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The legal regulation of artificial intelligence technologies

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ABSTRACT

This study, entitled *The Legal Regulation of Artificial Intelligence Technologies*, addresses several legal issues raised by artificial intelligence technologies, particularly those related to determining the nature of civil legal protection afforded to such technologies. This necessitated an examination of the mechanisms and methods by which the Jordanian legislator has sought to incorporate artificial intelligence technologies into existing legal texts. The study reached several conclusions, most notably that the definition of the "electronic agent" as provided by the Jordanian legislator in Article (2) of the Electronic Transactions Law of 2015 may encompass, in its substance, the concept of artificial intelligence (AI). However, this definition is limited to certain characteristics of these technologies, such as inference and autonomy in transmission, while overlooking other essential features, including their ability to learn, make decisions independently without human intervention, and possess deductive reasoning capabilities. Accordingly, the study recommends amending the definition of the electronic agent contained in the Electronic Transactions Law of 2015 to encompass all the characteristics inherent in artificial intelligence technologies, such as deduction, self-learning, and independent decision-making without human intervention.

KEYWORDS: technology, artificial intelligence, software, equipment, invention

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Introduction

Artificial intelligence (AI) is a relatively modern term that officially emerged in 1956, when a "scientific conference" was held at Dartmouth College in the United States, during which the researcher John McCarthy proposed the use of this term to denote machines whose intelligence simulates that of humans, meaning their ability to perform functions associated with the human mind (Arab Democratic Center for Strategic, Political, and Economic Studies,2019).Accordingly, the term "artificial intelligence" has generated widespread concern among people, stemming from the belief that it signifies the domination of machines and software over the world and the diminishing role of human beings. (Awaisheh et al., 2024b)

Nevertheless, although artificial intelligence in some instances presents images of machines or programs that closely resemble the roles or tasks performed by humans, reality is far removed from such perceptions. Artificial intelligence does not aim to replace human beings; rather, it seeks to contribute to the accomplishment of tasks that require human effort, whether physical strength—particularly when such technologies manifest in tangible, material forms—or intellectual capacity, based on the technologies' ability to infer, deduce, and analyze, or tasks that require both capacities together(Oracle, 2022).

On the other hand, the concept of artificial intelligence has achieved such prominence that it is now widely known, owing to the facilities it provides and the rapid growth and development it continues to experience. The field of artificial intelligence is broad and multifaceted due to the diversity of its activities and its connection to all aspects of life(Issa, 2022).This is especially evident given that the Hashemite Kingdom of Jordan has recently sought to join other states in enhancing cooperation in the digital field, as exemplified by Article (5) concerning cooperation in the field of artificial intelligence, as stipulated in the Joint Declaration on the Strategic Partnership between the Hashemite Kingdom of Jordan and the Kingdom of Spain (Al-Hawamdeh & Alhasan, 2024).

Despite these facilities, artificial intelligence has simultaneously encountered ethical and technical challenges that have been reflected in legal frameworks(Al-Dahiyat, 2020, p. 16). Legislations therefore seek to keep pace with this technological advancement within its legal systems. Finally, this study clarifies the legal regulation governing the civil protection of artificial intelligence technologies by defining the concept of such technologies, briefly identifying the elements that constitute them, highlighting some of their characteristics, and examining the extent of this protection under Jordanian law and relevant international agreements. (Alrfoua et al., 2026)

Research Problem

In the absence of clear and specific rules in Jordanian legislation that define the nature of civil protection for artificial intelligence technologies, it becomes necessary to investigate the means and methods through which the Jordanian legislator seeks to accommodate these technologies within international agreements and relevant legal texts, particularly those related to the Copyright Law No. (22) of 1992 and the Patent Law No. (32) of 1999. This issue is the focus of the present study.

Research Questions

This study aims to answer the following questions:

1. What is meant by artificial intelligence technologies?
2. What are the characteristics of artificial intelligence technologies?
3. How effective and comprehensive is the positive law in regulating artificial intelligence technologies?
4. What international efforts have been made to regulate artificial intelligence technologies?

