

**Article history (leave this part):**

Submission date: 29.09-2024

Acceptance date: 15-06-2025

Available online: 27-12-2025

**Keywords:**

artificial intelligence, legal regulation, Ethics, Fourth Industrial Revolution, Robots

**Funding:**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**Competing interest:**

The author(s) have declared that no **competing interests** exist.

**Cite as (leave this part):**


Hanan Abufares Elkhimry; . (2024). Title. Journal of Science and Knowledge Horizons: 4(1), 283-293. <https://doi.org/10.34118/jskp.v5i02.2727>



The authors (2025). This Open Access article is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0) (<http://creativecommons.org/licenses/by-nc/4.0/>). Non-commercial reuse, distribution, and reproduction are permitted with proper citation.

## ***The problem of the legal status of artificial intelligence in Algerian legislation***

I Hassaine Oumria (Algeria)\*, [o.hassaine@cu-aflou.edu.dz](mailto:o.hassaine@cu-aflou.edu.dz)

2-  <https://orcid.org/0009-0006-1866-3955>

### ***Abstract:***

*This intervention addresses the rapid advancements in science and industry, particularly in artificial intelligence (AI). Unlike traditional programs, AI systems operate autonomously and make unpredictable decisions based on their environment, raising concerns about responsibility for their actions. The widespread use of AI and robots presents significant challenges, especially regarding accountability and the adequacy of existing legislation.*

*Accordingly, this study examines current and future challenges of AI, with a focus on its legal regulation under Algerian law. It explores the legal status and potential legal personality of AI to determine liability for errors it may cause. Given the growing prevalence of AI and the likelihood of related crimes, legislative intervention is essential to address its legal recognition and consequences.*

\* *Hassaine Oumria*

**Introduction**

The term artificial intelligence has increased in use recently in light of the technological renaissance that the world has witnessed in the field of development of high-tech machines and software. Although artificial intelligence was until recently just a dream in the imagination of humanity, today it has become a tangible reality that people resort to often, even... Although we sometimes do not realize that determining whether the machine we use is characterized by artificial intelligence or not is difficult and relative, then artificial intelligence has enormous potential that can be used to achieve social good and achieve sustainable development goals, and even with its use to help address many... The most important social issues in humanity, their use also raises concerns about the violation of human rights such as the right to freedom of expression, the right to privacy, data protection, and non-discrimination. AI-based technologies offer great opportunities if they are developed in relation to global rules, ethics and standards, and if they are based on values based on human rights and sustainable development..

Algeria is not immune to the increasing use of artificial intelligence systems in various fields, which would create a number of impacts on the legal positions of individuals, which require raising many questions and challenges regarding the extent to which current Algerian legislation is compatible with them, and its ability to absorb the unique characteristics of these systems. Therefore, legal bodies and the jurisprudential community around the world are seeking to keep pace with this emerging reality to create a legal system that enshrines the presence of artificial intelligence in their judicial systems.

The widespread and increasing use of artificial intelligence and information technology raises the question about the liability resulting from this use. At the forefront of the questions is the extent of the adequacy of the current civil liability rules to compensate for the damages resulting from the use of artificial intelligence, or whether new rules must be adopted specifically related to artificial intelligence. In the field of digital management that Algeria seeks to achieve on the ground, for example, in the future, artificial intelligence systems may actually be used to provide assistance in automating administrative decision-making processes or concluding administrative contracts. Given the rapid developments in this field, the challenges and opportunities related to harnessing artificial intelligence in... Administrative and legal systems and their

effects on human rights and the rule of law must form part of the discussions between legal scholars and the Algerian legislator.

The importance of this intervention appears through knowing the suitability of current legislation and its ability to accommodate the unique characteristics of artificial intelligence technology, and highlighting some of the current challenges of artificial intelligence in the Algerian legal system, or those that may arise in the future, and the goal of this intervention is evident in Our attempt is to simulate the legalization of artificial intelligence by discussing its legal status and the extent to which it enjoys a legal personality, to determine who is responsible for the errors that it may cause and who will bear the civil and criminal liability until the legal penalty is applied to it.

