Who Holds the Pen When the Machine Writes? A Prompt-Based Approach to Originality in AI-Generated Works

Modestos Gavalas

Summary

This research critically examines how the rapid integration of generative artificial intelligence into creative industries challenges the foundational copyright concepts of originality and authorship. Moving beyond abstract theorization, the paper adopts a comparative and empirically informed doctrinal methodology, analysing how existing copyright frameworks in the European Union, the United States, and the United Kingdom respond to AI-assisted and AI-generated works in practice.

From a **comparative standpoint**, the paper situates generative AI within the distinct yet converging copyright traditions of the European Union, the United States, and the United Kingdom. Rather than treating these systems as static, the analysis traces how each jurisdiction's originality and authorship doctrines have evolved in response to technological disruption. By engaging with landmark judicial decisions and regulatory responses, the study reveals underlying tensions between formal legal standards and the practical realities of AI-assisted creativity, highlighting areas where doctrinal coherence is increasingly strained.

Complementing this comparative inquiry, the research adopts an empirically grounded lens, drawing on concrete examples from contemporary generative AI practices and emerging administrative and judicial disputes. By examining different modes of human and AI interaction across creative contexts, the paper explores how varying degrees of human involvement complicate traditional assumptions about creative control. This approach allows the analysis to remain closely connected to real-world applications, while leaving open critical questions about how existing legal frameworks may adapt to evolving creative processes.

The paper advances a novel doctrinal proposition: **originality in AI-assisted works should be assessed not solely by examining the final output, but by evaluating the** creative effort embedded in human inputs, particularly prompts, iterative refinements, and curatorial decisions. By shifting the analytical focus toward prompt-based creativity, the study reconciles technological realities with established copyright principles while maintaining legal certainty.

Finally, the research addresses emerging evidentiary challenges, including the difficulty of proving human authorship in AI-assisted creation. It explores practical mechanisms such as metadata analysis and prompt inversion techniques as potential tools for courts and rights holders. Overall, the paper contributes a nuanced, case-law-driven framework for reassessing originality and authorship in the AI era, offering courts and policymakers a path that preserves human creativity without stifling technological innovation.

Chapter 1
Defining Artificial Intelligence

1. Artificial Intelligence emergence

For decades, artificial intelligence has been depicted as a force of either boundless creativity or existential threat. Science fiction often envisions AI as an autonomous entity, capable of original thought, a messenger of advance, or a rebellious creature ready to deliver chaos into the human status quo. Yet, the reality of AI today is far from

the sentient machines of *The Matrix* or *2001: A Space Odyssey,* where AI competes against humans and finally dethrones them.[1]

As of today, AI functions as an advanced instruments that boost productivity and assist human decision-making. In industries like manufacturing, transportation, and entertainment, where they are increasingly seen as catalysts for cost-cutting and profitability, their use is growing quickly.[2] Investment interest has consequently shifted to businesses engaged in AI development, with the industry expected to reach a $2 trillion valuation in the next ten years.[3]

Early definitions described AI simply as "machines that do intelligent things that humans do."[4] More recent academic approaches incorporate elements such as reasoning, learning, environmental interaction, and problem-solving.[5] In response to the need for greater conceptual clarity, governments and regulators have attempted to formalize definitions.

Definitions of AI appear in various forms internationally. In the UK and the US, such definitions are contained across several regulatory and legislative sources.[6] On the contrary, in the EU, a unified definition is provided through the AI Act, which characterizes AI as a machine-based, adaptive system capable of autonomously generating outputs affecting physical or virtual environments.[7]

2. Core elements

From the definitions outlined above, several key elements warrant emphasis. AI systems are **autonomous** entities designed to execute **tasks** with human-like **intelligence**.

Firstly, autonomy can be described as the capability of these systems to initiate a self-learning procedure, either purely by themselves or with minimal human intervention, and implement their own decisions.[8] A representative example consists of self-driving cars that learn from interaction with the environment and drive accordingly.

---

[1] *The Matrix* (Warner Bros 1999), *2001: A Space Odyssey* (Metro-Goldwyn-Mayer 1968)
[2] Bernzweig, M. (2023) AI industry adoption in 2023: Trends, statistics, and impact, Software Oasis. Available at: https://softwareoasis.com/ai-industry-adoption-trends-statistics-impact/ (Accessed: 06 March 2025). & ZipDo Education Reports, *AI in the Entertainment Industry Statistics* (30 May 2025),
[3] Thormundsson, B. (2024) Artificial intelligence (AI) worldwide - statistics & facts. Available at: https://www.statista.com/topics/3104/artificial-intelligence-ai-worldwide/ (Accessed: 06 March 2025).
[4] Minsky M. (1968) Semantic Information Processing. MIT Press, Cambridge
[5] Andreas Häuselmann. (2022) 'Disciplines of AI: An Overview of Approaches and Techniques' in Bart Custers and Eduard Fosch-Villaronga (eds), *Regulating AI and Applying AI in Legal Practice* (Springer 2022).
[6] Information Commissioner's Office, *Part 1: The Basics of Explaining AI – Definitions* (ICO. Less comprehensive but similar in principle are the definitions of National Cyber Security Centre and UK government. See UK Government, *A Guide to Using Artificial Intelligence in the Public Sector a*nd National Cyber Security Centre, *Artificial Intelligence – Advice & Guidance* (NCSC) & 15 USC § 9401(3) (prelim. edn)
[7] Regulation (EU) 2024/1689, Article 3(1)
[8] Walsh, Kenneth R., Sathiadev Mahesh, and Cherie C. Trumbach. "Autonomy in AI Systems: Rationalizing the Fears." *The Journal of Technology Studies* 47, no. 1 (2021): 38–47.

