Intellectual Property Protection in the Age of Digital Technology

- Artificial intelligence as a model -

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Abstract

The development of information and communication technology has expanded the scope of intellectual property, resulting in what is known today as electronic or digital works, which include several types, the most prominent of which are programs, systems, and entities of artificial intelligence, which is a group of technologies whose use allows the system to perform tasks that usually require human intelligence. These revolutionary technologies have begun to challenge the traditional frameworks for protecting intellectual property, as they can access protected works and feed on them to enhance their self-learning without a license from their owners, and even allow others to access these works and view their content, which makes the issue of protecting intellectual property in light of these complex technologies limited, requiring its expansion through concerted international efforts to understand how these technologies work and establish agreements that regulate their development and public interaction with them.

Keywords

Intellectual property ;
artificial intelligence ;
electronic works ;

حماية الملكية الفكرية في ظل التكنولوجيا الرقمية – الذكاء الاصطناعي نموذجا -

ملخص

وسع تطور تكنولوجيا المعلومات والاتصالات من نطاق الملكية الفكرية حيث نتج عنها ما يعرف اليوم بالمصنفات الإلكترونية أو الرقمية التي تشمل عدة أنواع لعل أبرزها برامج وأنظمة وكيانات الذكاء الاصطناعي، الذي هو مجموعة من التقنيات التي يسمح استخدامها للنظام بتنفيذ المهام التي تتطلب عادة ذكاء بشريا، هذه التقنيات الثورية أضحت تتحدى الأطر التقليدية لحماية الملكية الفكرية إذ بإمكانها الوصول للمصنفات المحمية والتغذي عليها لتعزيز تعلمها الذاتي دون ترخيص من أصحابها، بل وحتى إتاحة وصول الغير لهذه المصنفات والاطلاع على محتواها، الأمر الذي يجعل من مسألة حماية الملكية الفكرية في ظل هذه التقنيات المعقدة محدودة، يقتضي توسيعه من خلال تظافر الجهود الدولية من أجل فهم كيفية عمل هذه التقنيات ووضع اتفاقيات تضبط تطويرها وتفاعل الجمهور معها.

الكلمات المفتاحية

الملكية الفكرية ؛
الذكاء الاصطناعي ؛
المصنفات الإلكترونية ؛

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Introduction:

Knowledge and creativity are a complex process that occurs in the human mind when thinking deeply about specific phenomena and interpreting them. This results in the emergence of various inventions and innovations. This intellectual product needs protection against imitation, transfer, intrusion or theft, in which a person attributes new knowledge that did not come from him. Here, intellectual property emerged, which was adopted by the beginning of international treaties and agreements, so that the matter developed.–later– To the point of putting in place local rules and laws to protect them.

With digital technology invading all areas of activity and entertainment over the past half century, our contemporary societies have come to rely on the comprehensive use of information and communication technology to build an image of modernity, performance, innovation and suitability to trends in the labor market, culture and the social world, which has contributed to the dissemination of new knowledge through digital media instead of traditional media by creating books, research, images and various software, the latter of which has facilitated the dissemination and circulation of new knowledge on the one hand and on the other hand has created a new type of violations of knowledge, as all information can be made available digitally, and thus creations and works can be reproduced accurately and almost without cost and in unlimited quantities, and even made available to anyone via the Internet, which has required legislators to make amendments to the rules for the protection of intellectual property in line with the technological developments taking place.

However, the increasing speed of technological changes and the tremendous revolution in computer technology, the Internet, software, databases and hypertext links, the emergence of artificial intelligence technologies as one of the most striking technologies of our time, the current spread of this technology everywhere in most human activities, and the development of its use in both the public and private spheres, due to its ability to assist all of humanity in a wide range of tasks, including its use to support attacks on various creative works, put the known frameworks for protecting intellectual property to the test and made us wonder to what extent intellectual property can be protected in light of digital technology, especially artificial intelligence technologies?

