and are also largely limited to the national level.

However, a serious threat to the rule of law is emerging in the form of an attack by technological advances in artificial intelligence. As the academic field of artificial intelligence makes great strides, this technology is making its way into digital decision-making systems, effectively replacing human decision-makers.

A prime example of this development is the use of artificial intelligence to assist judges in judicial decision-making. However, in many situations, this technology is a black box, mainly due to its complexity, but also because it is protected by law.

This lack of transparency and the reduced ability to understand the functioning of these systems, which are increasingly used by governance structures, challenge traditional concepts of the rule of law. This is especially true in relation to concepts that are particularly relevant to the rule of law, such as transparency, fairness and explainability.

Sylvia Wotczak, (2022), Granting Legal Mindfulness to Artificial Intelligence. This article addresses the problem of granting legal mindfulness to artificial intelligence, especially with regard to civil law. The myth that the criteria for legal mindfulness are emotion and reason must be rejected.

The argument that AI may have potential legal subjectivity, based on the analogy with animals or legal persons, suggests the existence of a hierarchy of entities organized according to their degree of similarity to humans. Also, the place of an entity in this hierarchy determines the scope of subjectivity attributed to it.

Rather, participation or presence in social life, whatever its role, is the real criterion of subjectivity. Moreover, it is clear that even if AI does not currently participate significantly in social life, it will in the near future. Despite the potential risks associated with attributing a kind of subjectivity to AI, such periods are inevitable and should be considered sooner rather than later.

3. ARTIFICIAL INTELLIGENCE; DEFINITION AND CONCEPT

The image below provides a better understanding of the definition of artificial intelligence. Machine learning and deep learning have similarities and differences. The similarity between these two areas is that both use algorithms to design machines with special functions that do not require human intervention.

The most important difference between deep learning and machine learning is that in deep learning, the algorithms have more layers and are more complex. Therefore, artificial intelligence is a program that is inspired by human intelligence and is implemented on machines. In this way, the machine can do the same things that a human does in a shorter time and with greater accuracy (Davar, 2023)

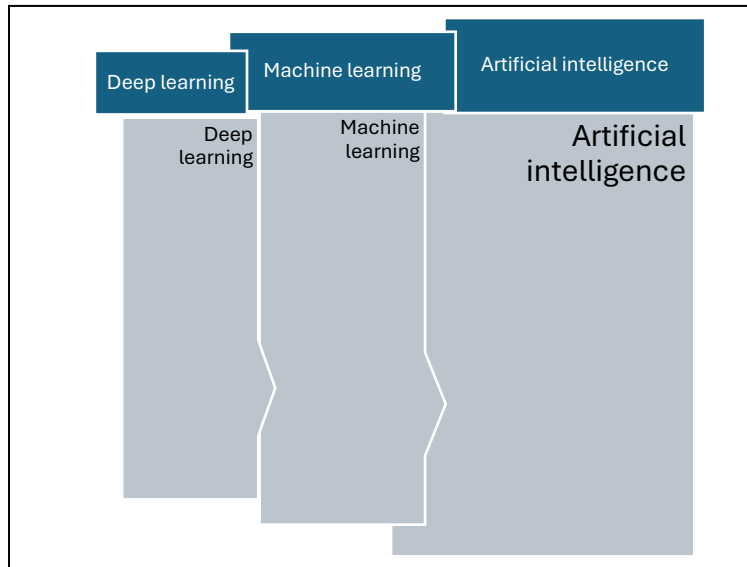


Figure 1. Difference between the three concepts of artificial intelligence, machine learning and deep learning.

Programs are often implemented on computer systems, and through this program, the computer can make decisions, plan or predict the outcome of the problems presented to it.

Components of artificial intelligence applications:

First - Machine vision: It is a technology that attempts to provide a type of vision for machines. Machine vision is used in various industrial processes from face recognition, video analysis and object recognition to pattern recognition.

Second - Speech processing: Speech processing systems enable intelligent machines, such as smartphones, to communicate with users through spoken language. Probably the most famous speech recognition technology you have heard of is Apple's product.

Third - Data mining: As the name suggests, it is related to the field of data analysis, especially big data. In fact, in data mining, the task of extracting patterns from data is attempted to be left to machines. With this brief explanation, it can be understood how important data mining can be, because patterns extracted from business data can provide very useful information for future plans of companies. This branch of artificial intelligence is a combination of statistical tools and artificial intelligence with the management of aggregate

data. Data mining usually has wide applications in business (insurance, banking, etc.), scientific research (astronomy and medicine), and security issues (detecting criminals and terrorists).