### **The problem of the intervention:**

What legal status does artificial intelligence have, and who is responsible for the errors resulting from it?

### **Study Approach :**

To examine this topic in light of the aforementioned problem, the study required the use of the descriptive approach in our discussion of the meaning of artificial intelligence, and in our discussion of the various provisions related to artificial intelligence within the framework of applying traditional legal rules as well as the new innovative rules to deal with its developments that have appeared on the ground, the analytical approach was used..

### **Intervention plan:**

In order to become familiar with the various details of the topic; In the first section, we will discuss the conceptual framework of the legal personality of artificial intelligence, and then we will address in the second section the legal implications resulting from the personalization of artificial intelligence.

### **The first section: The conceptual framework of the legal personality of artificial intelligence**

In order to become familiar with the various details of the topic related to artificial intelligence, we will talk about the framework Conceptual legal personality and artificial intelligence by giving a definition of artificial intelligence in the first requirement, then we discuss the extent of the possibility of it enjoying legal personality in the second requirement.

### **The first requirement: the concept of artificial intelligence**

In their definition of the concept of artificial intelligence, some legal commentators and jurists address two types of artificial intelligence: strong artificial intelligence, which enjoys complete independence from humans, and weak artificial intelligence, which relies primarily on humans to program its algorithms (Saida Bouchareb & Hisham Kallo, 2022, p. 497) Below, we will discuss defining the concept of artificial intelligence without delving into its types, by giving a definition of it and identifying its distinctive characteristics.

### **The first section: Definition of artificial intelligence**

Diversified There were many intellectual trends in defining artificial intelligence and they differed according to the view of those dealing with it. Therefore, several formulas were formulated in defining it, the most important of which was what Dr. Abdel Majeed (2009) stated. He expressed artificial intelligence as being computer programs searching for advanced methods that imitate the way and ability of human thinking, which is Thus, it does not aim to compare or resemble the human mind, but rather aims to understand the complex mental processes that the human mind performs during the thinking process and then translate the mental processes into mathematical processes that enhance human capabilities and contribute significantly to solving complex problems that humans encounter in various areas of life. (Abdul Majeed & Qutaiba Mazen, 2009, p. 53)

Meanwhile, we find that Dr. Asmaa Belilita (2022) in her article expressed that artificial intelligence is one of the sciences branching out from computer science, which is the science concerned with making computers perform tasks roughly similar to human intelligence processes. (Asma Belilita, 2022, p. 19)

As Dr. Faten Farouk Al-Halawani (2022) defined it, it is behavior and certain characteristics characterized by computer programs that mimic human mental abilities and work patterns, such as the ability to learn, deduce, and react to situations that have not been programmed. (Faten Farouk Al-Halwani, 2022, p. 5)

In general, it can be said that artificial intelligence is a specialty or field in computer science whose goal is to develop machines and systems, so that they can perform tasks that are seen as requiring human intelligence, whether that requires limited human intervention, or without the intervention of any human factor, and Dr. Ben confirms Othman Farida (2022) emphasized the wide variety

of fields of application of artificial intelligence, as it includes computer science applications at the hardware and software levels, in particular, and its applications in the field of biology and psychology. Mathematics and other fields concerned with the structure and functions of the brain and its original thinking capabilities. Such as learning, deducing, storing and processing information and knowledge; As for the applications of artificial intelligence, they are expert systems. neural networks; Genetic algorithms and intelligent agents (Bin Othman Farida, 2022, pp. 158-160), We see that this technology has extended to almost all aspects of life and its various fields, including the field of legal sciences. Therefore, legislative systems are racing to create a legal framework to regulate this technology and determine the legal effects resulting from its use.