The answer to the aforementioned problem requires us to define the development of intellectual property in light of the presence of changing digital technology through (the first section), while we allocate (the second section) to the risks surrounding intellectual property in light of the widespread use of various digital technology.

First Section: Intellectual Property in the Age of Digital Technology

The spread of information and communication technology in most areas of social and economic life has created today what is called the knowledge society, which is characterized by the intensification of digitization, recording and dissemination of knowledge in a more efficient and faster way than ever before, as this information revolution is linked to several issues, perhaps the most prominent of which are intellectual property issues.[1]The latter we mean by; These rights are recognized in favor of every person for his innovative activities and intellectual achievements used in industry, and enable their owner to invest in exploiting his innovation, trademark or trade name in the face of everyone.[2]"

We differentiate between two types of intellectual property rights: copyright and related rights and industrial property rights.

As for Copyright is a legal term used to describe the rights of creators over their literary and artistic works. The works covered by this protection of rights include the name of the author and the related rights related to the rights of the producers of these literary, musical, cinematic, and plastic works, etc. The basis of this protection is to encourage creativity and innovation.

As for industrial property rights, they are concerned with protecting two areas: the area of distinctive trademarks (brands) and manufacturing or marketing marks that enable the distinction between the goods and services of a particular institution and the goods and services of other institutions, as well as the area of inventions, patents, designs, and industrial and commercial secrets[3].

There is no doubt that the information revolution has contributed significantly to expanding the scope of intellectual property, as it has resulted in what is known today as electronic or digital works, which jurisprudence has defined as: “a creative intellectual work belonging to information technology, which is dealt with digitally[4]".

Digital works are of several types, the most prominet of which are computer programmes ‘programmes les d'ordinateurs’, which the Algerian legislator considered as literary works when he referred to them through Article 4 of Ordinance 03-05 on Copyright and Neighbouring Rights, but without giving a definition of them, giving way to jurisprudence, which defined them as: "A series of instructions addressed to a computer for the purpose of enabling it to perform specific operations. Computer programmes consist of several elements: codes, data, algorithms, etc[5]" .

It is worth noting here that digital works include several types: computer programmes (logiciels) which is defined as: "the set of programmes, instructions, rules and even documents associated with the operation of data processors[6]." For example, some of these computer programmes include the Windows, MacOS or Linux operating system, or the Abobe Reader Acrobat application software for reading digital files, among others.

In addition, databases are also considered Base DATA, integrated circuit topography, and websites Website Of digital works, but the question that urgently arises here is the legal system under which artificial intelligence programs, applications or systems fall?

Before answering the question, we must clarify what is meant by the term artificial intelligence (IA)Artificial Intelligence Which consists of two terms; the first is artificial It refers to something made, and the second Intelligence It means the ability to understand or think.[7]Artificial intelligence has been a subject of science fiction for a long time until it became a reality today, as we witness its application in various fields such as: cars, health, logistics and industry through robotics.

To this day, there is no comprehensive and exhaustive concept for artificial intelligence, which is presented as one of the most strategic technologies of the twenty-first century, perhaps because the majority of jurists are struggling to reach a definition that includes complex technical terms such as machine learning, big data, algorithms, or the Internet of Things[8].

The origins of artificial intelligence can be traced back to the 1950s, when the technology that would enable its development emerged. At that time, the term artificial intelligence was coined to describe machines capable of performing more than just a routine task. As computer processing power increased and the databases on which algorithms were trained expanded, the term came to refer to machines that had become “intelligent” because they were capable of machine learning[9].

Machine learning is the field of study of artificial intelligence, which defines the design, analysis, development, and implementation of methods that allow a computer program to evolve through a systematic process centered on natural language processing, which is a branch of machine learning and its purpose is to enable analysis and understanding[10].

Therefore, AI-based machines have gone beyond mere imitation to surpass human cognitive abilities such as discovery, linguistic interaction, reasoning, analysis, problem solving, and even creativity.