Secondly, Artificial intelligence is considered intelligent in the sense that it can perform tasks rationally and efficiently. By recognizing patterns and performing calculations, AI systems can make predictions. A further implication of this is adaptability.[9] Learning to respond to external changes, these systems emulate the capacities of the human brain.

For intelligence to be formed, systems undergo a learning process, known as machine learning. This procedure aims to develop models that learn through data.[10] There are two main categories of machine learning: supervised and unsupervised. In the former, labeling of data is already given, while in the latter, classification relies entirely on the system's capability to discover patterns.

Finally, these systems were created to address time-consuming tasks and simplify everyday life**.** Based on the tasks they operate on and how they benefit users, a further division can be made. On one hand, there is Artificial Intelligence made by default to analyze general data and advance to specific solutions in different areas, and on the other hand, Artificial Intelligence systems only handle specific tasks.[11]

3. Generative AI

Unlike traditional AI, which typically operates within predefined parameters, generative AI introduces an unprecedented level of creativity and autonomy by enabling machines to produce content from the outset.[12] Data fed to these algorithms is listed in databases created or made available to them by humans. Devouring large amounts of raw, uncategorized data in an unsupervised model, GenAI machines can produce multimodal content in various forms, such as text, audio, images, and videos. They mainly rely on an innovative integrated technology called Generative Adversarial Networks.

Generative Adversarial Networks function similarly to neuronal networks in the human brain, utilizing two interconnected subsystems that directly compete with one another.[13] Two components interact: the Generator, which produces data resembling real examples, and the Discriminator, which evaluates whether that data is real or artificial. Through repeated training and feedback, both systems improve, enabling the AI to generate increasingly realistic, human-like content.[14]

[9] Fischer, G. (2023). Adaptive and Adaptable Systems: Differentiating and Integrating AI and EUD. In: Spano, L.D., Schmidt, A., Santoro, C., Stumpf, S. (eds) End-User Development. IS-EUD 2023. Lecture Notes in Computer Science, vol 13917. Springer, Cham.

[10] Devillé, R., Sergeyssels, N. and Middag, C. (2021) 'Basic Concepts of AI for Legal Scholars', in J. De Bruyne and C. Vanleenhove (eds.) Artificial Intelligence and the Law. p. 1–22.

[11] Usually referred as Narrowed and Multimodal Ai in literature. See. Lu, Y. (2019) 'Artificial intelligence: a survey on evolution, models, applications and future trends', *Journal of Management Analytics*, 6(1), pp. 1–29. .

[12] Ziv Epstein, Aaron Hertzmaan, (2023), Art and the science of generative Ai. Science 380, 1110-1111.

[13] Goodfellow I and others, 'Generative Adversarial Networks' (2020) 63(11) Communications of the ACM 139

[14] Fui-Hoon Nah, F. et al. (2023) 'Generative AI and ChatGPT: Applications, challenges, and AI-human collaboration', Journal of Information Technology Case and Application Research, 25(3), pp. 277–304

4. Applications, Advantages, and Drawbacks

Various applications of GenAI have entered the market. Most of them require individualized instructions from users to produce an output. This interaction process, known as **prompt engineering**, plays a crucial role in guiding AI models to produce content that aligns with users' input.[15] The majority of widely used models rely on prompting to a certain degree to generate an output. However, some exceptions exist where AI takes the initiative to generate work with minimal human intervention, where users only pick predefined templates. For this paper, systems that rely on user prompts will be called **interactive**, and ***non-interactive***, the ones that operate with zero to minimal human input.

Over the last decade, generative AI has been of paramount interest to the creative industry. What is more shocking is the rapid advancement of these systems to the extent that humans— and even experts— are now incapable of differentiating between human-made and machine-made works.[16] When exhibiting entertainment elements, this multiformat output seems to acquire critical acclaim and subsequently earn commercial value. As a logical consequence, questions in the legal sphere arise, such as who is entitled to exploit this produced content, how, and to what degree it is protected.

5. Legal Implications

Traditionally, such questions have been addressed through copyright law. To assess the implications of generative AI, it is first necessary to outline the copyright backbone and then examine how existing legal provisions apply to these new technologies, identifying points of conflict and emerging disputes.

The subsequent chapter will provide a relevant analysis of copyright law, followed by an in-depth examination of the legal challenges posed by the integration of artificial intelligence in the creative process.

Chapter 2
Legal Framework

1. The Copyright Framework

Copyright protection today extends to numerous sectors of economic, educational, informative, and creative importance. From Books, articles, performances, audio and

[15] Mark N. K. Saunders, (2024) The Quick Guide to Prompt Engineering: Generative AI Tips and Tricks for ChatGPT, Bard, Dall-E, and Midjourney.

