




# Possible Legal Protections for Paintings Used in Architecture

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Intellectual property law in the fields of architecture and painting has become a reliable foundation for the development of knowledge and technology, as well as the secure commercialization of scientific and technical achievements in the realm of cultural works. The present study aims to examine the possible legal protections for paintings used in architecture. The research method is descriptive-analytical, utilizing library resources. The findings indicate that legal protections for paintings incorporated into architecture, as part of artistic and creative works, benefit from multiple legal capacities in both Iranian and international law. These protections include copyright, patent rights, neighboring rights, and emerging technologies such as artificial intelligence. Copyright protects paintings used in architecture as an element of artistic creativity by granting the creator exclusive rights through registration and legal guarantees. In cases where a specific innovation or technology plays a role in the creation or execution of paintings, patent protection may also be applicable. Neighboring rights can be used to safeguard the rights of performers or individuals involved in the reproduction or execution of these paintings. Moreover, artificial intelligence, with capabilities such as identification, registration, monitoring, and even the creation of new works, facilitates better management of intellectual property rights. In advanced legal systems, artificial intelligence can be employed for digital registration of works, detection of copyright infringements, and enforcement of intellectual property rights in international projects. In summary, integrating these legal capacities within Iranian and global legal systems can ensure comprehensive protection of architectural paintings and provide support for artists, architects, and stakeholders of such works. However, the adaptation and revision of existing laws are necessary to address emerging challenges.

**Keywords:** *Literary and Artistic Property, Architectural Paintings, Copyright, Patent Rights, Function of Artificial Intelligence.*

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## 1. Introduction

Intellectual property rights refer to the legal and non-material advantages associated with the identity of the creator of an intellectual work. Many international regulations and domestic laws recognize intellectual property rights for creators of architectural and artistic works. Some of these legal frameworks provide permanent protection, while others impose time

limitations on such protections. Regarding neighboring rights, some international conventions and treaties do not explicitly address intellectual property, while in countries that do recognize intellectual property in relation to neighboring rights, legal provisions vary. Iranian law does not explicitly address the value of artistic works or their irrelevance to originality. The dependency of an architectural work and the paintings incorporated within it on its spatial location is one of the



significant features of architectural works. This raises the question of whether a building can be copied, considering that every structure is designed specifically for its spatial context, which may not be easily replicated for a second building. When assessing whether an architectural work has been copied in the construction of another, the focus is not on standard details, design requirements, technical necessities, or the spatial location of the building. Instead, attention is given to the overall form of the building, the arrangement of spaces, and the composition of design elements—factors commonly referred to as the "architectural atmosphere." These elements vary from case to case, and their precise definition and assessment depend on the specifics of each legal dispute.

The term "copy" does not necessarily mean reproduction or imitation in a literal sense. It is a broad concept that does not require an exact replication of all details from the original version. The second building does not need to be identical to the first in every detail. A copy that constitutes an infringement of the creator's rights is one that is considered substantial and excessive beyond what is deemed normal. Since architectural works are inherently tied to their location, the assessment of copying is based on the overall atmosphere of the work rather than its technical details. A legally actionable copy is not one that replicates every detail but rather a work that has been reproduced without authorization, thereby constituting a violation subject to legal pursuit. A distinction exists between copying and deriving inspiration.

This issue is particularly relevant in paintings and architecture. The presence of visual similarity between two works is often the primary factor in determining whether they share an aesthetic atmosphere, which is one method of assessing whether a work has been copied. However, mere visual similarity does not automatically indicate copying. Sometimes, works emerge as part of a shared architectural style, where both structures are designed or built within the same stylistic tradition. Copying, in the sense that leads to a violation of the creator's rights, is not easily established. Excessive inspiration from a style, when taken beyond ordinary limits, can ultimately amount to artistic plagiarism. Factors such as the intended purpose of the building or its functional use may also be considered in this analysis. If one structure is designed for residential

purposes while another is intended purely for aesthetic and decorative objectives, proving an infringement based solely on visual resemblance may be challenging. The issue of stylistic replication adds further complexity in both painting and architecture, particularly concerning paintings used in buildings. This complexity arises from the possibility of copying an architect's or a painter's personal style. The legal treatment of architectural paintings varies depending on whether they are created as site-specific artworks within a building, painted onto facades, or if they involve the use of works by other painters. Additionally, cases arise where the architect themselves is also the painter, or where the architectural design is executed in the style of paintings. The intersection of painting and architectural styles results in numerous architectural works with diverse aesthetic and functional characteristics.

