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International legal regulation of artificial intelligence

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Abstract:

This study aims to know the international legal regulation of artificial intelligence as one of the outcomes of the Fourth Industrial Revolution, and as it affects all fields, especially technical and technological ones. This requires that technicians be informed of the legal aspects of artificial intelligence in order to avoid the negatives that may result from its uses, and to benefit from its positives and advantages. The study concluded that most international and national legislation related to artificial intelligence only addressed its characteristics and role in the contractual field, forgetting the most important aspect, which is the legal regulation of the technical aspect of artificial intelligence. As a double-edged sword, despite its increasing role in most areas of our daily lives, developing it in an irresponsible manner may place the fate of humanity in the hands of a force that does not see things from a human point of view.

**** Dr. Belbey Ikram***

Introduction:

The world is currently witnessing a Fourth Industrial Revolution, which has presented numerous unique growth opportunities for various global economies. Unlike previous industrial revolutions that focused solely on automating production processes and increasing profits, the Fourth Industrial Revolution has introduced a completely different model: a blend of physical, digital, and biological sciences.

In the context of the modern revolution, the integration of artificial intelligence (AI) and robotics into our daily lives is accelerating. AI and machine learning will become an essential part of everything we use, such as home appliances, cars, sensors, and drones. These new technologies seek to find faster and more efficient ways to accomplish various daily tasks, or even, in other cases, to develop artificial intelligence that surpasses human intelligence (Abdullah 2019, pp 15-16).

Despite the importance of AI in the world of technology, there is no universal, comprehensive, and agreed-upon definition of AI. AI is more of a field than a concept that can be easily defined. The accepted definitions of AI vary depending on the discipline in which it developed. AI is derived from fields other than computer science. Such as psychology, neuroscience, cognitive science, philosophy, linguistics, probability, and logic, AI as a field of knowledge can be divided into several broadly intersecting subfields, such as machine learning and robotics, neural networks and vision, as well as natural language processing and speech processing (Andersen 2018, p 8).

AI, based on its tools, represents the ideal manifestation of scientific knowledge and the foundations for its application and use to serve all societies. The impact of the technology used by humans represents the focus of attention, requiring regulation within legislation that integrates its concept to encompass both the physical and virtual aspects of AI systems. Some legislative trends have addressed the regulation, development, or modification of their legal positions to provide an effective approach that includes solutions for the various successive generations of information technology and algorithms that know no boundaries in their areas of application (Muhammad Siddiq 2021, p 17).

Legislation dealing with AI systems and their operating technology is the basis for regulating their effects, and encompasses the phenomena of the virtual world within a legal framework that addresses the outcomes of the legal relationships arising from these systems in general, without specifying them for a specific application.

However, the lack of compatibility and harmony between law and technology could create a gap between the theoretical legal framework and technical application, hindering technological development and leading to the emergence of negative practices that could harm both consumers and producers.

This study aims to identify international legal frameworks for artificial intelligence, protecting its users from the potential harms of AI technology and benefiting from its advantages.

Perhaps the most effective way to avoid the potential negatives of AI use is for technologists to be familiar with the relevant legislative frameworks and for legal professionals to be fully conversant with the technical aspects of the process in general.

This necessarily requires that legislation keep pace with technological development so that the two go hand in hand, as the implementation of technical outcomes is regulated by relevant legislative frameworks. However, most international and national legislation related to AI has ad
dressed only its characteristics and role in the contractual sphere, neglecting the more important aspect: the legal regulation of the technical aspect of AI.

Accordingly, this study attempts to answer the following question: What is the position of each of the states and international bodies regarding the legal rules applicable to the uses of artificial intelligence programs and their treatment of the various aspects of its technologies?

We will answer this question using two approaches: descriptive and analytical. by describing the phenomenon of artificial intelligence and the international regulatory stance on it, as well as analyzing the various international legal rules, decisions, and recommendations issued by various international bodies regarding the uses of artificial intelligence technologies, according to the following two topics:.