Therefore, artificial intelligence does not refer to one or more specific applications, but rather to a set of technologies whose use allows the system to perform tasks that normally require human intelligence, and perhaps even surpass this intelligence [11].

Jurisprudential attempts to establish a concept for artificial intelligence were consistent with the aforementioned proposal, as they saw that artificial intelligence is: “all theories and techniques applied with the aim of creating machines capable of simulating human intelligence.”[12]", or it is: "the ability to act as if a human being is acting by trying to deceive the questioner (or observer) and making it appear as if a human being is the one answering the questions asked by the questioner[13]"

Artificial intelligence is the ability of programs, applications, systems, or even machines to think and perform learning processes through collecting and acquiring information in a way that enables them to act in the same way that the human mind acts, suggesting that a human being performed all of these processes.

The International Organization for Standardization expressed (ISO) about its concept of artificial intelligence as: “the ability of a technical system to acquire, process and apply knowledge and skills[14]"

Therefore, for a technical system to be described as having artificial intelligence that mimics human behavior, it must have many characteristics, especially the ability to collect and analyze data and information and create links between them to make decisions, as well as the ability to think, perceive and solve problems presented in the absence of complete information, and finally the ability to learn from previous experiences and employ them in new situations.

It is understood from the above that not every technical system, program or machine is capable of thinking. In order for it to have this characteristic, it must have the ability to analyze and learn from the environment in which it exists, so that it can analyze the data and determine the size of the problem and then make the appropriate decision to solve it[15]For example, an artificial intelligence program is currently being used to do what a doctor usually does, providing it with multiple data related to different diseases, their symptoms, and how to treat them. The program then diagnoses diseases, analyzes the results of medical tests, and reads the patient's X-rays to finally suggest the necessary treatment[16].

Returning to our question about the legal system under which artificial intelligence programs, applications or systems fall, here we can answer by saying that if we consider that these programs fall under computer programs, then they are considered an intellectual work (electronic work) covered by the protection of the law, and the creator of the artificial intelligence program is considered among the authors who enjoy copyright, which is the same direction taken by the International Organization for Standardization.(ISO)When I considered that it wouldn't take long to see the synthetic products(IA)Submitted as a Candidate for Copyright Protection[17].

Conversely, if the AI program is subject to industrial application, meaning it has found a serious method for exploitation, then it is subject to protection under patent law if two basic conditions are met: innovation and novelty.

According to the Algerian legislator, innovation is any inventive activity that does not obviously result from the state of technology[18]In other words, innovation is a mental production that brings something new, and it is considered as such as long as it was not previously known from a technical perspective, since any innovation cannot clearly arise from a previous technical state, but rather it must represent an important step that goes beyond what is clear to a person skilled in the field that is the subject of the mental production.

Therefore, innovation is a mental production characterized by a degree of originality that goes beyond what is known to the public, meaning that it is the creation of an unfamiliar idea compared to the prevailing situation at a certain time.

In addition, the condition of novelty or what is also called the description of modernity must be met. According to the Algerian legislator, an invention is characterised by novelty if it is not included in the state of technology, which includes anything that has been made available to the public through written or oral description or the use of any other means throughout the world, prior to the filing of the application for protection or the date of claiming priority[19].

It is clear to us that the condition of novelty or priority is when the invention for which protection is sought is new and unprecedented, meaning that it has not been previously presented or published to the public by any person at any time or place. In the field of artificial intelligence programs, this means that no person has presented a new electronic program or submitted a request to register it in his name to any party[20] Without attacking existing intelligence systems or programs.

It is worth noting here that jurists say that, in the extent to which artificial intelligence entities are considered patents, they believe that the legislator assumed in his concept of a patent that inventions are tangible material matters and not moral matters, meaning that inventions must be a technical application with a description, drawing, and special material form, while artificial intelligence entities are merely symbols or software within devices.

Accordingly, jurists consider that the legal field for protecting artificial intelligence entities is copyright rules[21] Not a patent, but we see that it is possible to grant AI entities protection through patent rules if they are associated with machines that are equipped with AI programs, which makes them eligible for patent protection because these machines are something tangible and these AI machines are called intelligent robots.