Every architect and painter may develop a distinctive personal style. The complexity of intellectual property protection stems from the lack of legal awareness regarding artistic rights, which can lead to cases where an architect's work is copied without being recognized as an infringement. This, in turn, may be viewed as evidence of the original architect's success and influence at a particular point in time. If the first unauthorized copy is not addressed legally, further replications may occur, leading to the dilution of an architect's unique creative style, transforming it into an aesthetic trend without proper attribution. Neither personal nor general styles are protected under copyright law, as they are considered overly broad concepts that align more with ideas rather than specific expressions. Copyright protection applies to specific externalized and tangible forms rather than abstract stylistic trends. The ability of copyright law to prevent transient, unoriginal architectural and artistic imitations underscores its role in fostering the creation of genuinely innovative buildings and paintings.

Certain aspects unique to architectural art should not be disregarded when considering legal protection. Technical aspects that intertwine with the artistic features of a work must be carefully distinguished. The dependency of an architectural work on its location does not necessarily render it entirely unique, nor does it prevent potential copying and infringement of the creator's rights (Esqahlani, 2011, p. 29). The original architectural design and blueprint can qualify for

independent protection. The content and presentation of a work define its architectural and artistic essence, while personal execution determines its originality. The concept of originality, as a mental construct, aligns with the characteristics of visual and artistic works such as architecture. The identity of the creator and their personal execution are manifested in these works (Zarkalam, 2019, p. 51).

In the global context, architectural and artistic works receive significant attention, including in terms of buying and selling such works. Awareness of protection mechanisms in different legal systems and the promotion of these works within a protective legal framework play a crucial role in disseminating Iranian culture and fostering economic growth. The legal protection of paintings used in architecture is being examined systematically for the first time. From a social perspective, this protection can also contribute to entrepreneurship within this field. Increased awareness of the rights of creators enhances confidence in the success of artistic and architectural endeavors while providing a greater sense of job security.

Given these considerations, the objective of this study is to examine the possible legal protections for paintings incorporated into architectural works. The research aims to investigate intellectual property rights concerning architectural works, particularly focusing on the paintings used within them. The introduction highlights the significance of intellectual property rights in preserving creativity and innovation in architecture, emphasizing the role of painting as a crucial element in architectural aesthetics and design. Additionally, it underscores the necessity of legal protection for such artistic works.

The first section of the study defines the concept and scope of intellectual property rights in architecture. It explores the legal status of architectural paintings within national and international laws, demonstrating how these works are recognized under intellectual property rights frameworks. The second section analyzes the protection of architectural paintings through copyright law. It explains the application of copyright to architectural paintings, examines relevant legal precedents, and discusses the challenges and limitations in enforcing these rights.

The third section explores the protection of architectural paintings under neighboring rights and patent law. This

section defines neighboring rights and their application to architecture, analyzing the conditions under which architectural paintings may be protected under such rights or through patent registration. A comparative analysis of different legal systems is also presented.

The fourth section discusses the impact of artificial intelligence on the protection of architectural paintings. It examines the role of artificial intelligence in identifying, safeguarding, and monitoring intellectual property rights for architectural paintings, as well as the legal and ethical challenges associated with its use.

Finally, the conclusion summarizes the research findings, emphasizing the need for harmonization between intellectual property law, art, and technology. It also offers recommendations for improving protective legal frameworks and addressing existing gaps in legislation.

## 2. Conceptual Explanation of Intellectual Property Rights in Architectural Works

Architectural works hold a distinct position within literary and artistic property and have been incorporated into copyright laws in most countries worldwide. The rights of creators of building plans, designs, and structures have been formally recognized. Architects apply their knowledge, skills, and creativity to develop innovative and original designs. Due to this unique creative ability and specialized expertise, legal protections are necessary to prevent third parties from infringing upon their intellectual property rights. The Berne Convention for the Protection of Literary and Artistic Works grants protection to architectural works, and since this treaty is binding among its member states, any architectural work created in one member country automatically enjoys copyright protection in all other member states, ensuring compliance with intellectual property rights.