Fourth- Natural Language Processing:

Natural language processing is the teaching of human language to machines. This part of artificial intelligence is where natural language and artificial languages (such as programming languages) come together. Efforts to process language with the help of computers have a longer life than many branches of artificial intelligence.

Najm- Machine Learning: Machine learning and its related concepts are a subfield of artificial intelligence that is related to the ability of machines to learn; in fact, machines are able to learn and improve automatically without being programmed to learn in advance.

Therefore, machines in different places are able to work with data and can improve their learning with the data received. Machine learning is the automatic learning of computers, and its goal is for computers to reach new patterns and make better decisions as a result of working with data.

Machine learning is now used in every industry and job.

Therefore, there are four main groups of artificial intelligence systems, namely: first - "reactive machines" the most basic type of artificial intelligence, second - "limited memory" with decision-making power, third - "theory of mind" with the ability to think, fourth - "self-aware artificial intelligence" with the ability to intuition and empathy, and the stages of evolution of this technology are parallel and continuous.

Artificial intelligence generally refers to any human-like behavior performed by a machine or system. In the most basic form of artificial intelligence, computers are programmed to "imitate" human behavior using extensive data of similar behavior samples. This behavior can range from distinguishing between a cat and a bird to performing complex activities in a manufacturing center.

With artificial intelligence, machines can work efficiently, analyzing vast amounts of data in the blink of an eye, and solving problems through supervised, unsupervised, or semi-supervised learning.

4. LAWS AND ARTIFICIAL INTELLIGENCE FROM A LEGISLATIVE PERSPECTIVE

One of the challenges posed by the expansion of artificial intelligence is the need for legislation in this emerging field. Every new phenomenon in societies requires laws that determine and guarantee the rights of individuals.

Although at first glance and in some cases, current laws can be applied to new phenomena, the need for new laws is certainly felt in light of the innovations created. For example, identity fraud using artificial intelligence becomes easier and increases, and cybercrimes that occur using artificial intelligence require precise regulations to prevent and control them.

With the expansion of artificial intelligence-based programs and their use in various jobs, issues such as civil liability arising from decisions and the performance of artificial intelligence will also be of great interest and a subject of discussion and research.

If an act performed by artificial intelligence harms someone, who is responsible for it? An issue that has also been the subject of much debate in self-driving car technology is who is responsible if a car has an accident while driving itself? There are also issues raised in the discussion of intellectual property, such as

what will be the form of intellectual property rights if artificial intelligence reaches a stage where it can have its own works and inventions? All of these issues and many other topics will be the subject of much research and discussion in order to find appropriate answers and solutions to the questions and challenges ahead in this field (Saifi and Razmkhah, 2022).

5. PROVISIONS OF THE 2024 CONVENTION ON ARTIFICIAL INTELLIGENCE

The Council of Europe's human rights body announced that the first legally binding international treaty on artificial intelligence was ratified in 2024 by the member states of the European Union, the United States and the United Kingdom.

The Convention on Artificial Intelligence, which has been in the process of being drafted for several years, was adopted in May after discussions and negotiations between fifty-seven countries. The Convention, while promoting responsible innovation, also addresses the potential risks of artificial intelligence. The Convention focuses mainly on protecting the human rights of people affected by artificial intelligence systems and is separate from the EU's AI law.

The EU's AI law includes comprehensive provisions on the development, deployment and use of artificial intelligence systems in the EU's internal market. The UK's Justice Secretary said in a statement: "This convention is a major step towards ensuring that these new technologies can be used without undermining our most ancient values, including human rights and the rule of law, and are, where necessary, restrained."

The Council of Europe, founded in 1949, is an international institution distinct from the European Union that works primarily in the field of human rights protection. This international institution, which was established on the basis of the development of democracy, human rights, the rule of law and the exploitation of cultural cooperation, has forty-seven member states, including twenty-seven EU member states.

A special committee within this institution began the necessary studies in 2019 to develop a convention on artificial intelligence, and this process was followed in 2022 by the formation of other committees to draft the text of the convention and continue negotiations on its contents.

6. FINDINGS

After examining the research topic, important factors related to the "future challenges of AI law" were deduced, which are:

6.1 Possibility of abuse of power

Krieger's argument is that the rule of law is fundamentally about power, where its main purpose is to make the law govern in order to prevent the possibility of abuse of power by those who use this power in an arbitrary manner. He states that there are many ways to exercise power and arbitrary ways should be avoided.

