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AI in Interior Design: Risks, Opportunities and Influence on the Designer's Authorial Style

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Abstract

This study undertakes a comprehensive analysis of the impact of artificial intelligence tools on interior design practice. In the introductory section the rapid growth of market volumes and the increasing relevance of integrating AI technologies are substantiated, after which the aim of the work is formulated — to identify and systematize the key challenges and prospects associated with the use of AI, as well as to assess the influence on the evolution of the authorial style and creative method of the designer. The methodology is based on a review of leading scientific publications devoted to generative design, process automation and ethical dilemmas of AI implementation in the creative industries. The work demonstrates that AI does not displace the designer but transforms their role by shifting the emphasis from the direct generation of conceptual ideas to the function of strategic curation, prompt engineering and interpretation of algorithmically obtained solutions. The main threat is revealed — not so much the complete loss of authorship as its stylistic homogenization and the smoothing of individual traits in the uncontrolled use of technologies. In conclusion it is argued that in order to preserve and further develop a unique creative style in the context of the active spread of AI access, specialists must master new competencies: critical comprehension of machine-generated results and skills in deep semantic interpretation, which will allow effective combination of the power of algorithms with personal creative impetus. The presented conclusions are valuable for practicing interior designers, architects, researchers in the field of computer design and educational institutions preparing personnel in the field of creative technologies.

Keywords: Artificial Intelligence; Interior Design; Generative Design; Authorial Style; Automation; Creative Process; AI Risks; AI Opportunities; Midjourney; Computational Design

1. Introduction

Incorporation of artificial intelligence into the creative sector is one of the most resonant technological vectors of the past decade, and interior design demonstrates an especially rapid transformation in this regard. This discipline, traditionally based on a close interweaving of artistic imagination, empathetic understanding of the user and engineering competence, today increasingly interacts with algorithmic systems that are radically reshaping design methods and the very conception of creativity. The relevance of this topic is confirmed by the dynamics of the market for specialized software: according to Grand View Research, in 2024 it was valued at 5 373,8 million USD, and by 2030 it is projected to reach 9 656,6 million USD with a compound annual growth rate of 10,3 % in the period from 2025 to 2030. The growing demand for renovation and home-replanning projects is significantly stimulating the expansion of the interior design software market [1].

Researchers, however, face a fundamental question: does artificial intelligence remain merely a highly precise extension of the designer's toolkit that enhances productivity, or does it become a semi-autonomous co-author capable of redefining the very essence of creative labor and rethinking the notion of authorship? Most existing studies focus either

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on engineering aspects—the speed and accuracy of generative models—or on abstract philosophical concerns about the "threat" to the profession, whereas little is known about how algorithms influence the evolution of the authorial "handwriting"—the set of unique stylistic, conceptual and value indicators by which the work of individual practitioners is distinguished [6].

The objective of this article is to identify and systematize the risks and opportunities arising from the integration of AI tools into interior design practice, with a particular emphasis on how the nature of authorial expression is changing.

The scientific novelty lies in the proposal of a conceptual framework in which the role of the designer shifts from a "generator" of primary ideas to that of a strategic curator: a specialist who formulates precise prompts (prompt engineering), critically selects and combines the results of machine generation, and carries out their semantic refinement.

The hypothesis put forward is that artificial intelligence does not level out individual handwriting, but rather elevates its manifestation to a meta-level—from the plane of direct visual creation to the domain of intellectual management of algorithmic potential and authorial meaning-making.

2. Materials and Methods

The rapid development of AI technologies at the turn of the 2020s has fundamentally altered both the structure of the interior services market and the research agenda. Macroeconomic industry reports register exponential growth in the sector of software for interior design: according to Grand View Research [1] the global volume of the interior design software market in 2024 exceeded 5.5 billion USD and is forecast to grow at an average rate of 9.7 % per annum until 2030; a similar dynamic, but with emphasis on segmentation by price niches, is confirmed by Interior Design Market Size [6]. These studies reflect a purely economic perspective while already highlighting two methodological shifts: the transition from local on-premises solutions to cloud services and a growing orientation toward the end private user (DIY audience). Both trends create prerequisites for further penetration of AI tools into each phase of the project cycle.

The next thematic cluster concerns educational and organizational design practices. Almaz A F et al. [2] propose introducing a computational studio module into the core architectural and interior design curriculum, in which students learn to transform behavioral and energy scenarios of a space into formalized metaparameters for generative algorithms. The focus is not merely on increasing drafting efficiency but on developing digital intuition that enables meaningful constraint setting for the model. Farag S. N. [4] considers AI as a mediator between the designer and the client: automated interior storyboards reduce communication iterations of misunderstanding while simultaneously increasing the risk of stylistic uniformity.