### **Second section: Distinctive characteristics of artificial intelligence**

Artificial intelligence is distinguished by distinct and unique characteristics, including:

**\_Artificial intelligence has the ability to Adaptation** That is, adapting to the relative absence and deficiency of information and finding solutions despite this Adopting new ideas, using experimentation to discover new things (Abdul-Ghani Al-Aqel & Khaled Qashi, 2021, pp. 42-43).

#### **\_The ability to learn automatically and continuously and quickly respond**

That is, artificial intelligence has the ability to learn from problems and benefit from various previous experiences that it has encountered, and its speed of analysis and response is considered very high, regardless of the quantity and nature of the data entered to it..

#### **\_Artificial intelligence is non-physical in nature:**

In essence, it is a collection of applications Of algorithms or software, such that this software constitutes the logical architecture of any system My information.

#### **\_ The difficulty of determining the geographical concentration of artificial intelligence**

This is what led to it escaping any control or oversight, and it is a characteristic that is expressed by not being spatially confined because it is not concentrated in a specific place.

#### **\_Difficulty predicting the reactions of artificial intelligence :**

That is, the difficulty of identifying or limiting actions or their harmful effects. The reason for this is that programming artificial intelligence means providing it with many actions that it can perform, with which it is not possible to predict reactions or results (Mustafa Abu Mandour Musa Issa, 2022, pp. 234-266)

### **The second requirement: The possibility of artificial intelligence acquiring legal personality**

The law is characterized by the independence of its concepts. The term “person” has a specific legal meaning linked to the law’s idea of rights. Legal personality is not linked to awareness, will, or human character. Rather, it is linked to rights that must be legally respected and to whom these rights are attributed. A person in the eyes of the law is everyone who enjoys By definition, legal personality is the ability or ability to acquire rights and assume obligations. Below we discuss the meaning of legal personality and the acquisition of artificial intelligence for it.

#### **The first section is the concept of legal personality**

A legal (legal) person can be defined as: a group of people and funds that aim to achieve a specific purpose, and the law recognizes it as a legal personality to the extent necessary to achieve that purpose. It is worth noting that the term legal persons explicitly means that it acquires legal personality by law, that is, by the text of the law that considers it as such and in At the same time, it implies that they are not natural persons, but rather the legislator grants them that legal status so that they can exercise rights and adhere to duties in order to achieve significant social goals, whether for the whole society or a group of its sects (Ishaq Ibrahim Mansour, 1999, p. 220).

From the definition we have provided, we note that it is based on three elements:

A/ The legal person consists of a group of persons or funds, or a group of persons and funds together.

B/ It has a legal personality independent of its constituent groups based on a text in the law

C/ The establishment of the legal person must be to achieve a social goal that is determined in the law of its establishment.

### **The second section: The scope of the virtual personality, artificial intelligence**



A jurisprudential dispute has arisen regarding the acceptability of the idea of granting Artificial intelligence is a legal entity. There are those who reject and support this idea:

\_The trend that rejects the idea of artificial intelligence having legal personality: This is the trend taken by both French juristsLoiseau and the jurist Bourgeois emphasized the danger of this step; Which may lead to many dangerous distortions because recognition leads to a lack of responsibility for producers and users of smart devices in addition to their lack of keenness to use and manufacture safe smart robots (Siham Darbal, 2022, pp. 156-157)Therefore, most comparative laws do not recognize the legal personality except for the natural person and the legal person.

**\_ The trend supporting the idea of artificial intelligence having legal personality:**

In the face of the trend that denies the idea that artificial intelligence has legal personality, a trend has emerged that supports granting legal personality to artificial intelligence. A group considered it as a person. “Virtual, like Professor Dr. Hammam Al-Qusi.” The more accurate term is virtual personality instead of electronic personality, and another group expressed that it is submissive, such as the European Economic and Social Council; And another group expressed it as an electronic person, such as the European legislator (Saida Bouchareb & Hisham Kallo, 2022, p. 500).