Significance of the Study

The significance of this study lies in its investigation of one of the significant and contemporary legal topics resulting from the tremendous technological advancement, which relates to the legal regulation of artificial intelligence technologies. Consequently, legislation has organized and clarified its general legal provisions without providing a more detailed focus. (Awaisheh et al., 2024c) Herein lies the legal significance of this study, through the attempt to establish a precise and clear legal concept for the civil protection of these technologies, and to encompass them with legal controls that preserve individuals' rights and properties. (Awaisheh et al., 2025a)

Research Limitations

Nothing is preventing the generalization of the results of this study to the academic and legal community.

Scope of the Problem

1. Subject Matter Scope

This study is concerned with the legal regulation of artificial intelligence technologies by referring to relevant legislative provisions and texts.

2. Temporal Scope

The temporal scope of the study is represented by the Electronic Transactions Law No. (15) of 2015, the Patent Law No. (32) of 1999, and the Copyright and Related Rights Protection Law No. (22) of 1992.

3. Spatial Scope

This study addresses the provisions of national and international protection for artificial intelligence technologies according to the enacted legal provisions in the Hashemite Kingdom of Jordan.

Research Terms

Technology: The totality of human knowledge used in the process of changing existing things in nature to meet human needs(Hakar & Barden, n.d., p. 37).

Definition of Artificial Intelligence

Artificial intelligence refers to the collection of efforts made to develop information systems so that they can think and act like humans. These systems are intended to perform their tasks in an integrated and coordinated way, based on their accumulated experiences and concepts, in order to enable decision-making(Al-Khouli, 2021, p. 228).

Research Methodology

This study relies on the descriptive method by referring to relevant books, research, and studies, and by presenting the legal texts related to its subject matter contained in Jordanian law. Additionally, it employs the analytical method to analyze these texts, as well as to examine the views of legal doctrine and the jurisprudence of Jordanian courts, if any.

Preliminary Chapter

Concept of Artificial Intelligence Technologies

Today, artificial intelligence technologies constitute the fundamental technological pillar that the world lives by("Civil Liability for Damages Caused by Artificial Intelligence," n.d., p. 17).Through these technologies, the world has moved beyond the stage in which computers were used only to collect and retrieve data, reaching the stage in which computers themselves find solutions and make decisions on behalf of humans. These technologies rely on numerous different inferential processes that feed them so they can simulate intelligent human behavior(Bounia, 1993, p. 11). For example, a self-driving car can determine routes on its own instead of relying on a human using GPS to navigate while driving, based on the data and information it has been fed and the sensors and cameras with which it has been equipped(Al-Burai, n.d., p. 23).

Accordingly, this section aims to clarify the nature of artificial intelligence technologies by dividing it into two subsections. The first subsection addresses the definition of artificial intelligence technologies, while the second subsection examines the fields and components of artificial intelligence technologies, as follows:

First Subsection

Definition of Artificial Intelligence Technologies

The term *artificial intelligence* raises a significant conceptual question: how can technologies based on it think, understand, perceive, predict, and interact with the surrounding reality?(Al-Khouli, 2021, p. 225) Moreover, artificial intelligence is characterized by distinctive features that set it apart from other technologies. In light of

this, this subsection seeks to explain the concept of artificial intelligence technologies, in addition to identifying the key characteristics that they possess. (Awaisheh et al., 2025b)

Before defining what is meant by artificial intelligence, it is useful to first address the concept of *technology* (Technique) Technology is defined as the totality of human knowledge used in the process of transforming elements found in nature to meet human needs. It has also been defined by Melvin Kranzberg as "the application of knowledge and the knowledge of application." Accordingly, technology encompasses numerous aspects of life, such as healthcare, food, housing, clothing, manufactured products, and many others(Al-hababseh, 2024). With regard to artificial intelligence, numerous definitions have been offered. Qutaiba Abdul Majid defines it as "one of the modern computer sciences that investigates advanced methods for performing tasks and inferences that resemble—albeit within limited bounds—the processes attributed to human intelligence"(Abdul Majid, 2009, p. 8). Fayez Al-Najjar defines it as "efforts aimed at developing computer-based systems that are endowed with the ability to perform functions that simulate those carried out by the human mind, such as language learning, completing administrative tasks, and the capacity for thinking, learning, understanding, and applying meaning"(al-Najjar, 2010, p. 168).