The use of the artificial intelligence program is the purpose of its creation and invention. There is no benefit to be gained from an artificial intelligence program that was created without being used. The importance of the program lies in making it available to the public.

Here we noticed that artificial intelligence has gone beyond being a program that processes data to then provide suggestions. Rather, the public today uses it to produce creative works in various fields, such as: producing a literary work in the form of an article, a short story, or a long novel, especially with the spread of word processing applications that work with technology .ChatGPT, and even generate musical works (Udio, Hydra II ,MagicMic...) or new visual arts (DALL-E, OpenAI...) by feeding it historical data using (or responding to) written commands that are no more than short phrases[22].

The ability of AI to produce creative works may redefine who is an "author" and make us question whether AI products should be considered a work of art that should be protected under intellectual property law?

To answer, we can say that artificial intelligence programs can now create and innovate, but they cannot acquire the status of an author or for the creations they produce to become a work protected by intellectual property rights, as long as Article 5 of Order 03-05 relating to copyright and related rights considers the author a natural person with legal personality. The work, as is clear and explicit in the texts of the law, is the result of the effort exerted by the natural person, although it is possible for the author to be a legal person when he takes the initiative to produce a work in which several natural authors participate in its creation.

In addition, how can these programs fulfill the formal conditions that must be met in order for the work to be worthy of protection? For example, how can these programs produce the work and display it in a tangible physical form? Also, how can the originality of the work be verified in terms of ensuring the special character that artificial intelligence adds to its work that allows it to be distinguished from other works? All of these questions lead us to say that under current laws, it is not possible to provide protection to works that are reached through artificial intelligence programs and systems.

However, the great development of artificial intelligence has led jurists to propose the hypothesis of recognizing a legal personality for artificial intelligence entities, whether programs, systems, or even machines that are called robots, similar to legal persons that constitute a model of legal promotion or demotion for a non-human entity, which inspires the creation of a special status for artificial intelligence entities and their acceptance as legal persons in the future[23].

The idea of granting artificial intelligence entities legal personality seems logical as long as legal personality is established for non-humans, especially since the virtual legal personality has emerged as a response to practical and realistic necessities that assumed the recognition of a life independent of the legal person from the lives of the people who compose it[24].

However, the European Parliament's Legal Affairs Committee has proposed including artificial intelligence in a new legal category called electronic personality, given that artificial intelligence entities, especially smart robots, have the independence and ability to interact with others and possess acquired expertise as a result of the ability to learn on their own, which necessitates recognition[25] It has a legal status distinct from known legal statuses.

However, we note that the European Parliament has backed away from the idea of creating a new legal category or granting legal personality to AI entities, adopting the European Commission’s view on the need to define a harmonized system for AI, and accordingly, it has acknowledged the possibility of considering AI as a product, and has urged EU countries to develop their legislation to include AI products, thus backing away from the idea of recognizing AI entities as legal entities with a legal status close to or similar to humans[26].

Second Section: The Risks of Digital Technology on Intellectual Property Rights

There is no doubt that the information revolution has contributed greatly to expanding the scope of intellectual property with the emergence of digital works that are not only related to computer programs and computers, but also include all creative works produced using digital technology in various fields such as education, culture, health, etc. Despite this, this information revolution has brought risks to it as it challenges the traditional frameworks for protecting intellectual property, especially with the emergence of movements that rely on what is called open source .The open Source, or Creative Commons , or wiki To obtain or benefit from these creations[27].

These risks have increased with the widespread prevalence of phenomena such as illegal downloading of software, documents, music or films via various technologies, which negatively affects the publishing and audiovisual industries. All these risks surrounding intellectual property have prompted us to ask: Has the principle of copyright itself become threatened by the spread of digital technology?