The legal rights associated with architectural works generally include the external appearance and structure of the design, regardless of construction methods, purpose, materials used, or the quality of execution. The primary requirement for protection is that the architectural design is original and innovative. Architectural works are not limited to buildings alone but also extend to all types of structures, including bridges, ships, and other functional constructions. For a work to be protected, it does not necessarily have to be

physically constructed; rather, a blueprint, model, or design is sufficient for legal recognition.

The legal protection of architectural works in Iran has a long-standing history and was first established in 1969 under the Law on the Protection of Authors, Composers, and Artists' Rights. Article 2, Clause 7 of this law explicitly states that architectural works, including building designs and blueprints, are covered under its provisions. However, since this is a domestic law, and in accordance with the territoriality principle of legal regulations, it is only applicable within the borders of the country.

Under this law, creators are granted both economic and moral rights. Economic rights include exclusive rights to publish, distribute, exhibit, and commercially exploit their works. An architect who designs a blueprint has the exclusive right to execute these rights themselves or license the use or construction of the design to another party—typically in exchange for financial compensation. Thus, economic rights can be transferred to a third party. Once an architectural work has been created, no one may use or exploit it without the permission of the creator. Consequently, unauthorized reproduction or copying of an architectural design carries legal and criminal consequences for the infringer. In such cases, the designer has the right to pursue legal action against the individual or entity that violated their rights through either civil or criminal proceedings.

Economic rights are granted to the creator only if the requirements of Article 22 of the law are met. This article stipulates that economic rights are only protected if the work is published, distributed, or publicly performed for the first time in Iran and has not previously been published, distributed, or performed in any other country.

On the other hand, moral rights are not restricted by time or location and include the right to attribution, meaning that the creator has the right to have their name associated with their work. No one can prevent the author from being credited for their creation. Unlike economic rights, moral rights cannot be transferred to another person and are not subject to expiration. According to Article 4 of the Moral Rights Law, moral rights are considered permanent due to their direct connection with the creator's identity.

Architectural works may also be the result of collaborative efforts by multiple individuals. If the

contributions of each participant are inseparable, the work is classified as a joint creation, and the resulting rights are shared equally among all contributors {Shafaei, 2015 #172301}.

### 3. Protection of Paintings Used in Architecture through Copyright Law

Architects and engineers rely on copyright law to protect their original works. Various perspectives exist regarding the extent of protection for architectural designs. Some argue that a design must be executed to qualify for protection, while others believe that execution is not necessary, and that blueprints, models, or design sketches alone are sufficient for legal protection. The analysis of literary and artistic property laws related to architecture in most countries suggests that execution is not a mandatory requirement for copyright protection.

Architectural works typically consist of plans, drawings, sketches, and models, which serve as the foundation for completed structures, including buildings, bridges, and similar constructions. The term "architectural works" appears in the non-exhaustive list of literary and artistic works in Article 2(1) of the Berne Convention {Shafaei, 2015 #172301}.

The dynamism of Iranian architecture has been impacted by the absence of modern legal protections for this art form in the contemporary period. This absence does not indicate a complete legal vacuum, as copyright protection for architectural works was established by law in 1969. However, the issue lies in the lack of recognition of the nature of copyright protection for architectural works and its practical implementation, resulting in limited enforcement and underdevelopment of these protections in Iran.

Article 1(7) of the Law on the Protection of Authors, Composers, and Artists' Rights grants protection to architectural works, including building plans and designs. The phrase "such as" in this provision indicates an illustrative, rather than exhaustive, list of protected works, allowing for the inclusion of additional works based on the broad scope of architecture and the general principles of literary and artistic protection. The Implementing Regulations of Article 21 of the same law also contain provisions regarding the registration of architectural works.

Some legal scholars define an architectural work as a building design that is materialized in the form of a structure, model, or blueprint. In certain national legal systems, if a building is visible from public spaces, photographing or filming the structure and distributing or displaying such images does not require the architect's authorization. This principle is reflected in the Amendments to the Implementing Regulations of Article 21 of the Law on the Protection of Authors, Composers, and Artists, adopted in 2000.

The most important condition for copyright protection is that a work must go beyond a mere idea and be expressed in a tangible form. In practice, the more details are added to a work, moving it away from a general, abstract, or conceptual idea, the easier it becomes to distinguish it from similar works, thereby strengthening its eligibility for copyright protection. The degree of expression may vary and does not need to be complete for protection to apply. Even before the completion of an architectural work, it may qualify for copyright protection, provided that it is sufficiently distinguishable from a mere idea.