Another definition describes artificial intelligence as "the simulation of human intelligence processes by machines and software, particularly computer systems"(al-Azzab, 2021, p. 3). Adel Abdul Nour defines it as "the science concerned with studying, designing, and programming computers for the purpose of accomplishing tasks and functions that ordinarily require the use of human intelligence to perform"(Abdul Nour, 2005, as cited in Ahmed, 2022, p. 17). It has also been defined as "a field of computer science concerned with designing intelligent computer systems that exhibit characteristics of intelligence in human behavior"(Barr & Feigenbaum, 1980, pp. 94–95).

Furthermore, the World Intellectual Property Organization has provided a definition, stating that artificial intelligence is "a discipline within computer science that aims to develop machines and systems capable of performing tasks that are regarded as requiring human intelligence, whether with limited human intervention or without any human intervention"(WIPO, 2021, p. 4) . Regarding the legal definition, a review of the laws currently in force in Jordan, such as the Copyright Law No. (22) of 1992 and the Patent Law No. (32) of 1999, reveals that the legislator has not provided a clear and explicit definition of artificial intelligence. However, what is referred to as the "electronic intermediary," defined in Article 2 of the Electronic Transactions Law No. (15) of 2015(Jordan, 2015, art. 2) as "the electronic program used to execute an action or respond to an action automatically with the intent of creating, sending, or receiving an information message," appears to be closer to a definition of artificial intelligence. (Al-Kasassbeh et al., 2024) This is despite the fact that this definition is limited to certain characteristics that may be attributed to artificial intelligence technologies, such as inference, autonomy in transmission, and it omits other features such as the ability to learn, make decisions independently without any human intervention, and the skill of deduction(al-Dahiyat, 2020, p. 16). Nevertheless, this definition aligns with artificial intelligence due to its inherent nature, as it represents a modern science based on renewal, innovation, and transformation(Al-Khouli, 2021, p. 225).

Moreover, artificial intelligence possesses several characteristics. Perhaps the most prominent of these is knowledge representation, meaning that artificial intelligence uses a special structure to describe knowledge, which includes a set of facts, the relationships between them, and the rules that connect these relationships(Althnaibat, 2025, p. 115). This structure ultimately forms a "knowledge base," which in turn provides the largest possible amount of information needed to find a solution to a given problem(Arab Democratic Center, 2019, p. 13). Another characteristic is heuristic search, which refers to the fact that artificial intelligence technologies do not follow sequential or linear steps to find the correct solution. (Alhasan & Awaisheh, 2024)

Instead, they choose a particular method of solution that is appropriate, while retaining the possibility of changing that method if it becomes apparent that the initial option does not lead to a quick solution. In other words, their focus is on achieving the goal(Odaybat, 2021).

Artificial intelligence is also characterized by its ability to handle incomplete information, by providing appropriate solutions when the given data are incomplete or uncertain. This does not mean that it produces wrong or right solutions in all circumstances; rather, it is sufficient for it to provide acceptable solutions that correspond to the data available to it(Abdul Majid, 2009, p. 14). Consequently, less realistic inferences are merely the result of incomplete information, and such technologies cannot be considered deficient in their

performance in such cases. (Awaisheh, 2025c)

It is also capable of learning, as artificial intelligence technologies learn from previous experiences and practices through observation or by utilizing certain information in order to improve their performance. This capability is linked to the ability of these technologies to infer similar and selective cases of the presented problem, and thus to ignore some redundant information(Arab Democratic Center, 2019, p. 14).Finally, reasoning is defined as "the event or process of reaching a conclusion based solely on what the technologies already know, where new facts are derived from old ones. Reasoning is logically recorded in its two parts: deductive reasoning and inductive reasoning"(Salah, 2022).