We can say that if we look at the issue from the perspective of illegal download numbers of works, then we tend to believe that there is a threat to copyright, but if we look from another perspective, we tend to believe that it is a matter of unauthorized use of the production and not the denial of its authorship. This result leads us to believe that this phenomenon indicates the existence of a problem of economic exploitation of works rather than indicating its appropriation, distortion or even erasure of its origin[28].

Accordingly, it was necessary to find modern methods to protect the intellectual property rights of the author that are compatible with the nature of the attack. International agreements and treaties, as well as comparative legislation, came with technological measures as one of the logical solutions to the existing problem. For example, the European Directive on Copyright in the Information Society issued in 2001 came with multiple, diverse and advanced measures to ensure

comprehensive protection of copyright and related rights published on the Internet. The most prominent of these measures is electronic encryption[29].

By electronic encryption we mean: “a set of techniques that aim to protect information, by using secret protocols that make the data encrypted and incomprehensible to others, by means of programs designated for this purpose.” Electronic encryption is carried out in several ways, including: encryption using a symmetric key, encryption using an asymmetric key, or double encryption, which is a system that combines symmetric encryption and asymmetric encryption[30].

In addition, there are other measures such as; electronic signature, digital works recognition system IDDN. Password system, copy granting technology, Electronic Copyright Management System ECMS And other emerging technologies.

It seems to us that the copyright holder’s resort to one of these technologies, such as encryption, for example, came with the aim of creating a special individual link with each user, whereby all exploitation of digital works becomes under the complete and absolute control of the rights holder, such that his control has become beyond the actions related to publishing the digital work to the public, to the extent of controlling access to the work to specific individuals from the public, who are, in short, only those who possess the key to decrypt the code[31].

However, we believe that the tremendous technological developments, especially with regard to artificial intelligence technology, may make copyright protection ineffective and ineffective if artificial intelligence systems can access electronic works and feed on them in advance to enhance their learning, in addition to the possibility of others using artificial intelligence programs for the purpose of decoding these works and viewing their content or even copying them and storing them digitally on their computers.

We can mention that, since February 2023, the judiciary in the United States of America is still considering the legal procedures initiated by the company Getty Images Against the company AI Stability AI Image Generator Creator Diffusion Stable, where the image bank is accused Getty start up Stability With over twelve million images copied, the image bank estimates that widespread infringement of its image content was a crucial factor in the generator's success AI Stability[32].

The intensification of the debate over AI systems has resulted in many lawsuits being filed against the creators of generative AI programs such as (ChatGPT) on the grounds of intellectual property infringement, as these claims raise legitimate concerns about the unauthorized use of copyrighted material in order to create new creative content[33].

We can mention what the producing company faces (ChatGPT) from legal pressures regarding intellectual property rights, where it faces (OpenAI) and other prominent generative AI platforms are currently facing lawsuits alleging copyright infringement for using protected data to train AI on a set of illegally acquired data, for example in the case of (IncorporationvTremblay) and(OpenAIThe plaintiffs assert thatOpenAI) used their copyrighted books without obtaining the appropriate license for training (ChatGPT)[34].

The plaintiffs also asserted that (OpenAI) engaged in unauthorized acts and profited from copyrighted works, specifically the book entitled (BedTheWater), for the purpose of training (ChatGPT), and the plaintiffs in this lawsuit relied on the fact that (ChatGPT) able to produce summaries of their novels when provided with the appropriate prompt, which led the plaintiffs to conclude that the AI systems were trained on copyrighted material[35].

Decisions on all of these cases are still pending, and the manner in which they will be resolved is still uncertain at present. However, these cases represent the first significant legal confrontations in which the use of artificial intelligence is related to the violation of intellectual property rights. Naturally, the victory of the plaintiffs in these cases will affect artificial intelligence technology in terms of setting controls and conditions for the operation of these systems, whether with regard to its inputs or outputs[36].

