



Generative AI in design: Boon or bane

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Abstract

Generative Artificial Intelligence (AI) is rapidly transforming the design industry, particularly in the fashion industry, by offering new ways to create, innovate, and scale ideas. This research evaluates the creative and practical benefits of Generative AI tools, examines the extent of access these systems hold to existing design data, and addresses the concerns around plagiarism and intellectual property protection within the AI design ecosystem.

The research methodology combines a multi-layered approach. Firstly, existing case studies documenting AI's role in design processes are analysed. Secondly, surveys were conducted with industry professionals to gauge AI's utility and risks. Lastly, direct observation of AI outputs in response to targeted prompts across platforms such as ChatGPT, Gemini, Perplexity, and Midjourney. This method ensures that both theoretical and applied perspectives are depicted.

The study demonstrates that while generative AI facilitates rapid prototyping, customization, and creative exploration, it also introduces risks of homogenization and diminished originality. The findings suggest that AI functions most effectively as a supplementary design tool rather than a full creative substitute. Empirical observations confirmed that AI systems were unable to surpass paywalls on design platforms; however, once designs entered the public domain, replication became easier. Survey data further revealed concern among respondents regarding plagiarism. Analysis of different case studies indicated that methods such as watermarking and the mandatory disclosure of AI involvement may mitigate disputes.

Findings are limited by the rapidly evolving nature of AI tools, small sample sizes in surveys, and the inconsistency of measuring plagiarism incidents directly linked to AI. Generative AI is a powerful ally in design but cannot yet replace human creativity. Clearer rules, stronger protections, and ethical practices are needed to ensure its responsible use.

Keywords: Generative AI, plagiarism, design ethics

Introduction

The rise of Generative Artificial Intelligence has significantly transformed the design industry, reshaping creative processes and ideas of authorship. As AI tools become more advanced and accessible, they are increasingly integrated into design processes, from concept development to production. However, this progress also brings complex ethical and legal challenges related to plagiarism, authorship, and copyright, as designers and organisations navigate the blurred boundaries between human creativity and machine-generated content. Our research combines qualitative and quantitative data from surveys and interviews with design professionals to understand how they perceive and address these issues. Through a series of case studies, we examine how plagiarism arises, both intentionally and unintentionally, through AI-assisted tools. Additionally, our primary research includes direct engagement with AI platforms, observing their generative processes and potential for misuse.

Using our findings, within the broader discourse of design ethics, this paper highlights the tension between innovation and integrity in the age of AI.

Literature Review

1. Legal and Ethical challenges of AI in Fashion Design

Research on generative AI consistently highlights the tension between technological innovation and the preservation of creative integrity. Yilmaztekin, in his paper on Design Law and Fashion, argues that AI-generated designs, particularly in the fashion sector, challenge existing norms of authorship because outputs produced by machines often arise from the database of existing human artwork. As

AI becomes integrated in fashion product development, questions surrounding ownership of AI-assisted designs and liability for derivative works remain unresolved. This concern is reinforced in Nguyen's study, which demonstrates that AI generated visual products often resemble existing artistic styles, complicating the application of copyright law and blurring the boundaries between inspiration and replication. The paper shows a lack of comprehensive empirical/legal analysis on the ethical and legal implications of AI-driven design workflows.

Citations: Hasan Kadir Yilmaztekin (2022) — Artificial Intelligence, Design Law and Fashion; Son Nguyen (2024) — The Copyright and Plagiarism Dilemma: AI-Generated Design works derived from Existing Works

2. AI's role in Plagiarism and Academic Integrity

At the academic level, scholars have identified plagiarism as one of the most pressing issues associated with AI. Babu, in his paper on AI and Plagiarism, notes that while AI provides advanced mechanisms that detect plagiarism, it simultaneously generates content that may evade detection because of its synthetic but convincing originality. This dual role of AI as both a tool for preventing and producing plagiarism creates ambiguity for educators and institutions attempting to uphold academic integrity. Kwon further emphasises the complications with plagiarism by noting that generative AI has complicated the definition of plagiarism itself, as users may unknowingly reproduce language patterns or ideas embedded in large training databases, making ethical evaluation increasingly difficult.

Citations: Suresh Babu (2024) — Artificial Intelligence and Plagiarism: Challenges, Detection and Prevention; Diana Kwon (2024) — AI is complicating plagiarism. How should scientists respond?