It is in this context that the Venice Commission's criterion for "preventing abuse of power" is relevant. There is a correlation between the definition of the rule of law from the perspective of power on the one hand and the concept of mutual interaction on the other.

For mutual relations to flourish, a certain balance in the power relationship between rulers is necessary. However, it is argued that the transfer of government to technology, as we saw in the Loomis case, entails a monopoly on access to technology.

Essentially, only those who govern have the resources to produce or purchase the technology that is used to make decisions about citizens. This ever-increasing imbalance disempowers the rulers in favor of the ruled.

For example, by consolidating power over technology in the hands of the rulers, the risk of unrestricted executive powers increases, which is contrary to the rule of law as stated by the Venice Commission. Furthermore, an aspect of the abuse of power identified by the Venice Commission is irrational decisions.

However, to what extent can decisions made by AI be challenged as “irrational” when they cannot be understood at first, but also when human rationality is not necessarily a prerequisite for an algorithmic solution? A final complication in the balance of power is the fact that the producers of AI technology are private actors, the balance of power essentially having to be achieved between three entities, namely those who govern, those who are governed and the private companies that develop the technology to mediate.

The Venice Commission also recognises that there may be circumstances in which private actors exercise powers traditionally exercised by states. However, the examples given include the management of prison services and it is argued that situations in which private actors take over the discretion of judges have never been foreseen.

6.2 Challenging traditional legal protections

The increasing use of AI to predict human behavior, especially criminal behavior, also challenges some traditional legal concepts. One of the legal concepts that is being challenged is that the accused is presumed innocent until proven guilty.

For example, the use of algorithmic risk assessment in criminal trials to determine recidivism raises the question of whether the accused is presumed to be guilty of a potential crime, i.e., the propensity to commit a crime before it actually occurs. This is well-recognized in the principles that recognize that there is no crime or punishment without law, which are also included in the Venice Commission.

The presumption of innocence and the right to a fair trial are also included in the Venice Commission’s standards on access to justice. Another challenge to the traditional view of the rule of law is the extent to which the judiciary can be considered independent by relying on AI developed by private companies. The Venice Commission calls for legal guarantees to ensure the independence of the judiciary.

According to the Venice Commission, independence means that the judiciary is “free from external pressure”. While companies that produce algorithmic risk assessments may not directly pressure judges, the question that needs to be asked is to what extent individuals (judges, juries and probation officers) dare to act against the risk assessment made by technology. This in turn raises issues of a philosophical nature in which technology is endowed with a degree of autonomy.

Elwell argues that technology has acquired an autonomy from its connection to the legitimacy of scientific progress in general. In other words, technology has legitimacy because of its scientific and objective conception.

6.3 The Challenge of the Nature of Legal Personhood

The Claimed Hierarchy of AI? In the literature, two key analogies are used when discussing the possibility of attesting to legal personhood or legal personality for AI systems: one between AI and animals and the other between AI and legal persons or collective entities.

Many scholars agree that legal subjectivity in the form that has been attested to a human is unique to the individual and cannot be attested to AI, especially since, at least for now, AI shows no evidence of being conscious or intelligent.

In contrast, the analogy with animals seems more appropriate, since AI's capabilities are limited in relation to humans. On the other hand, AI can be considered analogous to collective entities, in the sense that it is an artificial being, a non-living creature lacking feelings and consciousness.

Moreover, according to the traditional Western view, animals and legal persons are the only real candidates for a broader or more limited legal subjectivity alongside humans. Many foreign jurists would be surprised to learn that in some countries or cultures, rivers are also recognized as objects of law, such as the Ganges Jamuna in India and the Wanganui in New Zealand. However, using the analogy with animals or legal persons to justify granting potential legal subjectivity to AI requires a certain superficial assumption.

First, the analogy assumes that there is a hierarchy or sequence of entities organized according to their degree of similarity to humans, and second, that a being's place in this hierarchy or sequence (based on the degree of development) determines the extent of the subjectivity attributed to it.

Animals, therefore, occupy the lowest position in the hierarchy, because, despite possessing sentience, they lack the reason traditionally considered to be a fundamental and uniquely human characteristic.

Similarly, contemporary AI, which lacks sentience and whose reason is incomplete, could occupy the next position. The next place in the hierarchy is occupied by collective entities, because they lack feeling, but they have collective reason. Such reason corresponds to human reason and may surpass it because its context is human.