In this regard, jurists believe that there is no longer a need to be an expert in programming and networks in order to carry out a cyber attack, as artificial intelligence provides this feature to anyone who wants it, given the availability of artificial intelligence on these technologies as well as the possibility of accessing them, and accordingly, anyone can become a “hacker”, and we can mention here specifically ChatGPT and Codex Which have contributed to the generation or production of new tools that are easier and faster to access than ever before.

Thanks to artificial intelligence systems, it has become possible to send a phishing email Phishing "It contains malicious and malicious code in less than ten minutes with only three requests, because without the use of artificial intelligence, it would take several hours to create a phishing attack, and perhaps several days if the person is not skilled, because artificial

intelligence is able to develop a cyber attack by taking responsibility for performing many programming steps that take a long time[37].

Therefore, artificial intelligence allows cybercriminals to attack faster, more effectively and at a lower cost than before. Cyber attackers no longer need the resources they once had as long as artificial intelligence provides them. This represents new opportunities for criminals who see their rewards increasing and the risks of being discovered (such as anonymity) decreasing. It is worth noting here that since 2020, cyber attacks have increased by 600%.%Almost all of this significant increase is due in particular to the emergence of artificial intelligence and related technologies, however, these technologies are difficult to quantify due to their almost undetectable nature, and this reality is the "black number of crime"[38].

On the other hand, some jurists believe that artificial intelligence provides an opportunity that all fields should seize sooner or later, including the field of intellectual property, as companies can conduct a comprehensive analysis of the validity of patents using artificial intelligence, by examining each patent claim and verifying it against comprehensive patent databases, accurately assessing the validity of patents, and proactively alerting their owners to potential patent violations, which helps in taking legal action in a timely manner.

AI can also be used to protect intellectual property in a variety of ways. AI-powered systems can search the internet to identify counterfeit products, fake brands, and unauthorized use of copyrighted material such as music, images, and videos, and notify creators and artists of these to give them the opportunity to bring violators to justice[39].

Moreover, AI helps to repel digital attacks on intellectual property, as cyber security interests begin to exploit the potential of AI systems to control information, allowing them freedom of maneuver in the digital space, which is something that cyber human resources alone cannot achieve due to their quantitative and structural inadequacy. Naturally, exploiting intelligence systems to detect potential hostile elements so that they can be cautious of them at an early stage[40].

This is because AI can process large amounts of data continuously, 24/7, which means it can detect new security risks, especially since algorithms learn as they work to avoid repetitive actions, and thus have the potential to improve aspects of cyber security.

Thus, AI relieves humans from time-consuming data processing tasks, as well as eliminating the assumption of human error, which is considered one of the main causes of cyber security risks (90%(Cyber security Incidents), hence, the benefits of AI are not only useful for incident management operations, but also for threat management, for example; to detect abnormal activities, identify unusual activities, and finally prevent the exploitation of security vulnerabilities[41].

Although AI is making amazing technological advances that can help humans in a wide range of tasks, its use to support cyber security could lead to tangible improvements in the quality of public service provided to users[42] Intellectual property rights holders continue to express growing concern about the disruption that generative AI could cause, due to the complexity and importance of the interaction between AI and copyright.

According to the European Commission, these concerns are unfounded, as the Commission stated that the exception provided for in European Directive No. (790/2019) on copyright and related rights in the Digital Single Market[43] It ensures a balance between two elements: protecting rights holders, especially artists, and facilitating text and data mining, especially by AI developers. According to the European Commission, the new rules resulting from the directive will allow rights holders to refuse to allow their content to be used in text and data mining.

However, this clear position raises a number of questions, given the difficulty of applying these rules arising from the Directive in practice. Jurists believe that the balance guaranteed by the "option of exception" feature, which allows authors to oppose searches in their works, seems far from being achieved, given the impossibility of ensuring the extent to which the "option of exception" is respected, especially when AI systems include their own databases and are themselves lacking in transparency.