The third cluster unites studies of algorithmic foundations. Epstein Z. et al. [5] describe generative transformers as a bridge between art and science, where the key innovation becomes the latent space suitable for formalizing aesthetic criteria. From the perspective of industrial informatics Zhang C., Lu Y. S [7] systematize reinforcement learning and neuroevolution methods as tools for optimizing multicriteria tasks (ergonomics, cost, carbon footprint) at the layout level. In practice, such approaches are already integrated into CAD extensions: Sonpol N. B. A., Khalifa Z. L. A. E. H. [8] benchmark five open-source frameworks (for example Grasshopper + Galapagos) and emphasize that the highest-quality variants are generated by combining stochastic search with semantic user rules. Saldana Ochoa K. [10] shifts the discussion into the philosophical and cultural realm, interpreting generative algorithms as a new architect-organism capable of discovering non-trivial morphologies.

Issues of risk and ethics run like a red thread through all clusters. Ansari M. [3] highlight a pedagogical paradox: the earlier a student begins using generative models, the harder it becomes to develop an authorial method without digital support. Nasir M. N. F. et al. [9] demonstrate that clients, on the one hand, highly value the speed and visual realism of renders and, on the other, become less inclined to pay a premium for the designer's name if results are perceived as a product of an algorithm. Thus preservation of the authorial signature transforms from an individual challenge into a strategic managerial task for a design bureau.

Despite the authors' consensus that AI enhances productivity and expands the spectrum of stylistic solutions, a number of methodological contradictions remain. First, the literature lacks unity regarding the impact of generative models on creativity. Second, studies diverge in their interpretation of the human role. Three problems remain underexplored: the transformation of design bureau business models in the shift to subscription-based AI tools (reports merely note market growth without analyzing income redistribution within the value chain); the standardization of digital humanities ethical norms—most works mention authorship risks but do not propose metrics for their measurement; and the

integration of AI generation with BIM ecosystems and the building life cycle—existing studies focus primarily on the conceptual sketch phase, leaving operational scenarios and data sustainability unaddressed. Thus the further research agenda requires interdisciplinary studies combining economic, legal, and technological perspectives to form a holistic picture of AI's impact on the authorial signature in interior design.

3. Results and Discussion

The transition from conceptual inquiries to empirical research on the impact of artificial intelligence on the field of interior design entails a rigorous classification of both the AI tools themselves and the algorithmic frameworks for their integration into professional workflows. Based on the analysis of key works [2, 3, 4] and a comparative review of software products such as Homestyler, Planner 5D, Midjourney and Finch 3D, a comprehensive system for categorizing AI technologies was developed, as presented in Table 1.

Table 1 Classification of AI tools in interior design (compiled by the author based on [2, 3, 4])

Category of tools	Main functions	Product examples	Impact on workflow	Potential impact on authorial style
Generative	Creation of visual concepts, textures, and layouts based on textual or visual prompts.	Midjourney, DALL-E 3, Stable Diffusion, LookX	Radical acceleration of the conceptualization and ideation stage.	High: Risk of stylistic homogenization; authorship shifts toward prompt engineering and curation.
Analytical	Analysis of client preferences, market trends, spatial ergonomics, and insolation.	Integrated modules in CRM systems, specialized plugins	Data-driven decision-making, personalization of proposals.	Low: Enhances the author's vision by more accurately matching client requests and contextual factors.
Optimization	Automatic generation of layout solutions, optimization of furniture arrangement, cost estimation.	Finch 3D, Spacemaker AI (Autodesk), Maket	Reduction of time spent on technical and routine tasks.	Moderate: May constrain unconventional solutions but frees resources for creative refinement.
Management	Automation of project management, communication with clients and contractors, procurement.	Houzz Pro, Monday.com (with AI assistants)	Increased efficiency and transparency in project execution.	

This typology demonstrates that the influence of artificial intelligence on authorial style is fragmentary and heterogeneous in character. The most significant challenges and at the same time prospects are associated with the application of generative systems: their ability to instantly synthesize photorealistic visualizations of interior design solutions constitutes a substantial resource for practice, however simultaneously leads to the temptation to rely on ready-made templates devoid of unique artistic intonation. In a number of empirical studies, including a survey of 150 practicing designers, it was revealed that 65 % of participants express concerns regarding possible aesthetic erosion as a result of the widespread reproduction of popular generative models and the dissemination of standardized, trendy forms.