3. Copyright Issues in AI generated creative work

Legal scholars have also focused on the evolving nature of copyright in the AI era. Fierens and Scheerlinck explain that many AI platforms explicitly state that users cannot claim exclusive ownership over AI outputs generated from proprietary datasets, yet these same outputs may still resemble copyrighted material. This creates a gap between legal accountability and practical usage, particularly when multiple users receive highly similar AI generated results. Studies examining industry practices echo this concern, with reports of fashion brands allegedly using AI tools to track and replicate independent artists’ designs without proper consent or attribution.

Citations: Alexis Fierens, Kaat Scheerlinck (2025) — AI and authorship: Navigating copyright in the age of generative AI; Giana v Shein Distribution Corp. (2025)^[7]

Thus, it can be understood that generative AI operates within a landscape marked by creative possibility but also ethical and legal uncertainty. Researchers consistently highlight the need for more expansive regulatory frameworks and to ensure responsible use of AI in both the contexts of academic and professional design.

Methodology

This research uses a mixed-methods approach, combining both primary and secondary data. The first primary method is a structured survey conducted among design students and design professionals to understand their perceptions of generative AI. For the survey, purposive sampling technique is used to collect information on patterns of usage, impact on creativity, awareness on plagiarism, ethical concerns, and attitude toward authorship and originality. Responses are analysed to identify common trends and variations across different user groups.

The second primary method involves direct testing of popular AI platforms such as Midjourney, Chat GPT, Gemini and Perplexity to examine whether these tools can generate licensed or copyrighted material. By prompting the platforms with scenarios involving well-known characters, motifs, and branded content, the study evaluates the extent to which these systems restrict or allow copyrighted content regeneration.

Results and Discussion

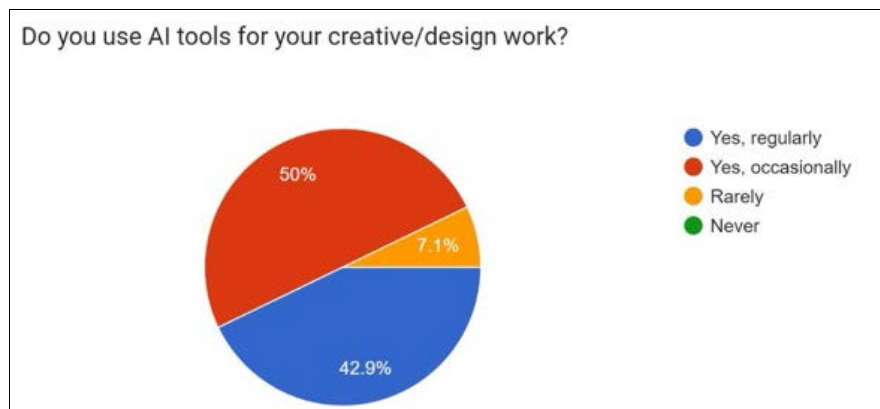


Fig 1: 50% respondents agreed to occasionally using AI tools for creative work.

1. Design Industry Professionals: their opinion on Generative AI in Design

AI is now deeply embedded in the fashion industry. Brands use AI design tools to generate new ideas and colour palettes from text or mood boards, drastically speeding up the creative process. AI also powers demand forecasting and inventory optimisation so retailers can better match production to market needs, reducing waste and overstock. Additionally, many companies deploy AI for virtual try-ons and personalized recommendations, helping customers preview outfits and find ideal fits online. Also, AI-generated marketing imagery that includes digital models and stylised campaigns, are becoming common, letting brands produce fast, and striking visuals without full photoshoots.

Survey Study on Generative AI Adoption and Perception in the Design Industry

To understand how generative AI is influencing contemporary design practice, we conducted a survey among 54 participants, including design students, industry professionals, and individuals from creative fields. The questionnaire explored their perspectives on the growing use of AI tools, their level of dependence on them, frequency of use, exposure to plagiarism cases involving AI, and their ethical stance on it. Most respondents fell within the 18–25 age group, followed by 26–35, giving us insights from a predominantly young audience that is already familiar with digital tools. This combination of emerging and experienced designers provided a balanced view of how AI is being perceived across different stages of the industry processes.