Second Subsection

Fields and Components of Artificial Intelligence Technologies

In reality, artificial intelligence technologies have proven their efficiency in multiple fields due to their inherent characteristics(Al Atiyat, 2025, p. 135). Artificial intelligence technologies can already be seen in Jordan, where they are effectively used in strategic games (such as chess), natural language processing and speech recognition (such as Siri on iPhones), robotics, vision systems (such as drones), and expert systems (such as medical diagnosis) (Mousa & Bilal, 2019, pp. 179–181). After presenting a definition of artificial intelligence and explaining its unique characteristics, it is necessary to identify its types and the elements that constitute it. (Al-Zubi et al., 2024)

Artificial intelligence is applied across many fields, which means that not all AI technologies can be considered equal in their capabilities. Accordingly, AI is classified into three types based on the capabilities it possesses, as follows:

1. **Weak AI (Artificial Narrow Intelligence – ANI):** Also known as limited or narrow AI, this is the simplest and most widespread type of AI today. It does not possess general intelligence, but rather intelligence confined to a specific domain(Hmaidan et al., 2025, pp. 145–154). This type of intelligence is designed to focus on a particular task for which it has been programmed, and it performs that task with high proficiency, adhering strictly to the rules imposed upon it and unable to exceed or bypass them. Good examples of weak AI include self-driving cars, facial and image recognition programs, drones, manufacturing robots, smart personal assistants (such as Siri), and spam-filtering systems. These systems use specific algorithms to identify unwanted messages and then move them from the inbox to the spam folder(Mousa & Bilal, 2019, p. 29).
2. **Strong AI (Artificial General Intelligence – AGI):** Sometimes referred to as general artificial intelligence, this type is capable of functioning with abilities similar to those of humans in terms of thinking and planning independently. It uses logic to apply knowledge when presented with an unfamiliar task, enabling it to compete with the cognitive abilities of the human brain(al-Azzab, 2021, p. 4). Good examples of strong AI include medical robots used in radiology, surgical medicine, and medical diagnosis, such as intelligent machines that diagnose tumors by relying on image-recognition technologies for various photographic images of skin lesions or moles(Qtaishat, 2021, p. 140). Other examples include military and security robots that operate using technologies designed to alert and sense any action that could threaten security within their environment, among other applications of artificial intelligence(Maaiteh & Afeef, 2024).
3. **Super AI (Artificial Superintelligence – ASI):** Super AI is considered one of the most dangerous types that scientists aim to achieve, as its intelligence may reach three times that of a specialized human(Al Atiyat, 2024, p. 120).It aims to design machines that surpass all areas of human intelligence and capabilities. This type of intelligence also possesses the ability to interact with the external environment automatically, and it can issue judgments and decisions rapidly(Abdul Sattar, 2021, p. 393). Although this intelligence is still under development, it will be capable of replicating intelligence far more effectively, due to its large memory capacity, its enormous ability to process and analyze data much faster than other systems, and its capacity to make correct decisions at an alarming speed)Types of Artificial Intelligence, 2021).

The elements that constitute artificial intelligence technologies are divided into two categories:

1. **Software:** These are the intangible components, referring to instructions written in a specific format, as well as the rules and models that help process data and perform the designated functions for which

they were designed at high speed(Al-Dabbas, 2024, pp. 291–306). Examples include drivers, which are "a set of programs that direct the operation of the computer system as a whole. When the operating system monitors the central processing unit and peripheral devices, it maintains the sequence of main memory usage and allocates it to application programs(Najm, 2004, pp. 309, 476), while directing and coordinating the flow of operations between input/output devices and the central processing unit(Althnaibat, 2024, p. 120). The activities of the operating system are controlled by programmers using a control language"(al-Sabbagh, 2004, as cited in Kahina, Slimani, Daouia, & Zwazi, 2016, p. 11(. Other examples include control units, which resemble the human nervous system, as these units receive all signals issued by the drivers and send them to actuators to operate peripherals and clutches(Alhrerat & Altarawneh, 2024, pp. 92–114).

2. **Hardware:** These are all tangible physical tools that a user can touch and control through software that operates and supervises them(. Examples include input units, which are devices responsible for entering data into AI technologies, such as digital cameras, keyboards, and microphones. Also included are output units, which are devices responsible for delivering data and information to users of AI technologies, such as speakers and display screens("Computer Hardware Components," 2022). Additionally, there are grippers, which are used to grasp objects or tools employed by AI technologies to perform assigned tasks, resembling the human hand, and robotic limbs, which can be compared to human arms and are used to provide the necessary range of motion for AI technologies(Alhrerat, 2024). The function of these technologies differs from one another depending on the length of the arms required(Al-Dabbas, 2024, pp. 291–306).