An architectural creator can express their artistic vision in two independent ways:

1. Through technical drawings and blueprints.
2. Through the actual constructed building.

This means that each mode of expression is independently eligible for protection. A blueprint or design does not need to be physically realized as a building for copyright to apply. Likewise, a building does not need to be constructed based on a specific blueprint to qualify for copyright protection {Emami, 2011 #172313}.

Articles 2(12) and 2(8) of the legislative draft on intellectual property protection address the protection of architectural and artistic works, including paintings. However, designs that are neither new nor original, those that result solely from functional necessity, designs containing official symbols or emblems, and designs contrary to public order and morality are not eligible for protection. The limited protection of paintings in this context suggests that while paintings, sculptures, and various artistic and technical works contribute to an architectural project, their protection as independent works or integral architectural elements depends on specific legal provisions.

A fundamental principle of intellectual property protection is "automatic protection without formalities", meaning that protection applies upon the creation of a work. Legal systems differ in their approach to this principle.

- In the civil law (Roman-Germanic) system, protection is granted automatically upon creation, with no formal registration required.
- In common law systems, formalities such as registration are required for legal protection.

Iranian law is not consistent regarding the necessity of formal registration for protection. Article 21 of the 1969 Law on the Protection of Authors, Composers, and Artists states that creators may register their works, names, titles, and distinctive marks with relevant institutions under the Ministry of Culture and Islamic Guidance. However, registration is not mandatory and does not affect the validity of copyright protection. Furthermore, registration does not create additional rights or grounds for legal claims by third parties.

In the Law on the Protection of Software Creators (2000), Articles 8 and 9 require software registration. The registration process involves obtaining technical approval from the Supreme Council of Informatics and submitting the registration application to either the Ministry of Culture and Islamic Guidance or the Companies Registration Office. According to Article 9, legal action for copyright infringement is only admissible if technical approval has been obtained before filing a lawsuit. In cases of patent protection, a formal registration application must also be submitted.

Some legal scholars argue that "creativity" is the primary criterion for originality in intellectual creations. They maintain that when a creator exercises innovation, they incorporate their personal talent and identity into the work, and this innovation forms the legal basis for copyright protection {Sanhouri, 1968 #172302}.

It appears that a work does not necessarily need to be new for it to be considered original and protected. As long as the method of presentation is innovative, the work is eligible for protection. An architectural creator can express their work either through designs or through the actual building, and both originality and creativity must be evident in both forms.

Paintings incorporated into architectural works may qualify for copyright protection under certain conditions. One example is murals, frescoes, or



decorative wall paintings that are integrated into a building's structure, such as the use of colors in façades or the incorporation of plants into wall designs.

Article 1(1) of the Draft Comprehensive Law on Literary and Artistic Property Protection states that for a work to be protected, it must be both literary/artistic and original. Article 1(2) defines originality as any creation derived from the author's creativity, regardless of whether its subject or content is new {Colombe, 2023 #172315}. Some scholars equate creativity with originality (Safaei, 2006, p. 73). However, originality and creativity are not necessarily synonymous, as the Law on the Protection of Authors, Composers, and Artists extends protection to all works resulting from knowledge, art, or creativity. In other words, novelty and innovation contribute to protection, but they are not absolute requirements {Sanhoury, 1968 #172302}.

Article 17 of the 1969 Law on the Protection of Authors, Composers, and Artists establishes that the name, title, and distinctive mark of a work are protected, and no one may use them for another similar work in a way that causes confusion. Similar provisions exist in the 2000 Law on the Protection of Software Creators, but originality is not explicitly discussed. Designs lacking originality, derived solely from functional necessity, containing official emblems, or contrary to public order and morality are not eligible for protection.

Ultimately, copyright protection for paintings used in architecture serves to legally safeguard the artistic and intellectual rights of such works. It grants the creator exclusive rights over reproduction, adaptation, and commercial exploitation. These protections apply to murals, ceiling paintings, decorative elements, and graphic designs integrated into architectural structures. International conventions such as the Berne Convention further ensure cross-border recognition of these rights, preventing copyright violations. In conclusion, copyright law helps preserve the integrity of artistic works in architecture while protecting the rights of creators and enhancing the artistic value of architectural projects.