In light of the absence of adequate legal regulation of artificial intelligence in Algerian legislation and comparative legislation such as Egyptian and French legislation, in determining the scope of the virtual personality of artificial intelligence we find it in light of European legislation on robotics. Anyone who is familiar with the texts of the European decision related to the rules of civil law on robotics clearly realizes that the European legislator did not recommend granting This personality belongs to various artificial intelligence machines, but rather to some of them, the more technical ones that work with the concept of deep learning. He pointed out that granting (the robot) this personality must be done according to what is appropriate to the needs and nature of the robot, but not within the framework of the right to separate from the human, at least At the present time, but within the framework of his legal protection (Knox & Lisa, 2012, p. 9).

**The second section: The stages of artificial intelligence acquiring legal personality and its implications**

The hypothetical acknowledgment of legal personality by the Algerian legislator can take place in the context of the fact that artificial intelligence possesses a will independent of humans, and this is currently closer to denial. However, if it is within the framework of protecting it and determining the controls of its work, then here we are closer to acknowledgment than denial, because in order for intelligence to be able For an artificial intelligence to make a decision, it must have the ability to choose beyond the limits of the programs set for it, and then it must possess awareness and awareness, which necessitates moving beyond the stage of artificial intelligence to the stage of artificial perception, a stage from which it is still far away at the present time, and perhaps the most important characteristic. Artificial intelligence acquires it by acquiring moral personality, which is the characteristic of independence, which will raise to us the issue of responsibility, a matter for which legislative institutions have not assigned a real place in their texts yet, which requires the intervention of legislative institutions to determine their position on artificial intelligence. Below we discuss the supposed stages of acquiring artificial intelligence. Legal personality and the most important effects resulting from its acquisition.

**The first requirement: The stages of artificial intelligence acquiring legal personality**

The possibility of the Algerian legislator granting virtual personality to artificial intelligence based on the opinion of those who advocate granting it and confining it to a specific scope must take place according to specific stages. The virtual legal personality of artificial intelligence will not appear all at once according to the opinion of those who advocate its existence, but must go through several stages, depending on the possibility Each of them is held accountable on the one hand, and according to the degree of their intelligence on the other hand, which we will explain below:

**The first section: The default legal personality of artificial intelligence (incomplete) in the non-discrimination stage:**

As a natural person, a person advances through the stages of his legal personality, moving from nothingness to a higher stage in terms of rights and obligations, which is called the stage of lack of discrimination. That is, this



person exists and is recognized as a person legally (Robin Mackenzie, 2015, p. 198), but it lacks intellectual property. What is required is for him to distinguish between his beneficial and harmful actions. If he is granted full legal personality, he will cause himself and others serious harm. (Salam Abdullah Karim, 2022, p. 127).

As for the Algerian legislator, he decided not to grant a person legal personality during this stage except within the narrowest limits, which grant him recognition of legal personality on the one hand, and his enjoyment of. On the other hand, he has rights and obligations without the right to manage his money, as Article 42 of the Algerian Civil Code stipulates (Order No. 75-58, 1975): A person who lacks discrimination due to young age, imbecility, or insanity is not eligible to exercise his civil rights. Anyone who has not reached thirteen years of age is considered unprivileged.

A person who is not distinguished according to the text of the above article is not eligible for civil actions at all, and on the other hand, he is suitable as a recipient of financial rights. Because receiving those rights is a definite benefit for him, or as he is bound by the force of the law as a result of his harmful actions, without him having the right to dispose of his financial assets.. Since it is an aspect of jurisprudence like the French jurist BOURCIER. He called for the possibility of moving from artificial intelligence to a virtual person. DeL'Intelligence Artificielle à La Personne Virtuelle\_ Ability Robots are able to perform many of the tasks performed by humans, and in a way that mimics human intelligence, it has become an existing reality. The intelligent machine is capable of surpassing human mental capabilities that are limited in dealing with things in a natural manner, by relying on perception and wisdom in processing information and facts. (Algerian Civil Code, art. 42)