THE FIRST TOPIC: International legal rules related to artificial intelligence

In this topic, we will learn about the various binding international legal rules for artificial intelligence, represented by all binding international agreements, and the resolutions of the United Nations General Assembly, the Human Rights Council, and the Council of Europe (the first requirement); as well as the non-binding international legal rules for artificial intelligence issued by various international bodies (the second requirement).

First requirement: Binding international legal rules for artificial intelligence

Indeed, there are a large number of legal rules applicable to artificial intelligence, such as the basic rules governing human rights in conventions (such as the prohibition of discrimination and arbitrariness, the protection of individual liberty, freedom of expression, freedom of opinion, procedural rights, and data protection). In this regard, we find, for example, the 1966 International Covenant on Civil and Political Rights, particularly Article 17, and the 1948 Universal Declaration of Human Rights, particularly Articles 3 and 12. The same applies to international humanitarian law in armed conflicts, such as autonomous weapons systems.

Finally, there are specific conventions, particularly in the field of data protection, that also cover artificial intelligence systems. For example, Convention No. 108 of the Council of Europe of 1981, the first binding international convention in the field of data protection and privacy, aims to ensure respect for the fundamental rights and freedoms of every individual, regardless of their nationality or place of residence, and in particular their right to privacy with regard to the automated processing of their personal data ("data protection") within the territory of each Contracting Party.

In this regard, we find several sources, which we mention as follows:

First section: United Nations General Assembly resolutions

United Nations General Assembly Resolution 3384 (XXX) of November 10, 1975, included the Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind (UN [1975] UNGA 19; A/RES/3384 (XXX)).

Its content stipulated the promotion and realization of the principles of the Charter of the United Nations, the Universal Declaration of Human Rights, the two International Covenants on Human Rights, the Declaration on the Independence of Colonial Peoples and Countries, and the Charter of the Rights of States. This is in addition to the Special Rapporteur on the Right to Privacy issued by the United Nations General Assembly in 2022. The guiding principles underlying privacy and the protection of personal data in this resolution form a structural part of legal systems, provide guidance for interpretation, and help fill legal gaps. The principles contained in this resolution are: the principle of legality, legitimacy, and legitimacy; the principle of consent; the principle of transparency; the principle of purpose; the principle of fairness; the principle of proportionality; the principle of minimization; the principle of quality; the principle of responsibility; and the principle of security (Belbey ikram 2024, p 91).

The application of international law to artificial intelligence plays a role in many ongoing processes related to the general regulatory framework for the digital space, particularly within the UN Group of Governmental Experts and the Open-ended Working Group. In these two UN groups, states share their legal beliefs and practices, explaining how they apply existing public international law to address the challenges of the digital world, particularly in the field of artificial intelligence. (DFAE 2022, p 14)

Second section: Human Rights Council

AI is also being addressed within the Human Rights Council, with the aim of ensuring respect for these rights when AI systems are used. The Council adopted a resolution calling on the international community to take preventive and regulatory measures and procedures regarding AI. The resolution, presented by South Korea, Austria, Brazil, Denmark, Morocco, and Singapore, calls for enhancing the "transparency" of AI systems and ensuring that data used for this

technology is collected, used, shared, stored, and deleted in ways that are consistent with human rights (Basyouni 2024, p 52). The resolution also emphasizes the need to protect and uphold human rights throughout the use of AI systems, as these systems pose significant risks when misused, while also offering many advantages. They are a double-edged sword.

Third section: Council of Europe

The Ad Hoc Committee on Artificial Intelligence (CAHAI) was established in 2019 and decided, at the end of 2021, to negotiate a legally binding agreement on the development, design, and use of AI (DFAE 2022, p 14).

This legally binding global instrument is based on Council of Europe standards on human rights, democracy, and the rule of law, and is conducive to innovation (Concil of Europe 2023). This international treaty is also known as the "Framework Convention" on the development, design, and application of AI systems based on Council of Europe standards on human rights, democracy, and the rule of law. It will also be open to accession by other countries and will become a global standard-setting tool for AI (Francesca Vannucci et Catherine Connolly 2024).