#### 4. Protection of Paintings Used in Architecture as Neighboring Rights (Performers' Rights) and Patent Rights

A creator is entitled to protection when their work is produced through knowledge, art, or innovation and is considered original. Paintings, images, decorative inscriptions, and visual artworks, regardless of their method or form—whether simple or complex—are protected under Article 2(5) of the Law on the Protection of Authors, Composers, and Artists' Rights, which emphasizes originality as a fundamental condition for protection.

Originality means that the work is not a reproduction of another artist's work. In painting, copying means making an imperceptible modification to an original work while claiming authorship, despite relying entirely on the design and idea of the original painter. The creator's role in the work's creation must be identifiable. Originality is defined as any work derived from the creator's creativity without imitation of another, even if the subject or content is not new.

According to Article 25(1) of the Draft Legislative Bill, a creator is a natural person who has produced a work, and in the case of computer programs, a creator is an individual or group who, based on their knowledge and innovation, has completed all stages of development, including analysis, design, construction, and implementation. Article 2(8) of the Draft Bill explicitly recognizes paintings as visual artistic works eligible for protection, provided they exhibit a creative, unique, and distinctive style. The creator must have invested intellectual and conceptual effort, skill, and labor in the work's production {Ghafouri, 2010 #172312}.

According to Article 21 of the Law on the Protection of Authors, Composers, and Artists' Rights, creators may register their works, names, and titles in designated centers outlined by law. However, in Iranian law, registration is not a prerequisite for protection; works are considered protected upon creation. Based on Iranian copyright laws, the focus is on the form of protection, ensuring that a work is legally safeguarded once it materializes and reflects the creator's intellectual identity.

Originality has a personal, rather than general, definition. This means that the primary criterion for protection is that the work reflects the creator's personality. Article 120 of the Draft Bill, concerning the scope of enforcement, aligns closely with international standards. This article stipulates that the law applies to works created by Iranian nationals or residents, as well

as to works first published in another country but subsequently published in Iran within 30 days of the original release, regardless of the creator's nationality or residence.

According to Article 7 of Germany's Intellectual Property Law, the creator is the person who has produced the work. Article 8(1) addresses joint creators, stating that when multiple individuals contribute to a work without the ability to separate their contributions, they are recognized as co-creators. Article 9 discusses composite works, allowing each contributor to request permission from others for publication, exploitation, or modification, provided that such consent is reasonably justified. Article 10 establishes the presumption that a person whose name appears on published copies or the original artwork is presumed to be the creator unless proven otherwise {Agogu , 2014 #172323}.

These provisions also apply when a creator's name is presented under a pseudonym or artistic signature. Such presumptions are rebuttable, meaning that the actual creator can always provide counter-evidence to claim authorship, even if the work was published under another name or anonymously. In German law, authorship is generally attributed to natural persons, and Article 13 grants the creator the right to decide whether their name appears on the work {Zarkalam, 2019 #172297}.

According to Article 111-1 of France's Intellectual Property Law, a creator gains intangible, enforceable rights upon creating a work. These rights include intellectual, moral, and economic attributes. The existence of an employment, service, or lease contract does not affect the creator's recognized rights. The creator must demonstrate both creative ingenuity and practical realism, and in cases where the originality of a work is challenged, the creator bears the burden of proving its innovative character. A defining feature of a work is the personal effort behind it, which is more than just an automatic or mechanical process. Furthermore, if a title reflects the fundamental nature of a work, it receives protection alongside the work itself {Cardoso, 2009 #172318; Cardoso, 2011 #172317}.

A work's title may be created by someone other than the owner, and in such cases, both the creator of the title and the work itself are protected. Even when a work is not protected, its title cannot be used to mislead the public into believing that another work of the same type is

associated with it. Unless there is evidence to the contrary, authorship is presumed to belong to the person(s) whose name appears on the work at the time of publication.

In summary, the protection of paintings used in architecture as neighboring rights and patent rights represents a complementary approach to safeguarding the rights of creators and executors of such works. Neighboring rights, typically associated with performers, producers, and individuals involved in the dissemination of a work, can play a role in protecting architectural paintings. These rights extend beyond the artist who created the painting and may include individuals responsible for executing paintings on walls, ceilings, or other architectural elements. For instance, teams responsible for faithfully reproducing an artist's designs in a construction project may be entitled to legal protection under neighboring rights.