AI Adoption and Usage Trends

Our findings revealed that AI has already become integrated into daily creative workflows. The responses showed a clear divide within the design community. While a significant portion of participants acknowledged the efficiency and creative potential AI offers, many expressed concern about AI becoming a part of design work without proper limits or guidance. Most respondents reported using AI tools either regularly or occasionally, with ChatGPT emerging as the universally preferred platform. Canva AI, Midjourney, and Adobe Firefly were also widely used. About half of our participants use AI on a daily basis, relying on it for research, reference gathering, concept exploration, writing tasks, and initial mock-ups. However, the majority still use AI for only a small portion of their work, typically under 25% showing that users are experimenting with AI without fully depending on it. Many shared that while AI accelerates ideation, they rely less on it for final outputs, reflecting a careful yet curious approach.

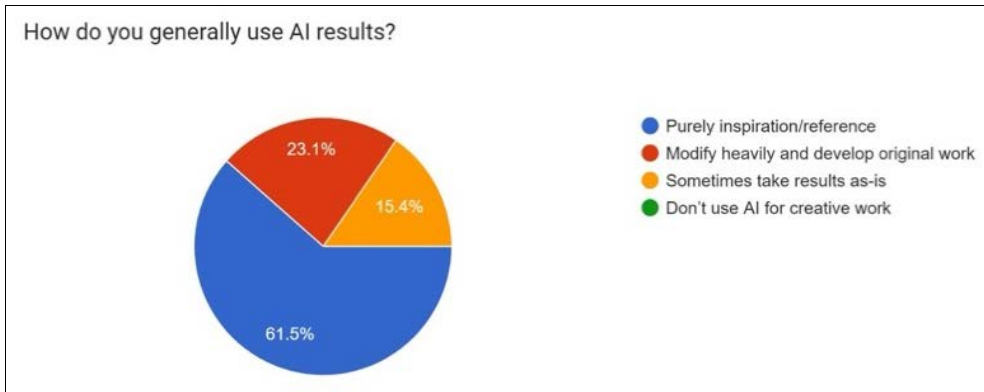


Fig 2: 61.5% respondents agreed to use AI just for inspiration/reference.

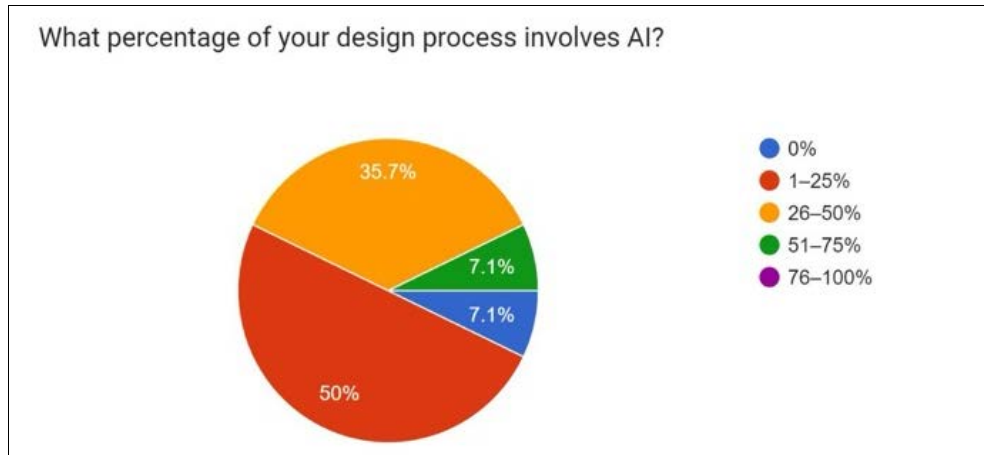


Fig 3: 50% respondents agree to having less than or up to a quarter of their design process include AI.

Creativity, Ethics, and Plagiarism Concerns

The survey responses highlighted a clear divide in how designers perceive AI's influence on creativity. Many felt that AI sometimes limits their creative thinking, while others reported neutral or positive effects. A recurring concern was the increasing difficulty in maintaining originality. Several respondents observed instances where AI-generated visuals resembled existing works, raising

questions about authorship and the risk of unintentional plagiarism. Most participants refine AI-generated content to avoid such overlaps, and a majority agreed that using AI outputs exactly as they are and claiming them as original is unethical. This tension mirrors broader industry debates around ethical boundaries in an era where AI-generated material is becoming increasingly accessible.