In December 2021, the CAHAI formulated the key points of a legal framework for AI, in line with Council of Europe standards regarding the need to respect human rights, democracy, and the rule of law.

On January 6, 2023, the Commission also drafted a legal framework agreement on artificial intelligence and human rights. This agreement aims to establish binding international legal rules to ensure the protection and promotion of human rights and the use of artificial intelligence systems, as well as respect for the rule of law and the strengthening of democracy.

On December 8, 2023, the European Union also approved a legal precedent for regulating artificial intelligence, the result of numerous negotiations between EU member states and the European Parliament. This was a result of the repercussions of the release of ChatGPT in 2022 and its enormous potential. This was achieved based on the need to respect copyright and publishing rules when using and developing artificial intelligence algorithms. However, this law still requires some final steps for approval. These regulations will affect the technology used in the education, healthcare, and banking sectors, as well as systems that may be used in judicial and legal fields (Center for AI and digital policy 2024), excluding the military sector.

It can be argued that both legal instruments—the EU AI Act and the Framework Convention—complement each other, as the former will address AI rules in the EU, while the latter will focus on the need for AI systems to comply with human rights, democracy, and the rule of law at the international level.

Second requirement: Non-binding international legal rules for artificial intelligence

At the soft law level, there are already numerous instruments issued by various bodies and organizations that set out non-legally binding principles for the use of artificial intelligence, which we will discuss in detail in the following sections:

First section: Organisation for Economic Co-operation and Development (OECD)

In May 2018, the OECD Digital Economy Policy Committee established an Expert Group on Artificial Intelligence in Societies. The group's goal was to develop principles for public policy and international cooperation that would enhance trust in the use of AI technology and encourage its adoption. These principles ultimately became the basis for the OECD Council Recommendation on AI, which 40 countries joined on May 22, 2019 (International Telecommunication Union 2021, p 73).

This Recommendation (OECD 2021) focuses on issues specific to AI and sets a standard that is both actionable and flexible enough to withstand the impact of time in this rapidly evolving field. The AI principles derived from this Recommendation were welcomed by G20 leaders at the Osaka Summit in June 2019 .

Second section: G7

In 2019, G7 governments announced a set of international guidelines and an international code of conduct designed to encourage international cooperation on the effective management of artificial intelligence (AI). This launch is the latest in a series of government initiatives targeting safe, responsible, and trustworthy AI. The principles apply to all parties within the AI lifecycle and serve as non-binding measures to guide organizations and governments toward best practices that encourage the responsible and ethical use of AI. They are designed to be a "document" that builds on several existing international principles, including those of the Organization for Economic Co-operation and Development (OECD), and is expected to adapt and evolve as technology advances (Coran darling, et al. 2024).

By emphasizing the importance of safety, security, and ethical considerations, the G7 aims to pave the way for a global AI ecosystem that upholds democratic values, protects against misuse, and protects human rights, as countries and organizations grapple with the significant impact of AI on society.

Third section : G20

The G20 was formed in 1999, initially bringing together finance ministers to develop a cooperative policy for economic development. In 2008, the G20 was joined by the heads of government of these countries. Since then, reforms to new global banking rules have been incorporated into the G20 agenda, and governance reforms have been coordinated with the International Monetary Fund and the World Bank. Several G20 working groups seek to enhance development cooperation to formulate joint policies on various topics. In 2019, the S20 was

established within the G20 structure, a multidisciplinary group dedicated to science and technology cooperation structures. The S20 brings together the scientific academies of the G20 member countries. As a result of the 2020 G20 meeting, the "Foresight Report: Science for Navigating Critical Transformations - Task Force 3 - The Digital Revolution" was published. The report contains recommendations for advancing science and technological transformation in member countries. Among these recommendations, the report outlines policies for developing artificial intelligence, with a particular focus on mitigating the geopolitical risks of AI use (Fernando Filgueiras 2022, p 06).