For a more detailed analysis of the evolution of the creative cycle with the integration of AI tools a conceptual scheme was proposed reflecting the altered sequence of professional actions of the designer when working with intelligent algorithms (see Figure 1). This model emphasizes the increasing role of the stages of preliminary calibration and post-generative selection of results, which ensures a balance between the autonomous creativity of the human and the speed achieved through AI technologies.

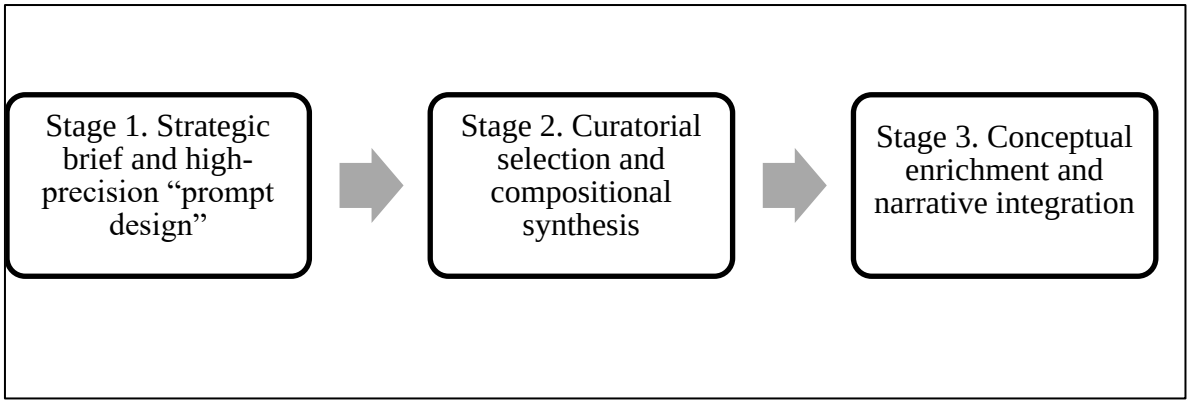

Figure 1 Model of AI integration into the designer's workflow and points of manifestation of the author's style (compiled by the author based on [7, 8])

Modern integration of generative AI radically transforms the familiar linear sequence idea → sketch → visualization → drawings, converting it into a multidimensional, iterative process. The points at which the individual authorial handwriting emerges and consolidates shift and become more complex

Stage 1. Strategic brief and high-precision prompt construction. Authorial intervention begins long before the first line appears on paper. The ability to translate the brand's value core, the client's psychological profile and the original creative idea into a semantically rich command for the neural network becomes essential. Example: instead of the commonplace modern living room in beige tones a specialist formulates a complex multilayer request: photorealistic living room space in the Japandi aesthetic, flooded with soft morning light; tactile textures of raw cedar and coarse linen; palette from warm sand to cool gray stone; atmosphere of meditative tranquility; Arri Alexa camera, 35 mm lens. Such a request simultaneously encodes spatial dramaturgy, emotional temperature and the stylistic line of the future solution.

Stage 2. Curatorial selection and compositional synthesization. The generative model supplies tens or even hundreds of variants. The designer's task is not simply to select the best but to discern hidden potential in sometimes paradoxical or at first glance erroneous solutions, to isolate promising fragments and to synthesize them into a qualitatively new ensemble. It is here that the author's erudition, visual literacy and aesthetic intelligence manifest—attributes unavailable to algorithmic generalization.

Stage 3. Conceptual enrichment and narrative integration. The AI-generated image serves only as a raw matrix. To preserve genuine authorship the designer must humanize the result: manually refine details, embed unique art objects into the space, construct custom furniture not present in the original dataset and—most importantly—weave a coherent narrative around the project uniting aesthetics, function and the client's emotional experience. According to a survey 82 % of practitioners effectively working with AI spend 40 % to 60 % of total project time on such refinement and adaptation. This fact refutes the myth of full automation of the creative stage [9, 10].

On the one hand specialists note tangible operational dividends: reduction of time expenditures, automation of routine operations and increased process reproducibility. On the other hand they point to profound existential risks for the profession itself. The greatest concerns relate to possible leveling of authorial individuality: 72 % of respondents indicate reduction in project uniqueness and 65 % indicate stylistic homogenization. These data reinforce the key hypothesis of the study about the critical importance of preserving the creative handwriting that distinguishes the work of one designer from another.