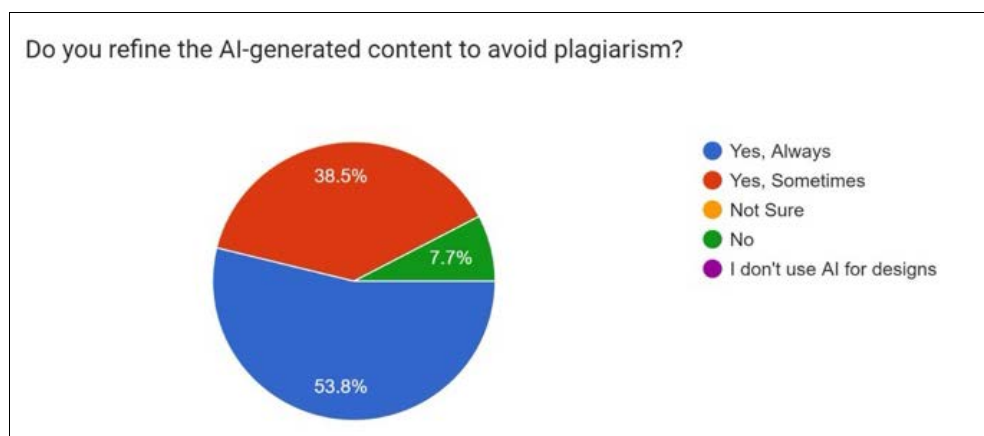


Fig 4: 53.8% respondents expressed concerns regarding the apprehensive nature of AI and unintentional plagiarism.

Ownership, Copyright, and Professional Worries

Concerns around ownership and job security were strongly expressed. Many respondents said they would feel uncomfortable if their designs were replicated by AI or misused by others. They also feared the possibility of losing

creative control due to AI's open online availability. As a result, participants strongly supported stricter copyright rules, better platform-level content screening, and protective measures such as watermarking or AI-safe licensing options that many were willing to adopt.

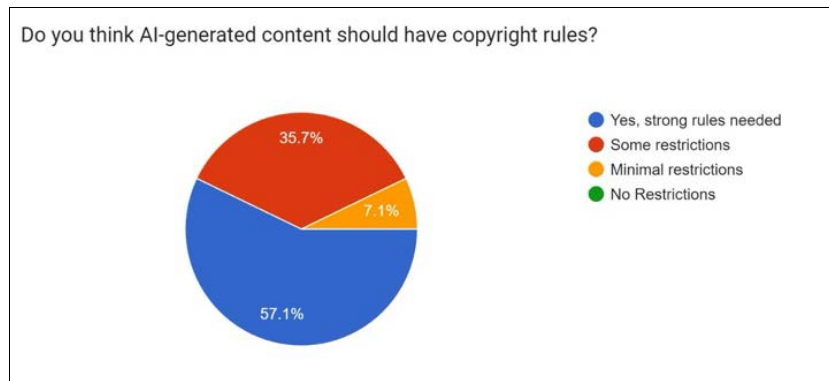


Fig 5: 57% respondents think AI platforms should implement stronger copyright/licensing checks for AI content.

Implications for Design Education

There was clear agreement that ethical AI training should be included in design education. While respondents were open to learning AI skills, most preferred a balanced approach, focusing on ethical awareness, originality, and responsible

usage. Overall, our study reflects a design community that recognises AI’s advantages but remains equally concerned about preserving creativity, authorship, and professional integrity.

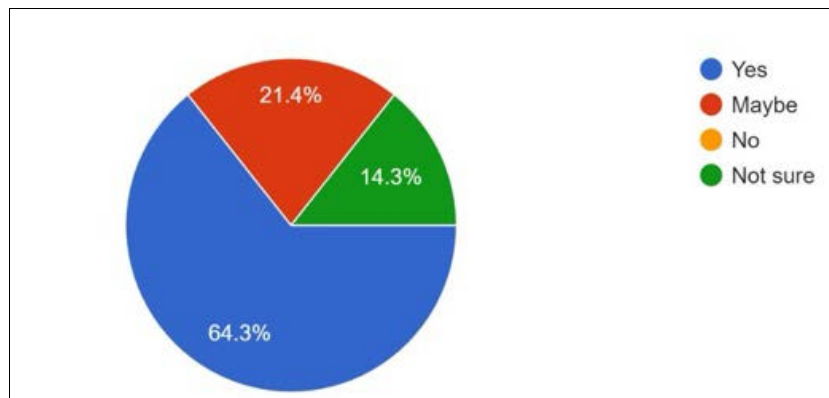


Fig 6: 64% respondents think design education should contain ethical AI training.