It's worth noting that the G20 adopted the 2019 AI Guidelines, adopted by the G7 and the OECD.

Fourth section : United Nations Educational, Scientific and Cultural Organization

The United Nations Educational, Scientific and Cultural Organization (UNESCO) initiated a global dialogue on the ethics of artificial intelligence (AI), given the complexity of this technology and its impact on societies and humanity as a whole. In September 2018, it held a public roundtable with relevant experts, followed by a global conference in March 2019 entitled "Principles of Artificial Intelligence: Towards a Humanistic Approach?" In November 2019, the 40th session of UNESCO's General Conference intended to consider the preparation of a Recommendation on AI for the period 2020-2021, subject to approval by the UNESCO Executive Board in April 2019 (International Telecommunication Union 2021, p 75).

This was achieved in 2021, as the 41st session of UNESCO's General Conference, held in Paris from November 9 to 24, 2021, considered the Recommendation presented to it to be a standard-setting document based on international law and focusing on human dignity and rights, as well as gender equality, social and economic justice, socioeconomic development, physical and psychological safety, diversity, interconnectedness, and inclusion. Protecting the environment and ecosystems can provide the necessary guidance for responsible management of AI technologies.

This Recommendation addresses the ethical issues related to AI within UNESCO's mandate. It explores AI ethics through a systematic, normative approach based on a comprehensive, multicultural, and dynamic framework of interconnected values, principles, and procedures that can guide societies in responsibly addressing the known and unknown consequences of AI technologies for humans and human societies, as well as for the environment and ecosystems (UNESCO 2021).

Fifth section : Council of Europe recommendations

The Council of Europe has already approved several soft law instruments on artificial intelligence. In 2017, the Parliamentary Assembly of the Council of

Europe (CoE) issued a Recommendation on Technological Convergence, Artificial Intelligence, and Human Rights, urging the Committee of Ministers to mandate Council of Europe bodies to study the human rights challenges posed by emerging technologies such as AI. The Recommendation also calls for guidelines on issues such as transparency, accountability, and automated profiling (International Telecommunication Union 2021, p 76).

The Guidelines on the Protection of Individuals with Respect to the Handling of Personal Data in the Age of Big Data, adopted on January 23, 2017, were also adopted.

Among the latest outcomes of the Parliamentary Assembly of the Council of Europe on artificial intelligence are the following:

- The Need for Democratic Governance of Artificial Intelligence: Resolution No. 2341 of 2020 and Recommendation No. 2181 of 2020.
- Preventing Discrimination Resulting from the Use of Artificial Intelligence: Resolution No. 2343 of 2020 and Recommendation No. 2183 of 2020.
- Justice by Algorithm: The Role of AI in Policing and Criminal Justice Systems: Resolution No. 2342 of 2020 and Recommendation No. 2182 of 2020.
- Artificial Intelligence and Health: Future Medical, Legal, and Ethical Challenges: Recommendation No. 2185 of 2020.
- Artificial Intelligence and Labor Markets: Friends or Foes: Resolution No. 2345 of 2020. 2020, and Recommendation No. 2186 of 2020.
- Legal Aspects Related to "Autonomous Vehicles": Resolution No. 2346 of 2020, and Recommendation No. 2187 of 2020.
- Brain-Machine Interfaces: New Rights or New Threats to Fundamental Freedoms?: Resolution No. 2344 of 2020, and Recommendation No. 2184 of 2020.

It can be noted that although these decisions and legal rules are not binding, they play a significant role in developing international law rules related to artificial intelligence. Many countries have adopted them in their legislation due to the importance they attach to the use of artificial intelligence programs, particularly with regard to the ethical aspect.

THE SECOND TOPIC: Legislative rules of states and international organizations and voluntary commitment based on ethical principles and technical standards

In this topic, we will discuss the various modern laws of leading countries in the field of artificial intelligence, such as the United States and China, in addition to the European Union (the first requirement), not to mention the overall ethical standards and recommendations issued by international bodies related to the uses of artificial intelligence (the second requirement).