Section One

Protection of Artificial Intelligence Technologies under Jordanian Domestic Legislation

Artificial intelligence technologies in Jordan are still relatively new, as their practical application on the ground remains limited due to weak digital infrastructure. However, this does not mean that there are no attempts to employ these technologies across all sectors and in various fields. Because their use raises many difficulties, it has become necessary for existing legislation to be capable of accommodating their unique characteristics and protecting them from the risks to which they may be exposed. Accordingly, artificial intelligence technologies have generated a wide debate concerning their legal nature and the subject of their protection. In this regard, national efforts have sought to confer legal protection on artificial intelligence technologies within legal rules that are capable of providing such protection. Legal protection here refers to the substantive provisions that ensure protection against infringement(Al Qaisi et al., 2026).

Artificial intelligence technologies are considered a branch of computer science. On this basis, their protection may be examined by reference to the rules that protect computer systems. Accordingly, legal scholars have been divided into two main trends in determining the legal branch whose rules should govern the protection of these technologies(Abu Rukba, 2024, p. 105). One view holds that they are subject to protection under patent law, while the other view considers them to fall under copyright law. Based on the foregoing, this section is divided into two subsections as follows:

1. **Subsection One:** Protection in accordance with the provisions of Patent Law
2. **Subsection Two:** Protection in accordance with the provisions of Copyright Law

Subsection One

Protection in Accordance with the Provisions of Patent Law

There have been attempts to protect artificial intelligence technologies under the provisions of patent law. This approach is based on the fact that software essentially uses a set of machines and devices within the computer to manage and direct them to perform a specific task. Since such software is closely associated with the physical components of the machine protected under the specific provisions of patent law, and because the accessory follows the principal, the protection granted to these devices extends to computer programs on the basis that they constitute part of the machine that operates them(Wasil, 2011, p. 10). Furthermore, computer programs involve an overlap between elements of intellectual creativity and invention in the field of programming, which renders them tantamount to an invention(Ibrahim, 2019, p. 518).

An invention is defined as: *"any creative idea reached by the inventor in any field of technology that relates to a product, a manufacturing process, or both, and that practically leads to solving a specific problem in any of these fields"(Jordan, 1999, art. 2)* . It should be noted that, for artificial intelligence technologies to be regarded as an invention, a set of conditions must be satisfied, which may be outlined as follows:

(**a**) **The invention must be inventive:** meaning that it involves an inventive step, *"that is, it must constitute a new production compared to the known state of the art, or represent a new method or means in relation to the state of the art, or a new application of known means, or form an element within a new industrial composition"* (Hussein, 2008, p. 52).

(**b**) **The novelty requirement:** which means that the invention must be technically new. This condition is fulfilled when artificial intelligence technologies include a new application of known algorithms in the field of technology, while at the same time, the elements of creativity are clearly apparent to a person skilled in the art, allowing the conclusion that innovation and creativity are present(Wasil, 2011, p. 12).

(**c**) **Industrial applicability:** which refers to the capability of industrial exploitation. An invention entails the application of creative ideas and scientific theories, and this condition is satisfied when artificial intelligence technologies are embodied in practical reality in such a way that they can be used and benefit society (Al-Khashroom, 2005, p. 7).

(**d**) **Lawfulness:** meaning that its exploitation must not result in a violation of public order or public morals, to protect society first, and protect the invention and its inventor second. This is a logical requirement, as it is not permissible to use inventions that may infringe upon individuals' freedoms and rights. (Awaisheh et al., 2025d)

With reference to the Jordanian Patent Law No. (32) of 1999, no provision is found that expressly stipulates the protection of artificial intelligence technologies in particular, or even computer programs in general. Rather, Article Four thereof(Jordan, 1999, art. 4b) explicitly excludes such programs from protection. This is due to the perception that artificial intelligence technologies are scientific theories reached through mathematical methods—namely algorithms—and therefore lack an industrial character(Hussein, 2008, p. 52). Accordingly, they are regarded as nothing more than ideas and arrangements of algorithms embodied in an innovative and creative form (Kahina & Zouazi, 2016, p. 20), in addition to the difficulty of establishing the novelty requirement in order for such technologies to be granted patent protection(Hussein, 2008, p. 52).