On the other hand, patent protection for paintings used in architecture applies when such paintings incorporate innovative and inventive elements that qualify as patentable inventions. For example, architectural paintings incorporating advanced technologies, such as nanomaterials, light-sensitive pigments, or environmentally responsive coatings, may be eligible for patent registration. This type of protection ensures not only the economic and moral rights of the creator but also grants exclusive use of the technology or unique design.

Together, neighboring rights and patent rights, along with copyright protection, establish a comprehensive legal framework for safeguarding the artistic and commercial interests of paintings used in architecture. These legal protections encourage greater creativity and innovation in architectural projects by ensuring that creators and executors can confidently develop and implement new artistic ideas without fear of infringement. Additionally, such legal frameworks help preserve the authenticity of works and prevent violations of associated rights.

## 5. Protection of Paintings Used in Architecture through Artificial Intelligence

Providing a single definition of artificial intelligence (AI) is challenging. However, it can be described as a system

that analyzes its environment, makes decisions, and exhibits intelligent behavior with a certain degree of autonomy. This technology is progressively expanding into various fields, including legal professions. In other words, AI is a branch of computer science that aims to create intelligent machines capable of performing cognitive tasks such as speaking, learning, and problem-solving {Tahmasbi, 2006 #172300}.

Legal scholars have suddenly encountered the reality that the practical domain of law may be significantly affected by AI. Some even discuss robotic justice and AI judges, and certain countries are gradually integrating this technology into their judicial systems {Rahbari, 2022 #172305}.

Thus, AI specialists strive to simulate human cognitive abilities by leveraging disciplines such as physics and computer science, using AI's capabilities for the benefit of society {Vaghqi, 2020 #172299}.

Theorists have provided different definitions of intelligence. Some view it as the ability to acquire experience, perceive, and make appropriate decisions in response to environmental changes. Others define it as the capacity to rapidly find optimal solutions in a vast informational space where such solutions might seem unlikely to an observer {Lenat, 1992 #172309}. As a result, AI is also subject to various interpretations and definitions. The term "artificial intelligence" was first introduced by Professor John McCarthy of Stanford University, defining it as the science and engineering of building intelligent machines—machines that can learn and act intelligently {Manning, 2022 #172308}.

In a comprehensive definition, AI refers to intelligent systems that learn through big data analysis and cloud computing, execute tasks, and enable new software and robotic systems to operate independently from their developers and operators {Kayssi, 2019 #172310}. AI is categorized into four generations based on decision-making and problem-solving capabilities:

1. Reactive AI (first generation).
2. Limited Memory AI (second generation).
3. Theory of Mind AI (third generation).
4. Self-Aware AI (fourth generation) {Hintze, 2016 #172311}.

This classification is essential because AI used in legal proceedings must not only be intelligent but also possess a form of human-like understanding that considers others' emotional states to ensure fairer adjudication. It

is crucial to note that machine-based intelligence and data analysis cannot function without a predefined operational framework, referred to as an algorithm. An algorithm is a finite set of instructions executed in a specific order to solve a problem. In other words, it is a step-by-step method for addressing legal cases or problem-solving.

AI is a relatively recent field, having emerged roughly half a century ago, yet it has demonstrated undeniable efficiency across numerous aspects of human life. Its applications extend across engineering, medicine, psychology, and the humanities, continuously evolving and expanding. Future projections suggest that AI will become autonomous and independently integrated into all aspects of human life.

AI has seamlessly integrated into human existence, alleviating many burdens of modern life. For example, it has revolutionized surgical procedures, allowing for precise, fatigue-free operations without human error, assisting or even replacing physicians while ensuring better patient outcomes. AI-powered prosthetics interpret brain commands, enabling movement for disabled individuals, challenging conventional notions of physical disability. In engineering, AI performs complex calculations instantly, eliminating human error and improving efficiency. In military and high-risk environments, AI executes combat, counterterrorism, and hazardous operations (e.g., nuclear or chemical exposure) without risking human lives.