[16] For detailed analysis See Di Cooke and others, (2024) 'As Good as a Coin Toss: Human Detection of AI-Generated Images, Videos, Audio, and Audiovisual Stimuli' arXiv:2403.16760

visual works, photographs, and architectural buildings to even marketing campaigns and software, copyright seems to be the globally adopted approach. According to the Berne Convention, the common element of these works consists of either their Literary or artistic image.[17]

To fall within the scope of copyright protection, a work must meet two cumulative criteria recognized across domestic legal orders. First, a work must be expressed in a clear, precise, and objective manner, and secondly, the work must establish a level of uniqueness, interpreted differently in respective jurisdictions.[18]

As for the first criterion, the distinction between ideas and expressions is fundamental to copyright. Contemporary legal regimes protect the expression of creative ideas rather than ideas as such. This principle is enshrined in Berne Convention and in the TRIPS agreement.[19]

For example, in the United Kingdom, nearly a century ago, the High Court ruled that the life experiences of a footballer, no matter how compelling, could not be protected by copyright unless they were expressed in a particular form.[20] Half a century later, the Supreme Court of the United States highlighted that granting copyright protection for news, historical facts, or ideas would create a copyright monopoly.[21] Respectively, the Court of Justice of the European Union has extended this reasoning to the software industry, holding that computer ideas underlying interfaces and algorithms**,** being abstract ideas**,** do not qualify for copyright protection.[22]

The second criterion for establishing copyright protection demands that works be original.[23] Different interpretations have been given regarding originality, all concluding that originality is intertwined with the author's personality.

In the European Union, with the Infopaq, stressed that even a sequence of words can be considered as original if they are the author's own intellectual creation, invoking as legal grounds article 1(3) of Directive 91/250/EEC**.**.[24] Moreover, in the following reasoning, the Court expanded the requirement, highlighting that a work can be copyrighted when it reflects the author's personality.[25]

Thereafter, the Court enriched the originality definition, characterizing works as original when deriving from ''free and creative choices of the author'', and ''leave

[17] Berne Convention for the Protection of Literary and Artistic, Article 1
[18] Case C-683/17 *Cofemel – Sociedade de Vestuário SA v G-Star Raw CV* EU:C:2019:721,(para 29.)
[19]Berne Convention for the Protection of Literary and Artistic Works, Article 1 & Agreement on Trade-Related Aspects of Intellectual Property Rights, Article 9(2).
[20] Donoghue v. Allied Newspapers Ltd. (1938) 1 Ch 106
[21] Harper & Row v. Nation Enterprises, 471 U.S. 539 (1985)
[22] Case C-406/10, SAS Institute Inc. v. World Programming Ltd[2012],EU:C:2012:259.
[23] Can be imprinted dispersedly in Berne Convention for the Protection of Literary and Artistic Works(adopted 9 September 1886, last revised 28 September 1979) Art 2(3), 8, 11, 11[ter]
[24] Case C-5/08, Infopaq International A/S vs Danske Dagblades Forening [2009], EU:C:2009:465, (para 35.)
[25] Ibid, (para 50.)

his/her personal touch''.[26] In Cofemel, the court explicitly abandoned any qualitative standards, dismissing aesthetic requirements as claims implying subjectivity.[27] Finally, in Brompton Bicycle Ltd, the Court stated that components of a product that are predetermined by its technical function are not original.[28]

Recently, with the anticipated Mio AB decision, the European Court of Justice clarified originality, delving into its essence. The Court emphasized that originality must result from free and creative choices made by the author, which are reflected in the concrete expression of the work itself. By contrast, external or subjective elements — such as the creative process, the exhibition of the work, or the author's intentions — are not decisive, particularly where they cannot be objectively identified in the final fixation of the work.[29] Therefore, the Court recognizes these external factors only as indicators of originality.

In the United States, the Supreme Court has repeatedly concluded that originality must be examined as a minimal level of creativity, which also includes the author's personal touch. In *Feist Publications*, the Supreme Court established that creativity, repeatedly articulated as "creative spark'', requires a minimal degree of originality beyond mere copying, setting a low threshold that does not depend on the amount of effort expended, nor imprinting the author's personality.[30] Furthermore, the Court reiterated the need for creative choices, emphasizing that they must derive from the author.[31] Lastly, creativity was contrasted with technicality and skill effort.[32]

In the United Kingdom, the concept of originality has undergone a significant evolution. Initially, copyright law focused on the "skill, labor, and judgment" standard, meaning that protection was granted based on the effort and diligence invested in creating a work, regardless of its creative merit.[33] This approach, known as the '**sweat of the brow**' doctrine, prioritized effort over creativity and was progressively abandoned, with its last notable mention in the case of *Sawkins v Hyperion Records Ltd*.[34] As UK law became increasingly harmonized with EU law, the standard for originality evolved to require a certain degree of creative input from the author.[35] A landmark case illustrating this shift is *Football Dataco Ltd,* where the court clarified

[26] Case C-145/10, Eva Maria Painer vs Axel Springer AG[2011], EU:C:2011:798 (para. 89-92)
[27]Case C-683/17, Cofemel vs G-Star Raw CV[2019],EU:C:2019:721 (para. 53,54,56)
[28] Case C-833/18, Brompton Bicycle Ltd vs Chedech/Get2get[2020], ECLI:EU:C:2020:461 (para. 27.)
[29] Cases C-580/23 and C-795/23, *Mio AB v Asplund* and *USM U. Schärer Söhne AG v konektra GmbH* ECLI:EU:C:2025:941 (para 74, 74 & 81)
[30] Feist Publications, Inc. v Rural Telephone Service Co., Inc., 499 US 340 (1991)
[31] Bridgeman Art Library Ltd v Corel Corp, 36 F Supp 2d 191 (SDNY 1999). Also see. J. Hughes, 'Restating Copyright Law's Originality Requirement' (2021) 44 Colum JL & Arts 383
[32] Meshwerks, Inc. v Toyota Motor Sales USA, Inc., 528 F. 3d 1258 (10th Cir. 2008)
[33] For more details, see University of London Press Ltd v University Tutorial Press Ltd [1916] 2 Ch 601
[34] *Sawkins v Hyperion Records Ltd* [2005] EWCA Civ 565
[35] J. Hughes, (2021) 'Restating Copyright Law's Originality Requirement' 44 Colum JL & Arts 383

that originality in the selection and arrangement of a database is the only relevant factor to copyright protection.[36]

2. Authorship

Once originality is established, the next step is to identify the author, the natural person to whom the work is legally attributed. Authorship as a notion is essential, as it determines who holds the initial rights under copyright law.