Section Two

Protection under the Provisions of Copyright Law

The prevailing approach to the protection of computer programs holds that they should be protected under the provisions of copyright law, on the basis that they constitute literary works, or at least share the same characteristics as literary works(Abu Rukba, 2024, p. 126). This view is grounded in the fact that intellectual creation is considered one of the most essential elements of legal personality and among the rights inherent thereto, which must be afforded protection, especially since artificial intelligence technologies are regarded as the product of an expert intellectual effort(Wasil, 2011, p. 17). This demonstrates that the nature of artificial intelligence technologies consists essentially of ideas and arrangements of algorithms expressed in an innovative and creative form(Slimani & Zawazi, 2016, p. 20). Accordingly, they fall within the scope of protection as literary works under the general rules of copyright law, regardless of whether such works are stored or transmitted via computers or digital networks (Ibrahim, 2019, p. 524).

A "work," within the context of artificial intelligence technologies, refers to any literary, artistic, or scientific creation that is protected as a written literary work, such as a computer program. The author is the person who creates or invents the work(Jordan, Copyright Law No. 22, 1992, Arts. 2–3).Accordingly, for artificial intelligence technologies to be protected as literary works, two conditions must be met.

The first condition is that the work must be original, relying on an element of creativity that reflects the distinctive personality of the author and manifests through the features of the innovation produced. The

innovative character of artificial intelligence technologies may derive from the nature of the data itself, or from the manner in which the data are organized, processed, structured, and presented(Qtaishat, 2026, p. 137). In this respect, such works differ somewhat from other digital works, as their production requires the use of specific procedural steps and particular programming languages for each work. In general, and regardless of the diversity of methods adopted by authors in creating artificial intelligence technologies, it may be stated that the author enjoys two categories of rights: moral rights and economic rights(Haj, n.d., p. 283).

The second condition requires that the work be expressed in a tangible material form, since copyright protection does not extend to ideas in themselves, but rather to the manner in which those ideas are expressed. The application of these conditions may encounter certain obstacles that hinder the protection of artificial intelligence technologies under copyright law, most notably the failure to satisfy the requirement of originality(Qtaishat, 2025, p. 165). This is because some technologies are produced by computer programs, meaning that computer software contributes directly to their creation, thereby giving rise to the argument that the minimum elements of creativity or intellectual effort necessary for protection may be absent(Ibrahim, 2019, p. 526).

Nevertheless, even if such technologies are generated through computer systems, they do not emerge arbitrarily; rather, they result from the capabilities of a person who undertakes the programming process and, through intellectual effort, inputs information into the computer. Concerning the Jordanian legislator's position on the two conditions required for artificial intelligence technologies to enjoy protection, it is evident that originality is expressly required(Qtaishat, 2025). However, the legislator does not explicitly exclude ideas from the scope of protection; instead, this exclusion is implicitly indicated through several provisions, most notably the expressions: "the form of expression may be writing, sound, drawing, photography, or movement… "(Jordan, Copyright Law No. 22, 1992, art. 3[b], [d]) and "whether in a machine-readable form or in any other form…"(Al-Nawafleh, 2018, p. 16)

Accordingly, we also find that the legislator acted correctly in amending the Copyright Law No. (14) of 1998 and replacing it with the amended Copyright Law No. (22) of 1999, which recognized computer programs—whether in source code or machine language—as works entitled to protection. This amendment constituted a substantive addition to the law, and computer programs continue to enjoy protection under the current legislation. (Rukba et al., 2025)

It is further noted that the legislator did not address the enactment of a special law dedicated to the protection of artificial intelligence technologies. Instead, legal protection was provided within the framework of the Copyright and Related Rights Protection Law and its amendments No. (22) of 1992. From this framework, and pursuant to the text of Article (3),it may be inferred that the legislator regarded artificial intelligence technologies as protected literary works falling within the scope of computer programs, whether expressed in source code or machine language. In other words, such technologies were not explicitly mentioned in the statutory text, which, in our view, was a prudent legislative choice(Jordan, Copyright Law No. 22, 1992, art. 3[b][8]).