Finally, at the top of the hierarchy are humans. These are intelligent and have reason, which according to traditional views is the best prototype of its kind. Taking this line of thinking into account, it can be predicted that if artificial intelligence develops to the point where it can achieve full reason or a form superior to human reasoning, and if it acquires some feeling, it will rise above collective entities and be ranked.

On a par with humans Advocates of this view believe that artificial intelligence cannot acquire a legal subjectivity different from that enjoyed by animals or collective entities, but must be similar and derivative. Thus, in a given legal system, collective entities may have some rights that are specific to humans but not attributed to animals, which are granted on the basis of similarity. In such a system, AI is superior to animals, which may have rights similar to those of humans. A good example of this type of thinking is illustrated in copyright law:

It has been argued that AI cannot be recognized as an author based on various cases involving animals, most notably the famous monkey selfie case.

6.4 Participation or Presence of Artificial Intelligence in Social Life

Considering the above and considering granting legal subjectivity to AI, two key questions arise:

First, does AI participate in social life?

Second, does AI have or will have intrinsic value or utility for social relations? In answering these questions, it should be remembered that the assumption is that AI will imitate or surpass a man, at least in one

important area, or perhaps all of them. Of course, such an assumption requires imitating or surpassing positive aspects or personalities, and not negative aspects evaluated according to human standards.

With regard to the first question, when observing the commercial market, it is clear that AI will soon participate in social life, even if it does not currently, despite the fact that many people believe the opposite. Even insisting that AI does not have the potential to make decisions, but a human has the power to do so, and that AI only provides a basis for human decisions, namely the result of reasoning, it cannot be denied that AI communicates with it.

A man has the ability, through an understandable language, to influence his decisions and personality. This is a much more advanced function than a simple calculator used to calculate the price when buying a product.

It is more of a “role” than a “function”. However, at this point it is important to highlight a different reality from common belief: it is not the autonomy of AI’s action that is the most important consideration.

Even the most self-driving car will only be a means of travel, assuming it is not equipped with some specific functions. The answer to the second question, regarding the intrinsic or socially beneficial value of AI, is also quite clear today.

For many people in Western culture, AI has a socially beneficial value. If this were not the case, it would not be acceptable for an AI to provide therapy to the elderly. In this context, the end does not justify the means: not all means of relieving loneliness are acceptable. A person who talks to non-existent friends or treats a teddy bear as a living, sentient being is often suspected of being mentally disturbed and pressured to seek psychiatric help.

Given this, why should talking to an AI and developing some degree of dependence on it be considered acceptable and useful? We are clearly not concerned about an AI becoming part of social life.

CONCLUSION

The rule of law as a legal concept is so elusive that the more we try to define it, the more diffuse it seems to become. The spectrum that describes the rule of law is long. It is considered as a political ideal, a mechanism for limiting the abuse of power, and also a mechanism for ensuring that society upholds certain values, for example, human rights.

The common thread of the rule of law is that it is seen as a concept that is worth protecting despite its susceptibility to political abuse. On the other hand, modern technologies are increasingly used in society, of which artificial intelligence is a prime example.

As machine learning techniques improve, artificial intelligence systems are also being used to assist human decision-makers in almost every field. It is to be expected that as these technologies become better at aiding decision-making, more control and responsibility will be transferred to them.

It is therefore important to note that these technologies challenge the ideals associated with the rule of law as a concept of traditional law. In addressing the harms associated with AI in relation to the rule of law, a common thread that emerges is the way in which it potentially hinders human flourishing.

While this may not be the first traditional connection to the rule of law as a concept, it is nevertheless important to address the human factor as a cornerstone of society. In this research, we conclude that the

legal challenges and requirements facing the law and the future use of AI are unpredictable and that we must be forward-looking and plan to meet these challenges.

Recommendations

The need to establish uniform international laws on the safe use and application of artificial intelligence.

Establish detailed and precise laws regarding users of artificial intelligence.

Legislation in the field of privacy and copyright or intellectual property in the use of artificial intelligence.

Creating a mindset of artificial intelligence rights among users, producers and developers of artificial intelligence.

If there is ever a new "race" of intelligent machines with human-level consciousness, there is a need to legislate for it as a real person of the machine or artificial intelligence.

The most important legal point in the discussion of artificial intelligence is the announcement and transparent information about the type and amount of data used by artificial intelligence, as well as the use of a specific artificial intelligence label on its products and services, and the distinction of human products from artificial intelligence.

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