Furthermore, AI has reduced governmental responsibilities in governance, decision-making, and public service delivery, leading to greater societal satisfaction and improved quality of life. AI has dissolved geographical barriers, fostering global connectivity and raising discussions on the transformation of nation-states and power dynamics. It suggests a future where citizenship is defined beyond traditional borders, emphasizing human unity and cooperation. AI also minimizes life's daily burdens, creating more time for personal well-being while reducing occupational hazards, work-related stress, and premature mortality. Although every technological advancement comes with challenges and risks, AI's benefits far outweigh its drawbacks. The focus of this study is on its applications and advantages {Abouzari, 2022 #172324}.

In legal applications, AI is already in use. For example, in 2019, Estonia's Ministry of Justice announced plans to



employ AI judges for resolving small claims disputes under \$7,000 {Niiler, 2019 #172306}. Similarly, China utilizes AI systems to detect inconsistencies in judicial rulings, helping establish uniform legal precedents by reporting discrepancies to higher courts {Yu, 2022 #172298}.

The protection of paintings used in architecture through AI is an emerging and fascinating topic in intellectual property law, presenting both challenges and opportunities for safeguarding artistic works. This issue can be analyzed from technical, legal, and managerial perspectives, as outlined below.

AI, through deep learning and image recognition technologies, can identify and classify paintings used in architectural structures. These algorithms can analyze visual elements with high precision, aiding in the registration and protection of these works. This technology is particularly useful for identifying and categorizing murals and ceiling paintings in historical buildings based on artistic style and technique.

AI can automatically store data on architectural paintings in digital databases, including artist names, creation dates, locations, and visual characteristics. This not only preserves historical records but also ensures intellectual property protection.

A key application of AI is monitoring copyright infringement. AI-powered systems continuously scan architectural projects for unauthorized use of protected paintings, notifying rights holders of any violations.

Additionally, AI can integrate with blockchain technology to register paintings as digital assets, ensuring immutable records of ownership and history. This provides several benefits:

1. Prevention of fraud and unauthorized use.
2. Tracking ownership rights in international projects.
3. Detection of forgery and unauthorized reproduction.

AI algorithms can detect unauthorized reproductions or copied paintings in architectural projects, verifying visual similarities and identifying copyright infringements. AI can also automatically monitor the usage of paintings in architectural projects, ensuring that all works are legally used with proper permissions.

Another capability of AI is creating automated alert systems that notify rights holders of potential copyright

breaches. These systems are particularly useful for large-scale projects where manual oversight is impractical.

AI can assist lawyers and intellectual property experts by rapidly analyzing legal documents related to architectural paintings, including copyright agreements and legal precedents. AI-based systems can suggest strategies for better protection, such as international registration or managing intellectual property rights in multinational projects.

Furthermore, AI itself can generate artistic works for architectural use. These AI-created artworks can be registered and legally protected as digital assets, holding distinct intellectual property rights. When AI is involved in artistic creation, it raises the question of shared ownership between the artist, architect, and AI developer, necessitating a re-evaluation of intellectual property laws.

A crucial issue in AI-generated works is determining legal ownership. Does the intellectual property belong to the AI creator, the system owner, or both? Should AI-generated art be subject to co-ownership frameworks? AI applications must align with national and international intellectual property laws, including copyright, neighboring rights, and patent regulations, all of which may require modification to accommodate new technologies.

The protection of architectural paintings through AI enhances intellectual property management, transparency, and enforcement. AI can identify, register, and monitor artistic works, ensuring the rights of artists and architects while expanding creative opportunities in architecture and art. However, legal and ethical concerns regarding AI-generated works necessitate further scrutiny and adjustments to existing legal frameworks.

## 6. Conclusion

Regarding the accession of countries to the 1886 Berne Convention for the Protection of Literary and Artistic Works, which covers all forms of creative works, including books, paintings, sculptures, architecture, and other artistic expressions, Germany and France became members in 1887. Today, intellectual property rights play a crucial role in international trade, foreign investment, and technology transfer, making them an essential component of global economic development. A robust intellectual property system is regarded as a fundamental pillar of the global economy and an

effective tool for fostering innovation, facilitating technology transfer, and attracting foreign investment across various economic sectors.