Artificial intelligence is characterized by rapid and extensive development; it represents a modern science founded upon renewal, innovation, and continuous change(Qtaishat, 2024, p. 110). Consequently, adopting a fixed legal definition could result in confining certain technologies within its scope while excluding others, including technologies that may emerge in the futur(Alayaydeh, 2024, p. 148)e. As a result of classifying artificial intelligence technologies as literary works, the author enjoys full moral and economic rights over the work, as well as protection against any external infringement, in accordance with the provisions of the Jordanian Copyright Law and its amendments No. (22) of 1992(Jordan, Copyright Law No. 22, 1992, arts. 8–9).

Chapter Two

Protection under International Treaties for Artificial Intelligence Technologies

The Kingdom has ratified numerous international agreements relating to copyright, including the Arab Convention for the Protection of Copyright and Related Rights of 1987, as well as the Free Trade Agreement with the United States of 2001, which provides, inter alia, for the protection of authors' rights and related rights. It has also ratified the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty, among others.(Al-Talhouni, 2004, p. 7)

To clarify the most significant international agreements and treaties that have sought to confer legal protection on artificial intelligence technologies, by considering them works subject to the special rules of

copyright law—and to which Jordan has acceded—this section will address the Berne Convention, followed by the WIPO Treaty, as set out below:

1. **First Requirement:** Protection under the Provisions of the Berne Convention
2. **Second Requirement:** Protection under the Provisions of the WIPO Treaty

First Requirement

Protection under the Provisions of the Berne Convention

The Berne Convention is regarded as the first multilateral agreement in the field of protecting literary and artistic works. It was concluded in 1887 and subsequently amended several times, with the most recent amendment adopted in 1979. The Kingdom ratified its accession to the Convention in 1999 and remains a contracting party thereto.(Slimani & Zawazi, 2016, p. 58)

A review of the provisions of the Berne Convention reveals that Article (2)(Berne Convention, 1886/1979, art. 2[8]) sets out specific rules defining the literary and artistic works entitled to protection, as well as those excluded therefrom, in addition to clarifying the conditions that must be satisfied for works to benefit from protection(Berne Convention, 1886/1979, art. 3[3]). Concerning computer programs, their protection is addressed through a reference contained in Article (4) of the WIPO Copyright Treaty of 1996 to the Berne Convention. (Awaisheh, 2023).

This article provides that:

"Computer programs are protected as literary works within the meaning of Article 2 of the Berne Convention. Such protection applies to computer programs regardless of the mode or form of their expression."

Based on this reference, computer programs are deemed to enjoy protection by virtue of their classification as literary works, and such protection applies irrespective of the manner or form in which they are expressed. Accordingly, it may be concluded that Article (4) encompasses artificial intelligence technologies within its scope, as evidenced by the phrase "regardless of the mode or form of their expression."(Berne Convention, 1886/1979, art. 4)

The Convention also specifies the duration of legal protection for these works in Article 7(2), stating that the protection granted includes the life of the author and fifty years after his death. It should also be noted that the Convention includes, throughout its provisions, the rights and duties of authors. For example, Article 7(a) explicitly grants the right of rental to the author of computer programs. Finally, we refer to Article 33, which clarifies the jurisdiction of the court competent to settle international disputes regarding the interpretation or application of the provisions of this Convention, which falls under the jurisdiction of the International Court of Justice." (Alhrerat et al., 2025) Any dispute between two or more Union countries concerning the interpretation or application of this Convention which is not settled by negotiations may be submitted by any of the States concerned to the International Court of Justice by means of an application submitted in accordance with the Court's procedure, unless the States concerned agree upon another method of settlement. The State which submits the dispute to the Court shall notify the International Bureau, which shall inform the other Union countries of the matter."(Berne Convention, 1886/1979, art. 33)

Second Requirement

Protection under the Provisions of the WIPO Treaty

WIPO is the abbreviation for the World Intellectual Property Organization; an intergovernmental international organization affiliated with the United Nations. It was established in 1967 and is headquartered in Geneva. It is worth noting that the Kingdom is a member of WIPO, having signed its accession in 1985 (Al-Talhouni, 2004, p. 7). This organization works to support intellectual property generally and to protect industrial, literary, and artistic property worldwide. This is achieved through the cooperation of member states, and any state may join it once the conditions set out in the WIPO Treaty are met(Slimani & Zawazi, 2016, p. 60).