First requirement: Legislative rules of states and international organizations

Major technological powers and large markets regulate the development and use of AI in their national laws in ways that also affect developers and service providers in other countries. These legislative acts therefore have de facto international significance with regard to AI regulation, even if they are merely formal (supra-) national laws (International Telecommunication Union 2021, p 16).

First section: USA

The United States has no established policies or standards related to artificial intelligence, and establishing them does not appear to be a priority for the current administration. Several US-based private companies working on AI have joined forces with several multinational corporations to form the Partnership on AI, which aims to develop and share best practices in this field. There is also a growing number of research institutes and NGOs working on policy, ethics, and safety issues related to AI (IEC 2018, pp 75-76).

In 2019, New York Governor Andrew Cuomo signed SB S3971B into law to establish a state commission to study and investigate how to regulate AI and automation. However, the issue is that if state or local governments take a more active role in regulating AI, it raises the question of whether employers and professionals will need to seek compensation from AI and AI vendors if AI software or services provide false information that leads to liability (Mark s.goldstein, Alexandra manfredi et Jeffrey elkreif 2023).

Biden's executive order on AI, issued on October 30, 2023, sets standards for security and privacy protections and builds on voluntary commitments made by more than a dozen companies. Members of Congress have expressed strong interest in passing laws on AI that would be more enforceable than the White House's efforts, but a comprehensive strategy has yet to emerge.

The executive order on new standards for AI safety and security outlines the most comprehensive measures ever taken to protect Americans from the potential risks of AI systems. These include:

- Requiring developers of the most powerful AI systems to share their safety test results and other important information with the U.S. government.
- Developing standards, tools, and tests to help ensure that AI systems are safe, secure, and trustworthy.
- Protecting against the risks of using AI to engineer dangerous biological materials.
- Protecting Americans from AI-powered fraud and deception by establishing standards for detecting AI-generated content and authenticating authoritative content.
- Establishing an advanced cybersecurity program to develop artificial intelligence tools to find and fix vulnerabilities in critical software. Ordering a national security memorandum to guide further action on AI and security.

This is in addition to other topics outlined in the executive order:
- Protecting Americans' privacy;
- Advancing equality and civil rights;
- Defending consumers, patients, and students;
- Supporting workers;
- Encouraging innovation and competition;
- Advancing American leadership abroad;
- Ensuring responsible and effective government use of AI (The white house 2023).

At least 25 US states considered AI-related legislation in 2023, and 15 states passed laws or resolutions, according to the National Conference of State Legislatures. The proposed legislation sought to limit the use of AI in employment decisions, insurance and health care, vote counting, and facial recognition in public places (Courtney rozen et Jillian deutsch 2023).

The United States thus leads other countries in the race to dominate AI development. Europe had been leading the way in this field due to its adoption of the Artificial Intelligence Act, which the European Parliament ratified in June 2023 and is expected to enter into full implementation in 2025.

Second section: China

Artificial intelligence (AI) is a significant component of Chinese digital technology legislation (such as the Data Security Law and the Personal Data Protection Law). This legislation primarily concerns data flow restrictions and transparency, in the name of "national security and the interests of the country." Relatively restrictive provisions also apply to private entities regarding the use of AI, while broad powers are granted to authorities regarding AI systems (DFAE 2022, p 15).

In July 2023, China issued official guidelines for generative AI services, becoming one of the first countries to legalize AI after the Cyberspace Administration of China (CAC) issued binding rules, which took effect on August 15, 2023, requiring AI service providers to conduct security reviews and register their algorithms with official authorities (Reda Ibrahim Abdullah Al-Bayoumi 2023, p 1028).