Accordingly, these jurists argue that, in light of the lack of transparency, the European Directive is unable to achieve a balance between protecting rights holders and the interests of AI developers, which they see as a valid reason to reconsider this Directive[44] In addition, artificial intelligence is a global phenomenon that crosses borders and requires concerted international efforts to control it, which was embodied in the global company's international initiative on artificial intelligence .GPAI For the responsible use of AI in the spirit of respect for human rights, diversity, innovation and economic growth[45], and also the UNESCO Agreement on the Ethics of Artificial Intelligence[46].

Finally, we must point out that Algeria is not yet one of the countries developing artificial intelligence. However, it must join international efforts that are trying to race against time to set specific standards on the basis of which these systems are developed, to prevent the exploitation or at least feeding these systems with works protected by intellectual property rights. In addition, we believe that the Algerian legislator must develop legislation specific to artificial intelligence that includes the establishment of an authority competent to conduct the necessary examinations on artificial intelligence systems that pose a national threat to health, security or fundamental rights (especially intellectual property rights), in keeping with legislative movements in European countries such as France, in which the State Council calls for transforming the National Commission for Informatics and Freedoms into a national authority responsible for regulating artificial intelligence systems[47].

Conclusion

We conclude from the above that intellectual property in light of digital technology has witnessed an expansion in its scope with the emergence of electronic works as creative intellectual works belonging to information and communication technologies. We mention among these works; computer programs, computer programs, databases, and websites. However, the most prominent of these programs were artificial intelligence systems, applications, and entities.

As we have seen, there is no comprehensive definition of artificial intelligence technologies, which are presented as one of the most advanced technologies of the twenty-first century. However, jurists have worked hard to come up with a concept for it using technical terms such as machine learning, big data, or algorithms. They saw that artificial intelligence essentially embodies a group of intelligent systems capable of self-learning by collecting information and acquiring big data, which they process through complex algorithms that enable them to act in the same way as humans, including producing creative works such as literary works, music, visual arts, and others. This inspired the Legal Affairs Committee of the European Parliament to propose including artificial intelligence within a new legal category called the electronic personality.

However, the European Parliament backed down from the idea, adopting the opinion of the European Commission, which considers artificial intelligence as a product. These high-tech products intersect with the issue of protecting intellectual property rights as long as artificial intelligence systems have the ability to access electronic works and feed on them to enhance their self-learning without the permission of their owner, and even allow others to access these works and view their content and copy creative works and store them digitally on any computer device, without being prevented by known electronic protection measures such as encryption, electronic signature, digital works identification system, password system, copy-granting technology and other new measures.

On the one hand, and on the other hand, we have concluded that artificial intelligence provides an opportunity that must be seized in the field of protecting intellectual property rights by exploiting artificial intelligence systems for patent claims, verifying their novelty, and warning about any potential infringement of previous patents or counterfeit or fake products, in addition to exploiting these systems to repel digital attacks on intellectual property, by exploiting the capabilities provided by artificial intelligence programs to detect potential hostile elements due to the ability of artificial intelligence to process large amounts of data continuously around the clock, which allows for the detection of abnormal activities, identifying unusual activities, and preventing the exploitation of security vulnerabilities.

However, concerns remain about intellectual property protection in light of the ambiguity surrounding artificial intelligence systems, especially generative ones, due to the complexities of this technology and the ways in which it interacts between artificial intelligence and copyright, which makes us believe that the issue of intellectual property protection in light of this complex technology is limited. In addition, we believe that increasing intellectual property protection requires concerted international efforts to understand how this technology works and to establish agreements that regulate its development and the public's interaction with it (how to share data, protect owners' rights, work algorithms, user access, etc.).

Finally, we must point out that Algeria is one of the countries that uses artificial intelligence systems. However, it must join international efforts that are trying to race against time to establish specific controls on the basis of which these systems are developed and used, and to create a special legislation to regulate artificial intelligence systems to prevent these systems from exploiting works protected by their local intellectual property laws, on the one hand, and on the other hand, to protect them from the risks of exploiting these systems to launch coordinated attacks on their interests, websites, or databases related to their intellectual works.

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