The WIPO Copyright Treaty is a special agreement within the framework of the Berne Convention. It focuses on protecting works and the rights of their authors in the digital environment. Each party to the Treaty, even if it is not a member of the Berne Convention, is bound by the substantive provisions contained in the Paris Act of 1971 of the Berne Convention for the Protection of Literary and Artistic Works(World Intellectual Property Organization, 2022).

A review of the provisions of the Treaty shows that the subject matter of protection includes all computer programs in their various forms, as confirmed by Article 4(Berne Convention, 1886/1979, art. 4).This means that the Organization extends protection to programs based on several elements: the program in the narrow sense, the program's description, and the documentation accompanying the program. (Alayaydeh et al., 2025) Articles 6 and 8(WIPO Copyright Treaty, 1996, art. 6&8) provide that certain acts may not be carried out without the consent of the program's author, namely, distribution, reproduction, and use, as each of these acts constitutes an infringement of the author's rights over those programs(Slimani & Zawazi, 2016, p. 60).

The Treaty further provides in Article 14, in its two paragraphs, that member states must adopt, in accordance with their national laws, all measures necessary to ensure the effective application of the Treaty. This includes taking effective measures against any infringement of the rights protected under it, including imposing prompt and deterrent penalties to prevent any infringement of protected works(WIPO Copyright Treaty, 1996, art. 14).

Through this, the researchers conclude that international treaties, followed by Jordan's domestic legislation that has signed and acceded to those treaties, have included computer programs, including artificial intelligence technologies, within the framework of copyright laws. The researcher supports this trend because the World Intellectual Property Organization (WIPO) has resolved the debate regarding the protection of computer programs as part of copyright law. This is confirmed by Article 4 of the WIPO Copyright Treaty, which refers to Article 2 of the Berne Convention. (Awaisheh & Al-Dabbas, 2024a)

Conclusion

As a conclusion to what we have discussed in our research entitled "The Legal Regulation of Artificial Intelligence Technologies," it becomes clear that legal studies in the field of artificial intelligence technologies are still developing. The debate continues regarding their legal nature—whether they fall under patents or copyright—which this study aimed to analyze and examine to achieve more effective and serious protection at both the national and international levels. The most important results we reached and the recommendations proposed can be summarized as follows:

First: Results

1. The definition of "electronic intermediary" provided by the legislator in Article 2 of the Electronic Transactions Law No. 15 of 2015 may encompass what is meant by artificial intelligence, although this definition is limited to only some of the characteristics of these technologies.
2. The nature of artificial intelligence technologies is that they consist of ideas and arrangements of algorithms expressed in an innovative and creative form. Therefore, they are subject to protection under the general rules of the Copyright and Related Rights Law and its amendments No. 22 of 1992, regardless of whether these works are stored or transmitted via computer.
3. International treaties, followed by Jordan's domestic legislation that has signed and acceded to those treaties, have included computer programs, including artificial intelligence technologies, within their internal laws under copyright law.

Second: Recommendations

1. We recommend that the Jordanian legislator amend the definition of "electronic intermediary" in the Electronic Transactions Law to encompass all the characteristics of artificial intelligence technologies. Accordingly, we propose the following text: "An electronic program that executes an action or responds to an action automatically with the intention of creating or deriving a message of information, sending or receiving it, or which is capable of self-learning and making decisions independently without any human intervention."
2. We propose that the Jordanian legislator enact legal provisions that address all the problems that artificial intelligence technologies, as the current Electronic Transactions Law of 2015, is not sufficient to regulate them, and establish controls and restrictions on their use.
3. We recommend that legal researchers conduct numerous studies and research covering all the gaps that may affect the protection of artificial intelligence technologies, to comprehensively address all their legal aspects and protect individuals' rights, due to the scarcity of references, laws, and judicial rulings related to this issue.

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