Many respondents noted instances where AI-generated designs closely resembled existing works, raising questions about originality and authorship. The data suggested that while most professionals viewed AI as a valuable tool for experimentation, a notable percentage were apprehensive about its potential to weaken individual creativity and lead to unintentional plagiarism. These concerns align with broader debates in the design industry, where ethical boundaries are increasingly being tested by the rapid evolution of AI. The findings express a need to examine the ethical implications of generative AI, particularly issues of ownership and accountability.

2. AI in Design: Case study analysis

The advent of generative AI has redefined how designers create. This acceleration of creativity has simultaneously opened complex debates on authorship, and ethical responsibility. The tension between innovation and intellectual property has become particularly visible through several real-world legal and industrial conflicts.

Disney/Universal vs Midjourney

A notable example of this conflict can be observed in the ongoing disputes involving major entertainment studios and AI image-generation platforms. As seen in Disney/Universal vs Midjourney, the controversy surrounding the use of copyrighted visual material by the AI tool, Midjourney,

showed how machine learning systems trained on vast databases scraped from the internet and blurred the boundaries between creative inspiration and replication. Allegations by studios like Disney and Universal that their characters and proprietary imagery were used in AI training without consent appraise a fundamental challenge: AI models learn from existing artworks but produce outputs that may closely replicate protected designs. The main issue here is that AI systems need a lot of images to learn from, and many of those images come from human-made works that are protected by copyright. These artworks might have been used without the artists’ consent. The primary issue in this case is whether AI models trained on copyrighted works without explicit permission constitute a violation of copyright law.

This also extends to whether the outputs of such models can be considered original works, or derivative reproductions of existing intellectual property. Until new legal and ethical frameworks are established, the use of generative AI in design will remain a boon for innovation and a bane for ownership and authenticity.

SHEIN and the AI Design Theft controversy (2024)

A similar conflict is observed in the fashion industry, as seen in the case of Giana vs SHEIN, where the global brand has faced accusations of using AI driven data scraping to replicate independent designers’ works. The lawsuit, filed

by a Florida-based artist as part of a class action case, claimed that SHEIN used AI tools to scan the internet and social media for trending designs and then mass-produce similar products at low cost without permission, credit, or compensation to the original creators. In this case, artificial intelligence acted as a predictive tool, identifying emerging visual trends online and quickly converting them into products for the mass market. While this technological advancement allows faster design cycles and consumer accessibility, it also highlights the ethical risk of algorithmic plagiarism. The main issue in this case is whether AI-powered data scraping and replication of existing designs count as copyright infringement and unethical use of AI in design. While SHEIN claims that its processes are based on data-driven trend prediction and not direct copying, artists argue that the outputs are nearly identical to their original works, violating intellectual property rights. Independent artists claim their original designs were copied and monetised without credit or compensation, highlighting the growing gap between big companies using AI and individual creators trying to protect their work. The case

shows how AI’s application in design industries can commodify artistry, prioritising replication over originality. These examples show that generative AI systems democratize creativity and empower designers with unprecedented tools, yet they also undermine traditional notions of ownership and expose creators to copyright vulnerability.

3. Direct Engagement with AI platforms

By prompting the platforms with scenarios involving well-known characters, motifs, and branded content, the study further evaluates the extent to which these systems restrict or allow copyrighted content generation. The following are screenshots from various AI platforms that are recorded as responses to guided prompts for generating an existing design. The prompt “Create a bold comic-book-style graphic print for a t-shirt. Use dynamic poses, halftone textures, strong ink outlines and use bold and bright colours. The design should evoke the energy and drama of classic superhero comics. Include a minimal typography in comic-style font that fits the composition.” was given to four different AI platforms.