The most commonly encountered form of authorship remains sole authorship, when the author is a single person. Apart from that, authorship can be awarded to more than a single person on the condition that each person contributed inseparably and originally to the final work. In academic literature, this concept is commonly referred to as joint authorship.[37] For multiple individuals to be considered joint authors, each must contribute at least a minimal level of free and creative choices, in any stage of the production of the work, that influence the final form or expression of the work, regardless of the effort put into it.[38]

A further concept adopted by numerous countries worldwide is work-for-hire authorship. Pursuant to this doctrine, any work created by an employee in the course of their employment and within the scope of their contractual duties is, by default, assigned to the employer, who becomes eligible to exploit it. This notion is dominant in the US, but less harmonized in the EU, mainly remaining a national matter.

3. Relevance

The concepts explored above are not merely historical doctrines. They form the legal filter through which generative AI must now be assessed. GenAI challenges each of these foundations: its outputs blur the line between idea and expression, its creative process is partly automated, and authorship is no longer easily attributable. As generative systems become embedded in creative industries — from publishing and advertising to visual arts, music, and software — these doctrines will determine whether AI-assisted works enter the economy as protected assets or fall immediately into the public domain, resulting in the deprivation of the author's work exploitation.

[36] In contrast to the level of Skill and labour put. Case C-604/10, Football Dataco Ltd vs Yahoo UK Ltd [2012], EU: C:2012:115, (para. 46)
[37] J. Fritz, (July 2024), The notion of 'authorship' under EU law—who can be an author and what makes one an author? An analysis of the legislative framework and case law, *Journal of Intellectual Property Law & Practice*, Volume 19, Issue 7, Pages 552–556
[38] See Case C-145/10, Eva Maria Painer vs Axel Springer AG[2011], EU: C:2011:798(para. 89-90)

Chapter 3
AI, Originality, and Authorship

1. A new trend

Over the past decade, AI-generated works have increasingly challenged traditional understandings of authorship, drawing public attention and, at times, remarkable commercial value. One frequently cited example is *The Next Rembrandt*, a portrait produced by a GAN-based system trained on Rembrandt's pieces and developed through a collaboration between ING, Microsoft, and Delft University. [39] More recently, a portrait of Alan Turing generated by an AI system sold at auction for over $1 million, attracting more than 25 bidders. What sets this project apart is that not only did AI generate the painting, but it also contributed to its concept through interactions with human collaborators, a fact which raises critical copyright questions, particularly regarding the extent of human involvement and who, if anyone, can claim authorship. [40]

Evaluating whether AI-generated content can qualify as a "work" within the meaning of copyright law, and consequently examining how the doctrine of authorship may be applied in such contexts, it is essential to revisit and integrate the concept of originality. At this point, it is useful to return to the distinction drawn in Chapter 1 between interactive and non-interactive systems, as it facilitates the analysis that follows.

2. Non-Interactive GenAI

In non-interactive Generative AI applications, users have limited freedom to instruct the model and instead merely select from predefined templates or make minimal adjustments within fixed parameters.[41] A defining feature of these tools is the absence of a prompt interface, or their restriction, thereby preventing users from directly guiding the generative process through free-form input.

Under EU law, originality requires that a work be the author's own intellectual creation, reflecting free and creative choices. In non-interactive Generative AI systems, where users merely select predefined options and cannot influence the generative process, such choices are largely absent, and no personal link to the output can be established. This approach is consistent with *Football Dataco*, where the CJEU held that works produced under technical constraints, leaving no room for creative freedom do not meet the originality threshold and fall outside copyright protection.[42]

---

[39] Microsoft, 'The Next Rembrandt' (Microsoft News Centre Europe, 5 April 2016)
[40] Nadia Khomami, 'Alan Turing Portrait by Ai-Da Robot Expected to Fetch £100,000 at Auction' *The Guardian* (8 November 2024.
[41] Examples of such applications include Canva's AI image generator, Soundraw.io, and Lensa AI.
[42] Case C-604/10, Football Dataco Ltd vs Yahoo UK Ltd [2012], EU:C:2012:115 (para. 38-39)

Similarly, in a very recent decision, the Prague Municipal Court held that a work generated by artificial intelligence did not qualify for copyright protection due to the absence of identifiable human creative input. The Court emphasized that, without a clearly defined prompt or substantial human contribution, such output cannot be considered a unique result of personal intellectual creation, as required under Czech copyright law.[43]

The outcome would not be different under the United States originality standard. For a work to be eligible for protection, it must satisfy two key requirements: first, it must originate from the author and not be a mere imitation; second, it must exhibit a modicum of creativity.[44] Nevertheless, even though the use of music samples or pre-existing image templates in content creation may not necessarily constitute copying, the second criterion, namely, the presence of a low but discernible degree of creativity, appears to be lacking where users' input is highly restricted.