The global capitalist struggle over artificial intelligence is primarily between the United States and China. Although most Americans believe that America's leadership in AI-related technologies is advanced and capable, and that it cannot be penetrated by any other country, and that China cannot even be more than a competitor, it cannot overtake the United States. This is due to the latter's reputation as the greatest country in the world, a country of welfare, freedom, and democracy. However, the truth is that China now stands on solid ground when it comes to modern technologies, particularly AI. Chinese investment in AI research

and development has risen to American levels, and it is beginning to appear that China is laying the intellectual foundation for the advancement of AI science.
By 2025, the United States will have dropped to second place, reflecting China's seriousness in its pursuit of global leadership in this field. The Chinese president has announced specific goals for 2020 and 2025 to position China for leadership in AI technology and related applications by 2030 (Mahdi hanna 2021, pp 135-146).

Third section: European Union

On February 16, 2017, the European legislator issued a civil law on robotics, devising a new theory called the human agent theory as the basis for civil liability for robot damages. This theory aims to impose liability for operating a robot on a group of individuals based on the extent of their fault in its manufacture or use, and their passivity in avoiding the actions expected of the robot, without assuming fault or considering the robot as an object.
The European legislator granted robots a special legal status, namely the possibility of them enjoying legal electronic personality, which grants them rights and imposes obligations. The European Civil Code on Robotics also considers defining the provisions for civil liability for robot damages to be of paramount importance, as criminal liability may arise when a robot commits criminal acts (amir farag 2023, pp 04-05).
In addition, the European ethical system places great emphasis on ensuring that artificial intelligence technology is used in a responsible and ethical manner, aiming to protect the rights of individuals and communities and ensuring that institutions adhere to ethical and legal standards.
There are frameworks and guidelines developed by various organizations and bodies within the European Union to regulate the use of AI and ensure its compatibility with values, ethics, and fundamental rights of individuals. This framework aims to balance technological progress with the protection of privacy, security, and accountability. The Organization for Security and Cooperation in Europe (OSCE), the European Commission, and the European Data Protection Group are also working on guidelines and recommendations for the ethical use of AI in areas such as advanced robotics, machine learning, and AI in the healthcare sector. Furthermore, national laws and legislation in EU member states may regulate the use of AI and define the ethical and legal rules related to it.
European Union lawmakers also approved amendments to the rules governing artificial intelligence, the most important of which, from a legal perspective and to protect human rights and the right to personal data, include a ban on the use of artificial intelligence to monitor biometrics such as facial and voice recognition. They also require users of artificial intelligence systems to disclose the content generated by them, disclose any intellectual property rights, and analyze and classify the systems used according to the risks they pose to users. There are also

unacceptable risks recognized by the European Union that will be prohibited, such as behavioral manipulation, such as games that encourage children to engage in dangerous behavior. The second category of risks, which impact fundamental rights, is divided into artificial intelligence systems used in products that fall under the European Union's safety system, such as cars, aviation, medical devices, and elevators.

There is also the European Parliament's Civil Law Committee's report on artificial intelligence and the legality of robots, which addresses the legal and ethical issues related to it, issued in 2021, and the European Committee on Ethics in Science and Technology's report, which published reports and guidelines on ethics related to artificial intelligence and its applications in various fields (Amr Ragab El-Sayed Sadek 2023, p 904).

Many Arab countries are seeking to enter the field of artificial intelligence and acquire smart technologies, modern technology, and smart robotics. These countries, for example, include the United Arab Emirates, the Kingdom of Saudi Arabia, Qatar, and others. These countries are interested in entering the field of modern technology because of its multiple benefits and advantages for the economy, development, and advancement of their societies, in addition to achieving prosperity for Arab citizens through this technology (Hind Fouad El-Sayed 2023, p 59).

Despite this interest in many Arab countries regarding artificial intelligence, regulating its status, and enacting legislation regulating its work, all Arab countries still have a long way to go regarding the development of specialized and comprehensive legislation that regulates and outlines the problems caused by artificial intelligence entities. It is imperative that humans continue to develop artificial intelligence systems, and the solution to the problems raised by artificial intelligence does not lie in stopping artificial intelligence itself or its random, uncontrolled development. Rather, the solution lies in establishing controls, laws, and regulatory mechanisms, in addition to continuing monitoring operations and disseminating and developing safety standards in a manner that ensures the preservation of human safety in the future, and penalizing countries and institutions that violate these standards and suspending their operations in this field (Yahya Ibrahim Dahshan 2022, p 704).