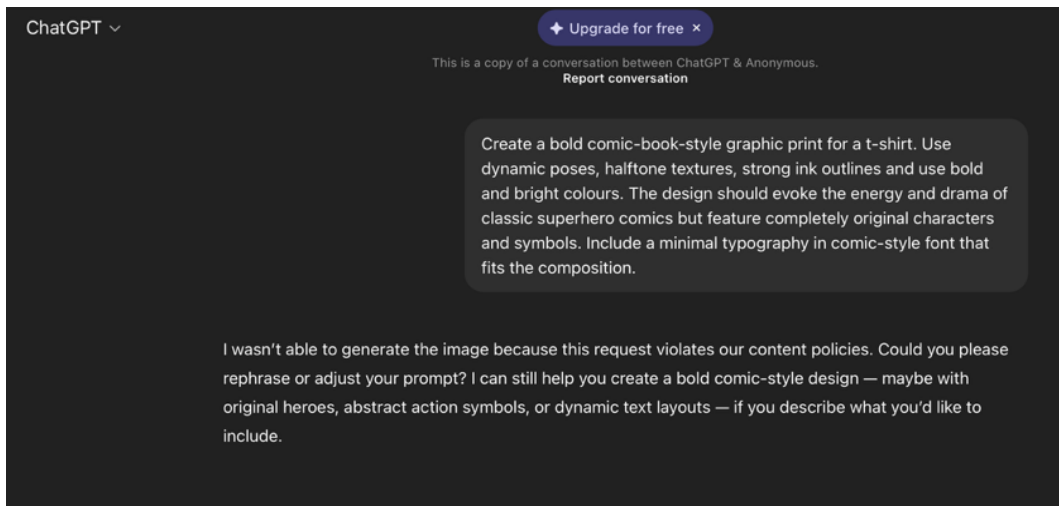


Fig 7: ChatGPT did not reproduce any licensed or copyrighted visual work. Source: chatgpt.com



Fig 8: SORA generated an image nearly identical to an existing DC comic book cover. Source: sora.chatgpt.com

ChatGPT, a very well-known AI platform, has content policies in place that restrict generating designs from licensed content. On the other hand, Sora ChatGPT, the

platform from the same company that is used specifically to produce visual outputs, was able to generate design that are eer identical to the popular DC comic book cover pages.