By dropping Article 42 and others from the Algerian Civil Code (Salam Abdullah Karim, 2022, p. 128) Assuming that the Algerian legislator has approved the virtual legal personality for smart robots, and based on that, it is not surprising in the future that an undistinguished legal legal personality will be granted to the undistinguished robot in the stage of weak artificial intelligence, that is, when it is dependent on humans to program it and provide it with what is necessary to perform its tasks. This is in order to make him eligible for independence with a financial liability officially registered in his name during the stage of his incomplete self-management ability and his dependence on

others (humans) in concluding actions. That would burden him with obligations that arise from his actions that are harmful to others, as well as a credit and reward for the fruits of his beneficial actions. As the current generations of artificial intelligence, as well as the future, are now able to work, produce and create, and this will enable them to receive wages that will be entered into their financial liability.

### **Section Two: Completion of the virtual legal personality of artificial intelligence:**

The Algerian legislator made the stage of discrimination a pivotal step in the life of a natural person from a legal standpoint. It is the decisive point in time in which one moves from incomplete capacity, which is limited to receiving rights and obligations by force of law, to the stage of complete discrimination in which the person is allowed to conclude the actions that give rise to those rights and obligations, and because the legal personality in Algerian legislation authorizes its owner to manage his resources and money independently and completely, and in the event of The Algerian legislator approved the virtual legal personality of artificial intelligence, and although it seems difficult to give it a full virtual legal personality, it is not impossible, as discrimination means the ability to make decisions with a good scope of freedom in managing financial assets, which requires mental capabilities that exceed the limits of Autonomy in movement or simple logical simulation of the behavior of a natural person, to the ability to adapt in life situations with their financial risks, and this supposed reality is not far-fetched for artificial intelligence, as an opinion from jurisprudence has indicated (Kazuhiko Kawamura, 2005, p. 5) in the field of artificial intelligence, indicates that an intelligent machine can perceive human needs and adapt its behavior according to that perception, and accordingly, artificial intelligence will be closest to the human mentality in the future.

However, it can be said that in the future, artificial intelligence will be qualified to conclude actions that may be imposed on it or for its benefit, resulting in countless financial responsibilities, even if this would be difficult for the Algerian legislator to regulate the provisions of this new entity and limit its legal actions.

In our opinion, the maximum limits for granting legal personality to artificial intelligence cannot, at best, exceed the limits of its first stage, i.e. the hypothetical (incomplete) legal personality.

### **The second requirement: The legal implications of artificial intelligence acquiring legal personality**

Whereas the acquisition of legal personality by artificial intelligence is a complex legal issue that requires the identification of many legal aspects and potential implications, including the rights and responsibilities related to the artificial personality, as well as privacy issues, intellectual property rights, insurance issues, and civil and criminal liability. In addition, the acquisition of legal personality by artificial intelligence may affect multiple areas such as work, trade, and technology-related legislation. Below are some of the legal implications of artificial intelligence acquiring legal personality:

#### **1\_ Legal consequences resulting from the establishment of civil and criminal liability**

The question may arise to the Algerian legislator, if he recognizes the legal personality of artificial intelligence, about who bears legal responsibility in the event of damage or violation of laws due to decisions or actions carried out by artificial intelligence in its capacity as a legal personality.

- Civil liability here relates to compensation for damage caused by artificial intelligence to the legal personality of individuals or other entities (Salam Abdullah Karim, 2022, p. 143).
- Criminal liability here involves issues such as crimes that the AI may commit in its capacity as a legal person, such as violating intellectual property rights or using personal data illegally.

#### **2\_ Obligations to protect rights and intellectual property:**

A question may also arise about who owns the intellectual property rights to works created by artificial intelligence, and whether an artificial personality can be the owner of these works.

- This element includes interaction with laws related to intellectual property rights, such as copyright, trademarks and patents.
- It must be determined who holds the intellectual property rights for works produced by artificial intelligence, and whether the artificial character is capable of owning intellectual property rights.