Second requirement: Voluntary commitment based on ethical principles and technical standards

The development of technical standards (standardization) is of great importance in the field of artificial intelligence. While standards themselves are certainly not legally binding, they nevertheless play a central role in the industry and are sometimes declared binding under national or international regulations. Furthermore, technology companies are increasingly adopting AI regulations on a voluntary basis, thereby setting industry standards. In this context, technical

standards bodies and companies often draw inspiration from international law, particularly those governing human rights, as well as from soft law.

At the international level, the main players in the field of artificial intelligence standardization are the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), and the International Telecommunication Union (ITU). While the ISO and IEC are associations under Swiss law, the ITU is an intergovernmental organization. The three organizations, headquartered in Geneva, have joined forces within the Global Standards Collaboration (DFAE 2022, p 17); not to mention the Institute of Electrical and Electronics Engineers (IEEE), as we will see later.

First section: International Organization for Standardization (ISO)

The International Organization for Standardization (ISO) is an independent, non-governmental international organization founded in 1947 that promotes commercial and industrial standards. Headquartered in Geneva, it comprises 170 national standards bodies. It brings together experts to share knowledge and develop voluntary, consensus-based, market-relevant international standards that support innovation and provide solutions to global challenges.

As of February 2023, ISO had developed more than 24,676 standards, covering everything from manufactured products and technology to food safety, agriculture, and healthcare.

Several ISO committees specialize in developing standards related to AI applications, such as:

TC 22: Road Vehicles, which drafts basic standards for road vehicles and also studies standardization challenges related to intelligent and connected cars.

TC 68: Financial Services, which standardizes standards for the financial and banking sector. New Directions covers approximately 58 standards of this committee. TC 299: Robotics, which covers the standardization of robotics for various applications (IEC 2018, p 17).

Second section: International Electrotechnical Commission (IEC)

The International Electrotechnical Commission (IEC) was founded in London and held its first meeting at the Cecil Hotel on June 26-27, 1906, under the chairmanship of Alexander Siemens. It is the world's leading organization for the preparation and publication of international standards for all electrical, electronic, and related technologies. It is a global, non-profit organization with more than 170 member countries that coordinates the work of 20,000 experts worldwide.

Its goal is to develop international standards to make electrical, electronic, and digital technologies work for the benefit of humanity. Its work facilitates technological innovation, affordable infrastructure development, efficient and sustainable energy access, urbanization and intelligent transportation systems, climate change mitigation, and the safety of people and the environment.

The IEC publishes approximately 10,000 IEC International Standards, which, along with conformity assessment, provide the technical framework that allows governments to build a national quality infrastructure and businesses of all sizes to buy and sell safe and reliable products consistently in most countries around the world. IEC international standards serve as a foundation for risk and quality management and are used in testing and certification to verify fulfillment of manufacturer promises (International Electrotechnical Commission 2024).

Several IEC committees have also considered AI as a potential contributor to their work program. Examples include:

SC 45A: Instrumentation, Control, and Electrical Power Systems in Nuclear Facilities. This committee conducted a study on AI, aiming to apply information technology and emerging electronic technologies to the development of computer and information systems that support and regulate nuclear instrumentation and control requirements.

TC 100: Audio, Video, and Multimedia Systems and Equipment. This committee is developing standards related to wearable devices and has initiated a discussion topic titled "Wearable Device Usage Scenarios," which includes elements of AI and virtual reality.

TC 124: Wearable Electronic Devices and Technologies. This committee is responsible for developing technical standards for electrical engineering, materials, and personal safety for wearable technology (IEC 2018, p 73).