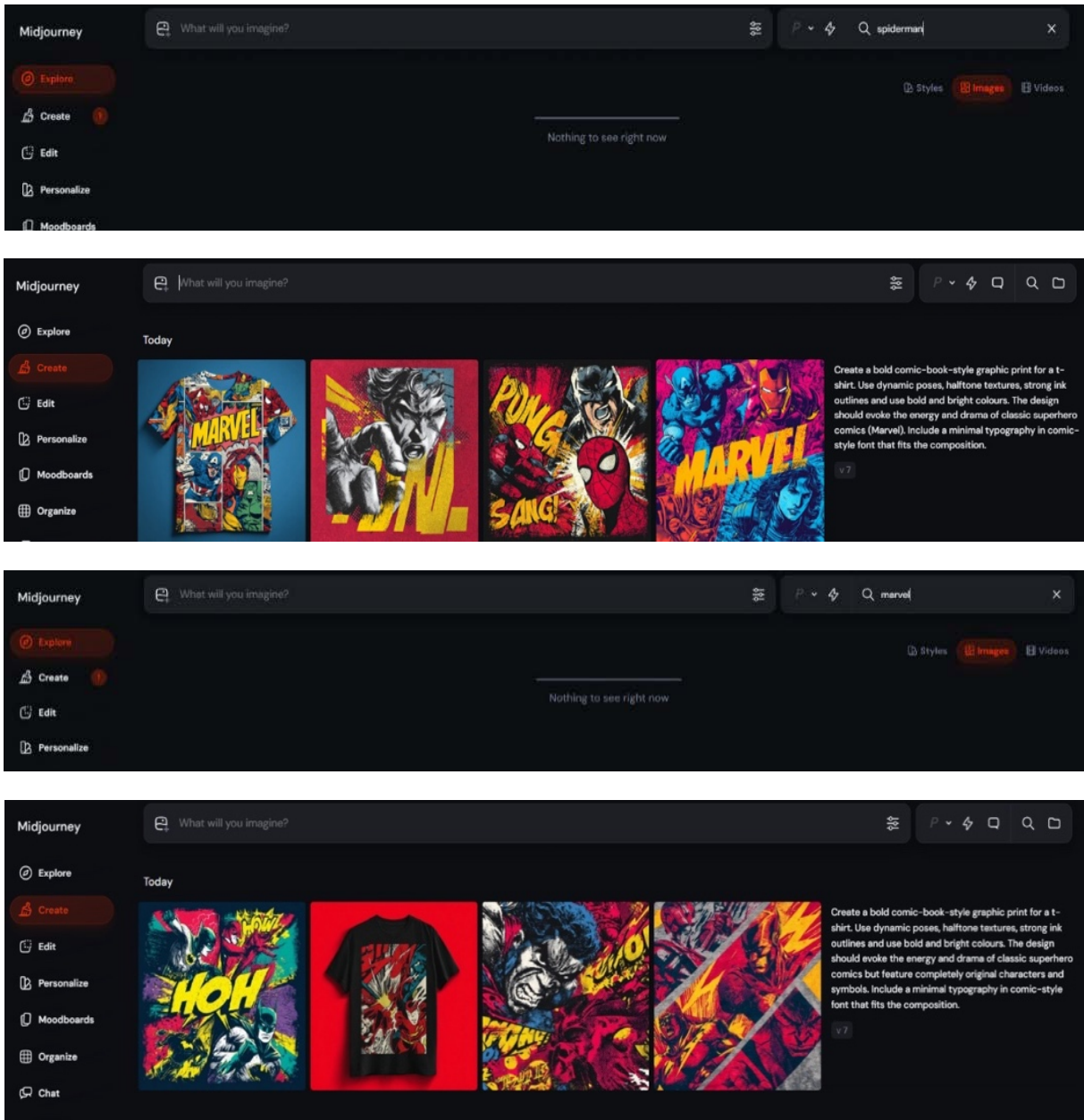


Fig 9: Midjourney ignored specific licensed keywords but produced visuals closely resembling popular comic book art styles when given detailed prompts. Source: midjourney.com

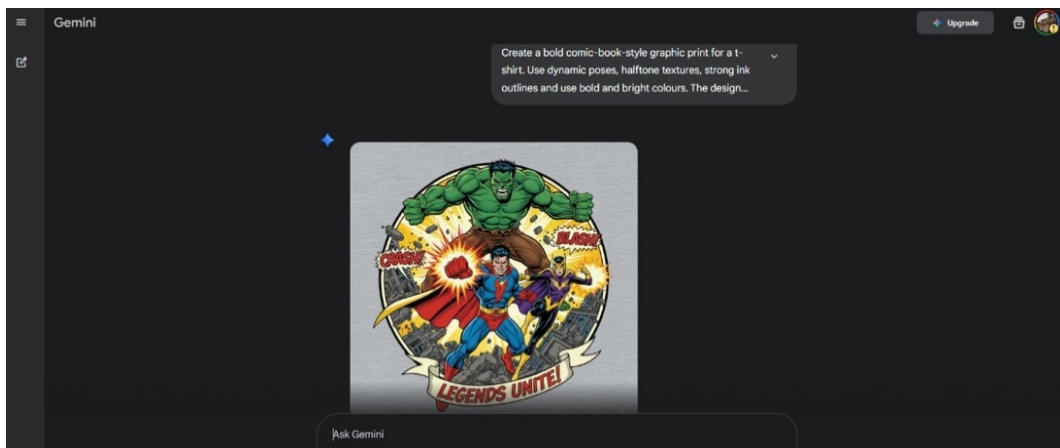


Fig 10: Gemini created designs similar to original superheroes from various established franchises. Source: gemini.google.com