A different approach has been followed by the UK law. The legislator has explicitly created a sui generis copyright for cases where work was created by computer means. Article 9(3) of the Copyright Act allocates authorship to the person who made all the necessary arrangements for the creation of the work.[45] Although pioneering, this rule was enacted in a period when ''the sweat of the brow'' doctrine was still prevailing to justify copyright protection. Nowadays, this rule demonstrates that a lower threshold of originality may be applied to computer-generated works.[46] Due to the lack of a crystallized interpretation of originality in this context, a de minimis approach has been adopted, filtering out extremely simplistic content.[47] Under these observations, balancing and an ad-hoc interpretation of individual facts might be considered requisites to identify the closest contributor to the GenAI work. [48]

In the EU and US, it is, however, clear that users will not be entitled to a valid claim of authorship for the AI-generated output.[49] At the same time, originality cannot be detected in either the software engineer who shaped the AI system, since there is a huge gap between the parameters put into incarnating the AI algorithm, which are copyright-protected as original software, and a particular artistic output generated by

[43] Prague Municipal Court, 10 C 13/2023, (para. 12)
[44] M. Markellou, S. Antonopoulou and A. Giannakoulopoulos, 'AI and Copyright: New *Concepts vs. Traditional Law' in Nikos Koutras and Niloufer Selvadurai (eds), Recreating Creativity, Reinventing Inventiveness: AI and Intellectual Property Law (Routledge 2024)*
[45] Copyright, Designs and Patents Act 1988, s 9(3)
[46] A. Johnson, (2024) 'Generative AI, UK Copyright and Open Licenses: considerations for UK HEI copyright advice services' 13
[47] N. Cordell, B. Potts, and R. Dickens, (2024) 'Ownership of AI-Generated Content in the UK' 46(7) *European Intellectual Property Review* 470.
[48]See Nova Productions Ltd v Mazooma Games Ltd [2006] EWHC 24 (Ch), where the player's input, in a videogame, was considered not original and copyright was vested in the programmer.
[49] Hugenholtz, P.B., Quintais, J.P. (2021) Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?, 1190–1216.

them. The direct link between an author and his/her work is clearly missing in this context.

Moving on to the next potential candidate, we have to consider whether a work can be attributed to an AI system. As of the current legal framework, the answer to this question remains negative, primarily for two key reasons. Firstly, as it presently exists, artificial intelligence lacks legal personhood and consciousness. Consequently, it cannot bear rights or obligations, nor can it be held legally accountable or perform legally valid acts.[50]

Despite the issue of personhood, a stronger argument resides in the anthropocentric character of copyright law. The Supreme Court of the United States has consistently refused to award authorship to non-human beings, rejecting divine will, nature, and animals.[51] A similar approach has been adopted by Advocate General Trstenjak while interpreting the copyright harmonization directive.[52]

Finally, to overcome the undesired result of a generated AI work passing to the public sphere, scholars have proposed the work-for-hire doctrine in relation to AI. Accordingly, GenAI shall be treated as an employee producing outputs that automatically shall be attributed to the legal or natural persons hiring them.[53] This view retains some significant drawbacks.

First and foremost, the doctrine of work-for-hire as it has been developed judicially requires ''one person to engage another…..with the **mutual intent** that the title to the copyright shall be in the person at whose…''.[54] In Thaller vs Perlmutter, the court explicitly noted that Generative AI lacks the capacity to form intent.[55] Furthermore, this doctrine requires ''a **person** to engage another **person**'', and even under the broad interpretation provided until now, which may include corporate entities, AI systems cannot qualify, due to the absence of personhood.[56] Finally, according to section 17 U.S.C. § 201 (a), a copyright vests initially in the author before its transfer.[57] In Kelley, the court held that the author of a work must be human.[58] This necessarily implies

[50] R. Dremliuga, P. Kuznetcov & A. Mamychev, (2019) 'Criteria for Recognition of AI as a Legal Person' 12 J Pol & L 105

[51] Urantia Found. v. Kristen Maaherra, 114 F.3d 955, 957–59 (9th Cir. 1997) & Naruto v. Slater, 888 F.3d 418, 426 (9th Cir. 2018)

[52] Opinion of Advocate General Trstenjak, *Case C-145/10 Painer v Standard VerlagsGmbH and Others* ECLI:EU:C:2011:445, (para. 121)

[53] Kristanti, W. A., Sujatmiko, A., Setyawati, R., & Wicaksono, B. A. (2025). Legal protection of artificial intelligence as a copyrights. Eduvest - Journal of Universal Studies, 5(1), 381-399.

[54] *Lin-Brook Builders Hardware v. Gertler, 352 F.2d 298, 300 (9th Cir.1965)*

[55] Thaler v Perlmutter, No 23-5233 (DC Cir, 18 March 2025), par.7.

[56] See *Community for Creative Non-Violence v Reid*, 490 US 730 (1989), for the common law principles of agency.

[57] Copyright Act of 1976, 17 USC § 201(a)

[58] Kelley v. Chicago Park Dist., 635 F.3d 290, 304 (7th Cir. 2011)

that copyright at least momentarily must first vest in a human author, even if it is ultimately going to be owned by someone else.

3. Interactive GenAI

These systems operate by receiving instructions in the form of prompts and generating outputs accordingly. Prominent examples include ChatGPT (text generation), DALL·E (image generation), RunwayML (audiovisual content creation), and AIVA (music composition).