It is expected that these devices and technologies will be widely used in the context of AI applications. Standardization plays a supporting and leading role in the development of AI. It is not only essential for fostering industrial innovation, but also for improving the quality of AI products and services, ensuring user safety, and creating a fair and open industrial ecosystem. After examining today's AI landscape and the key challenges it faces, some basic requirements for standardization can be drawn. ISO (International Organization for Standardization) and the IEC (International Electrotechnical Commission) constitute the specialized system for standardization worldwide. National member bodies of ISO or IEC participate in the development of international standards through technical committees established by the respective organizations to address specific areas of technical activity, in collaboration with other international governmental and non-governmental organizations. Standardization in the field of AI is still in its early stages (International standards, ISO/IEC 42001 2023, p 07).

Although some aspects of AI or its supporting technologies have been part of the scope of existing standardization groups for some time, new groups are now being formed to address the field of AI from a more comprehensive perspective.

Third section : The Institute of Electrical and Electronics Engineers

(IEEE) Is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. Its primary purpose is to promote technological innovation and excellence for the benefit of humanity. The Institute has more than 427,000 members in over 190 countries, more than 64% of whom are outside the United States. IEEE members are engineers, scientists, and allied professionals whose technical interests are rooted in electrical and computer science, engineering, and related disciplines (IEEE 2024).

The IEEE's primary focus is on studying the ethical aspects of technical standards related to artificial intelligence. In March 2016, the IEEE Standards Association launched the Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems, with the goal of helping people address the threats posed by AI and developing ethical design principles and standards ranging from data privacy to failure-safe engineering (IEEE 2024).

Fourth section : International Telecommunication Union (ITU)

The International Telecommunication Union (ITU) is organizing the "AI for Good Global Summit," with the participation of forty United Nations agencies, civil society organizations, technology industry leaders, and AI experts. This summit will explore how big data and AI technology can be applied to achieve the common good of societies and the Sustainable Development Goals, as well as to prevent the harms of its use and reap its benefits.

This summit, established in 2017, is reconvening in person in Geneva for the first time since 2019. In response to the COVID-19 pandemic, the summit has been transformed into a year-round online platform, bringing together a diverse group of participants from 183 countries. The 2023 summit combines the best of both the physical and virtual worlds, with the potential to welcome more than 5,002 participants in Geneva (Basyouni 2024, p 59).

From the above, it can be said that these standards issued by major standardization bodies are of great importance, as they must be adopted when developing AI programs, given their aim to respect human rights and privacy. They also promote global economic balance by establishing a quality infrastructure for industrial innovation and enhancing transparency, fairness, and safety when using AI programs (Belbey ikram 2024, p 145).

Conclusion:

From the above, we have reached a set of conclusions, which we follow with the necessary recommendations:

Results:

- The era we live in is distinguished by a unique characteristic that distinguishes it from its predecessors. It deserves to be called the "Age of Artificial Intelligence." Humanity is on the cusp of a "new revolution" that will change the way people live, a revolution based on artificial intelligence.

- Artificial intelligence is a double-edged sword. Although it provides assistance and benefits to individuals in new, innovative, and diverse ways, it can also cause them far greater harm than other technologies, violating their human rights and freedoms.
- The international community has sought to develop initiatives to establish a legal framework for artificial intelligence and its ethics. This has been embodied in various efforts by international, regional, and national bodies.

Recommendations:

- The necessity of enacting legislation to regulate the military use of artificial intelligence technologies, given the potential danger this poses to society.
- The need to align Arab legislation related to artificial intelligence with the various legislations of major technological powers, in order to mitigate the risks and negatives of using AI in Arab societies.
- The need to expedite the procedures for adopting the European Union's Artificial Intelligence Law, which represents a precedent in the field of regulating AI at the international level.
- The need to adopt UNESCO's recommendations on the ethics of artificial intelligence in various international and local legislation.
- Not to underestimate international standards for standardization in the field of artificial intelligence and to impose oversight over the extent of their compliance and transparency.

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