#### **3\_ Legal implications for protecting personal data and privacy:**

Issues may arise regarding the protection of users' data privacy in relation to interaction with artificial intelligence, and whether the artificial character is authorized to collect and use personal data. (Amr Ragab Al-Sayed Al-Sadiq, 2023, pp. 889-908).

- This element relates to laws and legislation related to protecting users' data and privacy.
- It must be determined whether the artificial personality is authorized to collect and use personal data, and whether it is obliged to comply with legislation related to the protection of personal data.

#### 4\_ Legal implications arising from insurance and financial responsibility

New challenges may arise in determining appropriate insurance and financial liability in the event of accidents or losses resulting from the actions of an artificial character. (Ahmed Majed, 2018, p. 201)

This element relates to determining appropriate insurance for potential risk situations to which individuals or entities may be exposed due to the actions of the artificial personality.

- The responsibility of the artificial personality and other concerned parties must be determined in the event of financial losses or damages.

#### **5\_Commitment to enact new legislation and legal regulations by the Algerian legislator:**

The emergence of artificial intelligence of legal personality may require new legislation and regulations to define its rights and the laws governing its interaction with humans and other entities..

The emergence of artificial intelligence for the legal personality may require the development and modernization of legislation and regulations to regulate interaction with it and define its rights and responsibilities.

- Laws and rules that regulate the use of artificial intelligence and its interaction with humans and other entities must be defined.

There are other legal effects that could result from artificial intelligence acquiring legal personality, including:

\_Contracting and legal relations: The presence of a legal personality and artificial intelligence can affect contractual relations and the implementation of legal contracts.

\_Financial and tax legislation: There may be new tax and financial legislation and policies involving artificial intelligence legal entities.

\_Practical relations: Questions may arise about the practical relationships between humans and artificial intelligence entities, including issues of employment and labor responsibilities.

Criminal legislation: Artificial intelligence legal entities can raise new questions about criminal liability and penalties in the event of crimes.

\_Ethical and social issues: New challenges may arise related to values and ethics in the use and development of artificial intelligence entities.

These are some of the additional legal implications that may result from artificial intelligence acquiring legal personality, and there remains a wide range of other legal issues that may arise from it..

### **Conclusion :**

It is difficult, at least in the foreseeable future, to imagine legislative intervention by the Algerian legislator to establish a legal framework under which artificial intelligence will be granted legal personality for many reasons, the most important of which is the lack of spread of this phenomenon in the Arab environment in general and Algeria in particular, in a way that prompts the Algerian legislator to take such legislative intervention. The law is the result of necessity. As long as this need does not exist, it is not conceivable that such intervention would occur,

However, despite this, granting this legal personality to artificial intelligence remains possible and not impossible, as the legislative need at the present time has established a special legal treatment for smart applications that are self-learning and acting, so that there is no obstacle in transferring them from the realm of things to the realm of people.<sup>0</sup> Especially since Algeria today is in the process of construction and development, which requires a major expansion in the use of artificial intelligence in many service and societal sectors, such as in oil and gas works, hospital works, roads, construction works, practical research fields, and other social, economic and environmental fields, and even in some Government administrative work.

### **Results :**

Artificial intelligence has made significant advancesHMiin various fields. AndHThis Developments require legal interventionHTHa, Especially What?A related to the version Decisions are made according to artificial intelligence systems that are made in a purely automated manner.

Wah The Legislative intervention is necessary to limit its expansion This is amazing Decisions ; because Ha Yesn to form tH This This Some rights H Basic like Right in Life Private.

Specifically regarding liability Consequences About the use of artificial intelligence we found That the majority of jurisprudence no The now saw a justification for the intervention of the legislator, and that there was a basis This responsibility he Liability for defective products, and back-up liability for Guard Things, And in the law The Algerian Both types of liability are available, i.e. liability for defective products And responsibility for Guard The thing.