They can be metaphorically seen as tools in the artistic arsenal. Reckoning with them as something more than tools will lead to the paradox of a pen being the author of a book, as Whitford stated in the famous Express Newspaper case.[59] When the user exercises meaningful control over the generative process, it may, however, be reasonable to argue that, in line with prevailing legal standards across various jurisdictions, the resulting outputs should be eligible for copyright protection as original works assisted by AI.[60]

The U.S. Copyright Office recently issued updated guidance on works created with the assistance of GenAI, noting that copyright protection may apply where a user contributes a sufficient degree of creative input.[61] In *Zarya of the Dawn*, however, protection for AI-generated images was refused on the basis that the user's role was too passive and lacked control over the final output.[62]

This reasoning, however, does not reflect the nature of the creative process. The creator reportedly entered ''hundreds of descriptive prompts, iteratively refining the output, adding and subtracting stylistic elements, and curating results to match an intended artistic style. Such conduct reflects a level of intellectual judgment and creative selection that surpasses a ''de minimis threshold.[63]

Recalling the fundamental distinction between unprotectable concepts and copyrighted expressions, Midjourney in this scenario must be seen as a vast vessel, which entails endless possibilities. Yet, the element that transforms these possibilities into a fixated work is the **prompt**. It is through the prompt that the user gives shape to a particular expression, selecting one creative path among almost limitless combinations of underlying conceptual material.

[59] *Express Newspapers plc v Liverpool Daily Post & Echo plc* [1985] FSR 306 (Ch)
[60] S. Thongmeensuk**,** (2024), 'Rethinking Copyright Exceptions in the Era of Generative AI: Balancing Innovation and Intellectual Property Protection' *The Journal of World Intellectual Property*
[61] U.S. Copyright Office, *Copyright and Artificial Intelligence, Part 2: Copyrightability, January 2025, p.8*
[62] US Copyright Office*, Letter re: Zarya of the Dawn* (21 February 2023)
[63] Feist Publications, Inc. v. Rural Tel. Serv. Co., 499 U.S 363

This perspective aligns with the position of the European Court of Justice, which has declined copyright protection only in cases where technical constraints leave so few ways to implement an idea that the idea and its expression become indissociable.[64] A parallel principle exists in U.S. law through the merger doctrine, under which an expression is not protected where an idea can be conveyed in only one or a very limited number of forms.[65]

The Board's analogy to a client giving suggestions to a human artist is likewise unpersuasive. A human artist subjected to hundreds or thousands of required refinements would no longer exercise autonomous artistic judgment. His/Her contribution would be reduced to mechanical execution under another's creative authority.

In Théâtre D'opéra Spatial, the US Copyright Office acknowledged the possibility of registering AI-assisted works, depending on the original contribution of the user. What is essential there, according to the office view, is the creative control over the work in issue.[66] However, the Supreme Court previously ruled that, ''a party can be considered an author when his or her expression of an idea is transposed by mechanical or rote transcription into tangible form under its authority''.[67] Under the facts of this case, more than 624 prompts were provided, selecting coloring, artistic style, and detailed preferences. Taking into account the numerous and descriptive prompts entered, it seems that these prompts are closer to instructions rather than suggestions, and the GenAI performs a mere execution of an already conceived vision.

4. Analysis

The creative process may be broadly divided into three stages**: a)Conception**, b)**Execution**, and c)**Redaction**.[68] Conception concerns the formation of ideas and carries limited legal significance. Execution occurs when the user formulates and enters prompts that translate the idea into an expressive form, while redaction involves iterative modifications through further instructions. The more substantial the user's involvement in these latter phases, the stronger the basis for copyright protection.

Based on the observations made above, this paper advocates for a novel proposition: **the assessment of originality in AI-generated content should shift away from a narrow focus on the output itself and instead consider the creative effort embedded in the input,** namely prompts and instructions. Evaluating the intellectual skill and

[64] Case C-393/09 *Bezpečnostní softwarová asociace – Svaz softwarové ochrany v Ministerstvo kultury* EU:C:2011:43., (para. 48-49)
[65] *CCC Information Services Inc v Maclean Hunter Market Reports Inc* 44 F.3d 61, 68 (2nd Cir 1994)
[66] US Copyright Office, Théâtre D'opéra Spatial, Board Decision letter, p. 7
[67] *Andrien v. Southern Ocean County Chamber of Commerce,* 927 F.2d 132 (3d Cir. 1991)
[68] Bingbin Lu, (2021) 'A theory of "authorship transfer" and its application to the context of Artificial Intelligence creations' 11(1) *Queen Mary Journal of Intellectual Property* 2

judgment reflected in prompting enables a more accurate determination of authorship within generative AI environments.

To make this argumentation more realistic, two different prompts can be assessed to check whether the originality requirement has been established in both cases:

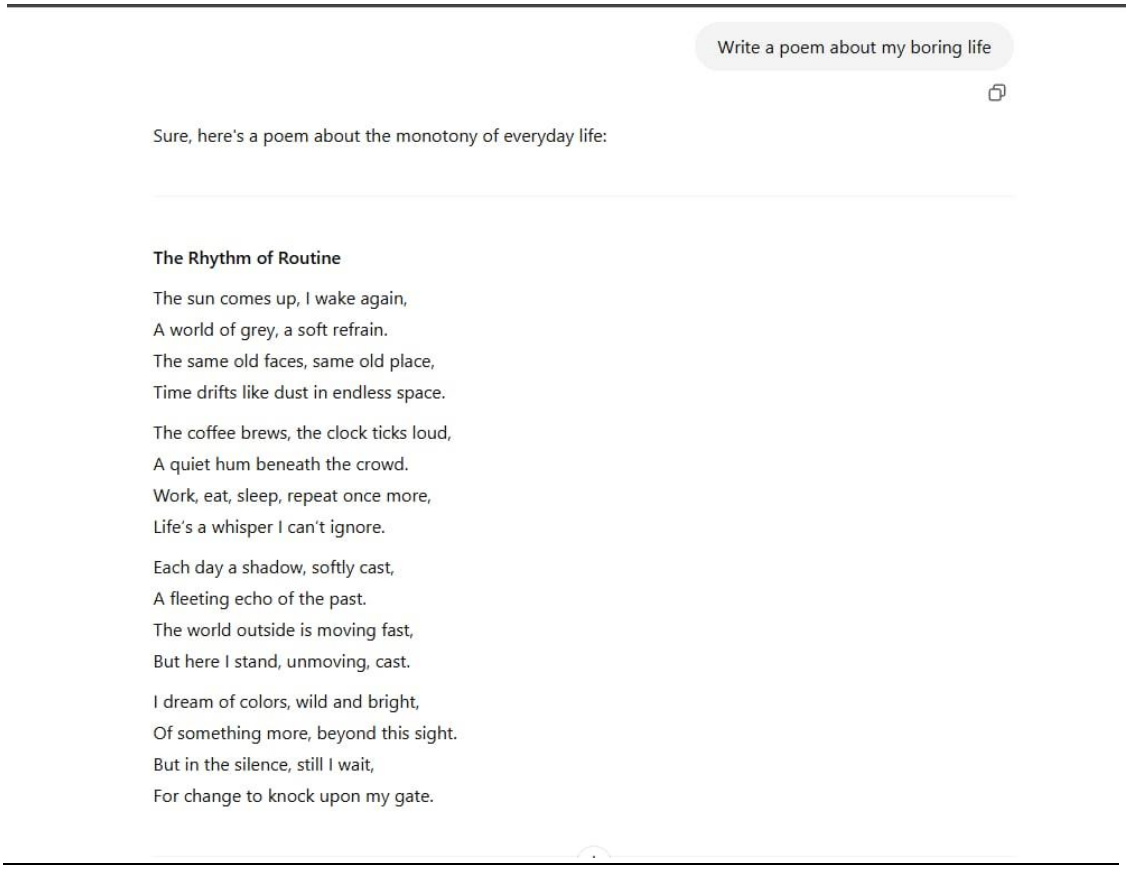

Figure A: Brief Prompting[69]

Figure A illustrates a poem generated by ChatGPT. Should we isolate the work, it becomes apparent that the poem— as a work of unknown origin— would likely satisfy conventional standards of originality. It demonstrates above a minimal degree of creativity and presents ideas that resonate with human sensitivities, to the extent that authorship could plausibly be attributed to a human creator.[70]

However, when the AI-generated output is considered alongside the initial human prompt, a significant gap becomes evident between the original human idea and its final expression. Creative choices and a personal touch seem to be inserted not by the

[69] OpenAI, *ChatGPT* prompt ''Write a poem about my boring life'',
[70]Described as a Work of the Human mind in: Atwill, Nicole; Rodriguez-Ferrand, Graciela. Copyright Law Overview: France, Haiti, Spain. Washington, D.C., Law Library of Congress.

author, but rather by the model, which recognizes patterns and connects boredom with occasions commonly detected in human everyday routine based on its available datasets. The same problem appears under the US law, where the ''creative spark'' seems- if not entirely-, partially absent.

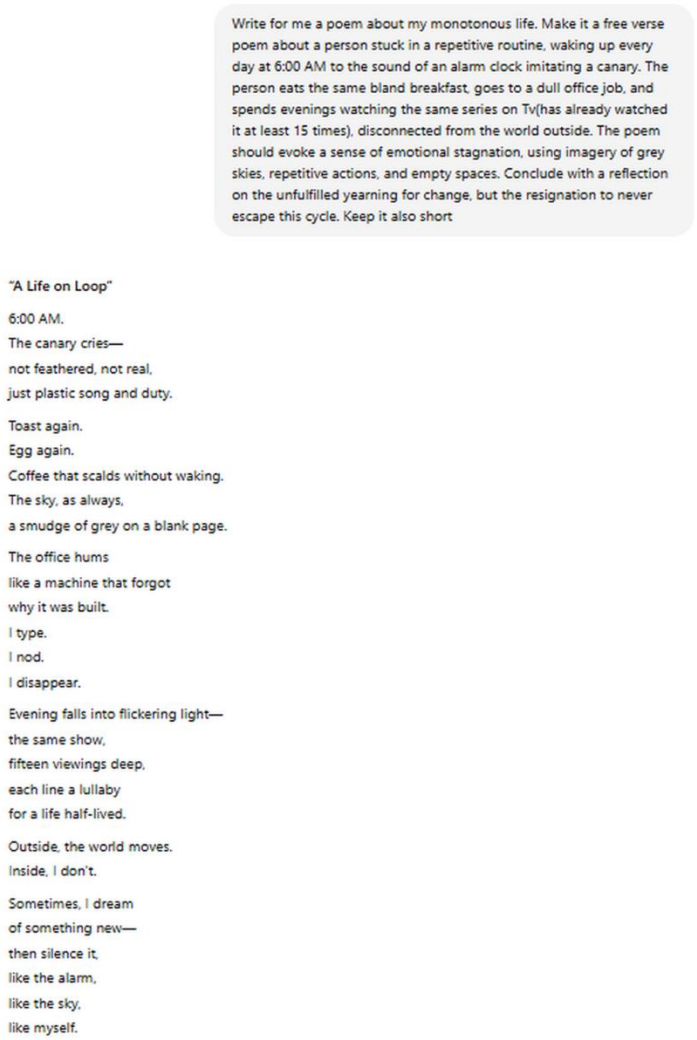

Figure B: Detailed Prompting[71]