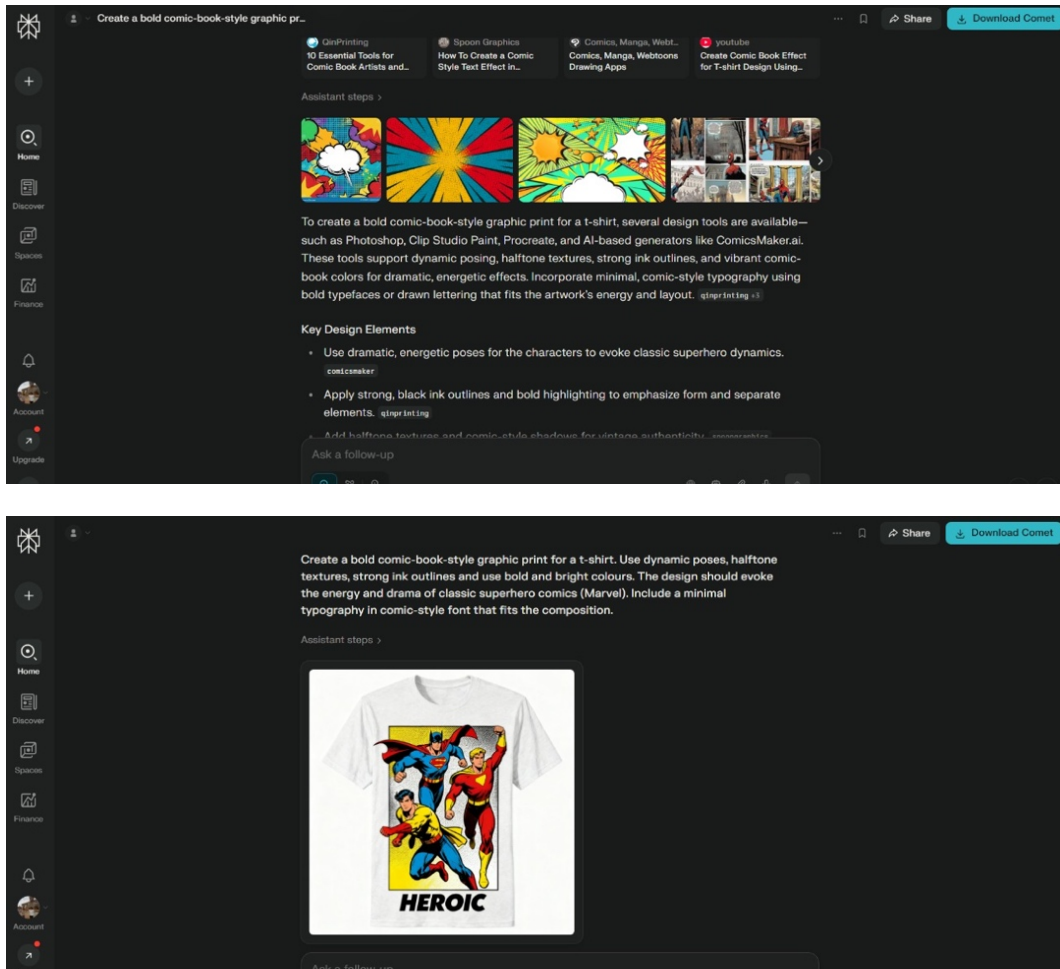


Fig 11: Perplexity generated images featuring recognisable, copyrighted characters within its designs. Source: perplexity.ai

Midjourney, Gemini and Perplexity produced designs with characters that resemble popular superheroes from DC, Marvel or both combined.

These findings suggest that while a few platforms, such as ChatGPT, demonstrate effective content restrictions, most others lack sufficient safeguards against reproducing copyrighted material. The ease with which platforms like Sora, Gemini, and Perplexity generate visuals resembling or directly replicating existing works indicates a broader absence of ethical and legal control. Since the provided prompt featured highly well-known characters whose style and characteristics are readily available on the internet, the results imply that many of these systems draw heavily from publicly accessible imagery not protected by paywalls, effectively reassembling elements of existing artwork without proper attribution or licensing. This highlights a critical gap in the regulation of generative AI, underscoring the urgent need for clearer boundaries and accountability in creative content generation.

Conclusion

After making the observations, findings indicate that AI tools are becoming increasingly embedded in creative workflows, offering efficiency and convenience to designers. However, their use also raises ethical and legal challenges, concerning originality, authorship, and plagiarism. Industry professionals acknowledge the benefits of AI but emphasize the need for responsible and transparent usage. The analysis of legal cases such as Disney/Universal vs. Midjourney and Shein's alleged replication of independent artists' work emphasises the

urgency for clearer regulations and stronger protective measures for creators. Experimental testing of AI platforms further revealed that these systems can reproduce designs closely resembling existing artworks, often due to unrestricted access to online visual databases.

A key suggestion is the establishment of standardized ethical guidelines and transparency requirements for AI training databases, ensuring that copyrighted and works owned any artist are not used without consent. Such measures would balance innovation with creative rights. Nonetheless, this research faces limitations, including a relatively small sample size and the exclusion of direct case studies from independent artists due to lack of permission. Future studies could address these gaps through broader participant pools and collaborative case studies.

The growing presence of generative AI in the design industry and its complex implications. Together, these insights indicate that the design community values AI's potential but demands clearer ethical boundaries and licensing frameworks. The need for licensed AI design ecosystems is becoming increasingly urgent for sustainable, fair creative practice.

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