### **Intervention suggestions:**

- ✓ We suggest to Arab legislative institutions, including the Algerian legislator, to expedite the enactment of legislation regarding the use of artificial intelligence.
- ✓ We call on Arab legislative institutions, including the Algerian legislator, to enshrine the assumed responsibility resulting from the use of artificial intelligence.
- ✓ Make scientific efforts and further studies Find hlol For problems Proof Damages Al-Najamaon Use of artificial intelligence, in Zto Development Continuous for him

### **References**

1. \_ Bin Othman Farida, *Artificial Intelligence (Legal Comparison)*, *Journal of Politics and Law Notebooks*, Kasdi Merbah University, Ouargla, Algeria, Volume 12, Issue 02 of 2022
2. \_Ahmed Majed, *Artificial Intelligence in the United Arab Emirates*, Department of Political and Economic Studies, Ministry of Economy, United Arab Emirates, year 2018.
3. \_Ishaq Ibrahim Mansour, *The Theories of Law and Right and Their Applications in Algerian Laws*, Office of University Publications, Algeria, 1999..
4. \_Asma Belilita, *Legal and Regulatory Enshrinement for Artificial Intelligence in Algeria*, *International Journal of Artificial Intelligence in Education and Training*, University of Algiers 1, January 2022.



5. *\_Saida Bouchareb, Dr. Hisham Kallo, the legal center for robots in light of the rules of civil liability. Journal of Judicial Jurisprudence"; Mohamed Khidir University of Biskra, Volume 14; Issue 29 March 2022.*
6. *\_Salam Abdullah Karim, Legal Regulation of Artificial Intelligence, PhD thesis, University of Karbala, College of Law, Republic of Iraq, year 2022..*
7. *\_Derbal arrows; The problem of recognizing the legal personality of a smart robot; [Journal of Judicial Jurisprudence](#), No. 14 No. 1; Year 2022.156.*
8. *\_Abdul Ghani Al-Aqel, Khaled Qashi Big data and artificial intelligence to enable the transformation to a smart government; UAE case study; Namaa Al-Eqtisad and Trade magazine, issued by the Laboratory for Managing Local Communities to Achieve Development; Mursali Abdullah Tipaza University Center, Volume 05; Issue 02; December 2021.*
9. *\_Abdul Majeed, Qutaiba Mazen, The use of artificial intelligence in electrical engineering applications, a comparative study, Master's thesis, Arab Academy in Denmark, Denmark, 2009.*
10. *[Amr Ragab Al-Sayed Al-Sadiq](#) The impact of artificial intelligence on values, human rights, and the right to protect personal data, Benha Journal for the Humanities, Faculty of Law, Benha University, [Volume 2, Issue 4](#) October 2023.*
11. *\_Faten Farouk Al-Halwani, The effectiveness of artificial intelligence to enrich the creative design of cartoon characters, International Journal of Artificial Intelligence in Education and Training, January 2022 issue..*
12. *\_Mustafa Abu Mandour Musa Issa, The adequacy of the general rules of civil liability in compensating for the damages of artificial intelligence, an original comparative analytical study; Journal of the Faculty of Law, Damietta University for Legal and Economic Studies; Issue 5, January 2022..*
13. *\_Knox and Lisa: The Story of Robotic Technology, Arab House of Science, 1st edition, Year 2012.*

**Legal texts:**

14. *[Order No. 75-58 dated 20 Ramadan 1395 corresponding to September 26, 1975 containing the Civil Code, Official Gazette No. 78 of 1975, Modified and complemented b](#)[Law No. 83-01 of January 29, 1983, Law No. 88-14 of May 3, 1988, Law No. 89-01 of February 7, 1989, Law No. 05-10 of June 20, 2005, Law No. 07-05 of On May 13, 2007.](#)*

1. \_ KAWAMURA, Kazuhiko, *Cognitive approach to a human adaptive robot development, International Workshop on Robot and Human Interactive Communication, Proceedings of the Institute of Electrical and Electronics Engineers (IEEE), the US, 2005.*
2. \_Mackenzie, Robin, *Sexbots: our partners, Association Multitudes « Multitudes », 2015, n° 58, 2015.*