Figure B illustrates a work generated following a detailed, structured prompt. In this scenario, ChatGPT operates as a tool through which a human-developed idea is expressed. The user's choices—such as thematic elements and narrative structure—reflect sufficient personal input to support authorship. This aligns with the U.S. Copyright Office's view that protection may arise where a user provides specific and meaningful instructions.[72] The argument would be even stronger where the user subsequently edits or modifies the output, consistent with the reasoning in

[71] OpenAI, *ChatGPT* prompt ''Write me a prompt about my monotonous life. Make it a free verse poem about …''
[72] See U.S. Copyright Office, *Copyright and Artificial Intelligence, Part 2: Copyrightability,* p.13.

Bridgeman, which recognized that material alteration or embellishment can satisfy the originality threshold.[73]

Comparing these case studies, we have the paradox that figure a) will most likely be deemed original if a human had created the same output, yet the actual prompting used to generate it with AI may not itself meet the threshold of originality. Figure b) will most likely result in being labeled as original in both cases. Resorting to prompt examination and abandoning the traditional notion of pursuing indicators of the author's personality solely expressed in the work will provide fairer solutions, preserving the anthropocentric character of copyright law.[74]

5. Evidentiary challenges

In practice, requiring authors to prove their creative involvement in the AI-assisted process would be impractical at its best and notorious at worst. A rebuttable presumption that GenAI-based works are as original as non-assisted works would therefore shift the burden of proof in disputes.[75] Yet, under ECJ, such a presumption would still require the putative author to demonstrate identifiable creative choices.[76]

Another argument against scrutinizing prompts to evaluate their original character relates to the difficulty of reverse prompt engineering, meaning the decomposition of creative outputs such as images, texts, or audiovisuals to instructions given by the end user.[77] One method to decompose a work into its original prompts involves examining embedded metadata. In many cases, GenAI stores hidden information within the output file, such as the original prompt, model settings, and parameters. If this metadata remains intact, it can provide a direct means of recovering directly or indirectly, the initial input.[78]

Moreover, an equally effective mechanism for measuring originality in cases where the absence, destruction, or alteration of metadata is seen constitutes the prompt inversion in the form of human nonreadable numeric texts. These ‘’pseudo-prompts’’ can therefore be re-entered into another model to inspect how it is going to respond. Generated works with much similarity will favor copyrightable prompting. Moreover, even the length of the inverted text that formulated this work can be evidence of an original prompt.[79] Although such techniques are not fully reliable yet, with the rapid

[73] Bridgeman Art Library Ltd v Corel Corp 25 F Supp 2d 421 (SDNY 1998)
[74] Simon Stern, 'Copyright Originality and Judicial Originality' (2013) 63(3) *University of Toronto Law Journal 231–274*
[75] Hugenholtz, P.B., Quintais, J.P., (2021), Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?. *IIC* 52, 1190–1216
[76] & Cases C-580/23 and C-795/23, *Mio AB v Asplund* and *USM U. Schärer Söhne AG v konektra GmbH* ECLI:EU:C:2025:941, (para 65.)
[77] Bozkurt, A. (2023). Unleashing the potential of generative AI, conversational agents, and chatbots in educational praxis: a systematic review and bibliometric analysis of genai in education. p. 261-270
[78] Salem, A. and Bănescu, S. (2016). Metadata recovery from obfuscated programs using machine learning. Proceedings of the 6th Workshop on Software Security, Protection, and Reverse Engineering
[79] Uri Y Hacohen and N. Elkin-Koren, (2024), 'Copyright Regenerated: Harnessing GenAI to Measure Originality and Copyright Scope' 37 Harvard Journal of Law & Technology 2.

evolution of this field, more promising deconstructive patterns are expected to arise, with some of them involving GenAI datasets and language models.[80]

6. Conclusion

The emergence of generative AI has unquestionably broadened the scope of artistic production, yet it also reveals practical and doctrinal difficulties that legal systems have not fully addressed. Although AI can produce striking results, the current anthropocentric copyright framework continues to hinge on meaningful human contribution—whether through detailed prompting, curation, or the exercise of judgment that shapes the final work.

The lack of a clear, unified approach to assessing originality in AI-assisted creations leaves courts struggling to distinguish between mere mechanical output and genuine human creativity. As attention shifts toward the role of prompts and the decision-making that precedes an output, flexible and context-sensitive interpretations will become increasingly important. The significant economic value attached to some AI-generated works underscores the urgency of finding a workable balance between originality, the functioning of IP markets, and legal certainty.

Looking ahead, copyright authorities and courts will be central in determining whether generative AI is understood as a legitimate creative instrument, integrated into the modern creative economy, or whether it remains at the margins. The direction of case law in the coming years will ultimately define that answer.

[80] Guanlong Wu and others, (2025), 'I Know What You Asked: Prompt Leakage via KV-Cache Sharing in Multi-Tenant LLM Serving' Network and Distributed System Security Symposium

Acknowledgments

1. A special thanks to Carlos Van Staveren, not only for his expert guidance but for the many interesting conversations that made this process so rewarding.