Regarding the irrelevance of the artistic features of a work in determining its eligibility for legal protection, Iranian law addresses this issue in Article 1 of the Law on the Protection of Authors, Composers, and Artists' Rights, while French law discusses it in Article 112-1 of the Intellectual Property Code. German intellectual property law in Article 1 takes a broader approach compared to Iran and France. The protection of paintings, architectural works, and designs is explicitly mentioned in Articles 1(t) and 1(c) of the German Intellectual Property Law, Article 2-112(7) of the French Intellectual Property Code, and Articles 1(5) and 1(7) of the Iranian Law on the Protection of Authors, Composers, and Artists' Rights. Additionally, Articles 2(8) and 2(12) of the Draft Comprehensive Bill on the Protection of Literary and Artistic Property and Related Rights also recognize paintings and architectural works as eligible for protection. Articles 1(13) and 1(16) of the same draft bill define architectural and applied artistic works, while Article 1(10) explicitly addresses fine arts. This level of explicit classification is not observed in German and French intellectual property laws.

The presentation of a work refers to the technique and method used to introduce it to an audience, and the requirement of originality is fundamental for legal protection. Depending on the nature and type of the work, specific conditions may be established for protection eligibility. Article 2-112(4) of the French Intellectual Property Code discusses this issue in detail. In Iranian law, Article 6 of the Draft Comprehensive Intellectual Property Bill states that works are protected based solely on their creation, regardless of the method or form of their presentation. Article 2(12) and Article 2(10) of the draft bill mention architectural works, emphasizing their protection, which could have been more effectively consolidated into a single provision.

Concerning originality, qualitative standards should not be the focus; instead, the creator's personal contribution should be evident in software components, including preliminary design, source code, core programming, and architectural structure, ensuring that the work is not a mere reproduction of others' efforts. In Iranian, German, and French legal systems, originality is a fundamental requirement for copyright protection, albeit defined

differently in each jurisdiction but ultimately conveying the same legal intent.

The possibility of reproducing a work for non-commercial purposes may enhance the rights of the creator. Protection for software requires formal procedures, with technical approval serving as a regulatory requirement. However, unconditional copyright protection for literary and artistic works conflicts with procedural requirements for software protection. The optional registration of literary and artistic works is another problematic issue that may compromise creators' rights.

Regarding works created under commission, two legal approaches exist. The first involves the complete transfer of economic rights to the employer while retaining moral rights. The second involves the full transfer of both economic and moral rights to the employer. Logically and legally, the first approach is more appropriate. However, in the field of painting, the second approach is occasionally observed, underscoring the need for public awareness and legislative reforms to ensure creators understand their moral rights.

In the patent system for software protection, an inventor does not need to prove that a third party's software lacks copyright protection to establish infringement. If a registered patent exists and similar products infringe upon the patented invention, the burden of proof falls on the alleged infringer to disprove infringement. However, high registration costs, lengthy approval processes, and the possibility of patent invalidation by third parties are significant challenges. Obtaining a patent certificate requires disclosing the technological innovations underlying the software, which may result in the unintended disclosure of trade secrets.

The findings also indicate that using artificial intelligence (AI) for protecting architectural paintings is an innovative and compelling topic in intellectual property law, providing enhanced safeguards for these artistic works. AI can strengthen intellectual property rights through identification, registration, and monitoring mechanisms. AI algorithms can analyze the visual elements of paintings with high precision, enabling their identification and classification. Furthermore, information regarding paintings, such as the creator's name, creation date, and visual characteristics, can be automatically stored in databases, which is crucial for legal and historical preservation.

AI can also leverage blockchain technology to permanently record ownership information for paintings, thereby preventing fraud and unauthorized use while ensuring trackable ownership in international projects. Moreover, AI algorithms can detect unauthorized reproductions or copyright infringements, providing real-time alerts to rights holders.

AI can assist lawyers and legal professionals by analyzing legal documents and records related to paintings and suggesting strategies for improved protection. Additionally, AI can generate new artistic works, which may themselves become subject to intellectual property rights.

However, determining ownership rights for AI-generated works and aligning current legal frameworks with AI technology pose significant legal and ethical challenges. Ultimately, AI can play a transformative role in the management and protection of artistic works, fostering innovation in both architecture and the arts. Nonetheless, revisions and adaptations in intellectual property laws are necessary to ensure that all stakeholders' rights are adequately protected.

### Authors' Contributions

Authors contributed equally to this article.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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### Declaration of Interest

The authors report no conflict of interest.

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### Ethical Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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