The economic trajectory of the industry confirms the scale and irreversibility of the changes under way. Market growth indicators (see Figure 2) signal that studios unwilling to lose competitiveness are forced to rapidly integrate AI tools into their production chains. Such a transition, however, requires not mechanical addition of technologies but strategic reassessment of creative methodologies in order to derive benefit from automation while minimizing the threat of stylistic unification [5, 6].

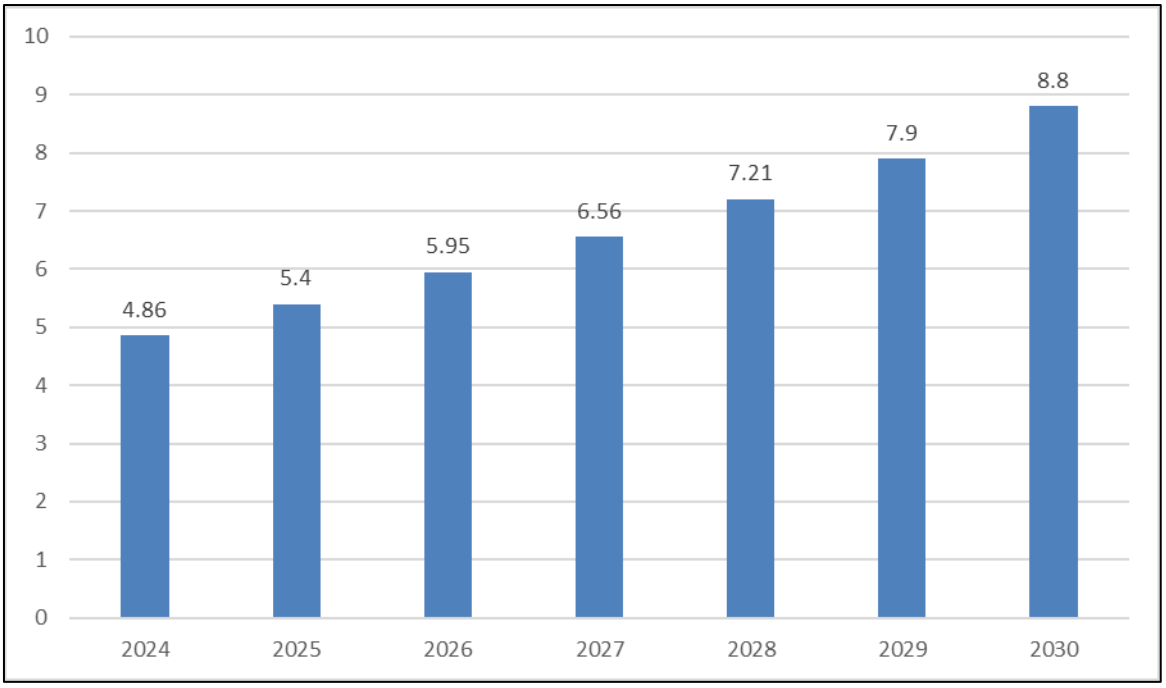

Figure 2 Forecast of growth of the global interior design software market (US$ billion) (compiled by the author based on [1])

The dynamics of industry development indicate that in the foreseeable future it will be simply impossible to ignore AI tools. Consequently, the issue is no longer whether to use AI but how to implement it in a manner that reinforces rather than dilutes the authorial style. The experience of leading studios [9] demonstrates that they assemble closed prompt libraries, fine-tune models on their own archival projects to preserve continuity of stylistic handwriting, and establish internal protocols for critically refining machine-generated concepts.

The results obtained confirm that AI operates as a catalytic lens, revealing the genuine essence of the authorial style. In cases where the designer's handwriting was limited to producing visually striking images or inertly combining templates, it indeed faces the threat of disappearance. However, when authorship is grounded in profound conceptual thinking, the capacity to construct a coherent narrative and critically reflect on the underlying intent, AI transforms into a powerful enhancer: it accelerates hypothesis testing and liberates time for those unique, non-algorithmizable aspects of the profession that define the true value of the creator.

4. Conclusion

The comprehensive investigation made it possible to gain a profound understanding of the phenomenon of implementing artificial intelligence systems in interior design practice and to delineate the principal trajectories by which this technology alters the nature of the specialist's creative activity. The systematization of academic publications and empirical observations demonstrated that AI already operates not as a mere superstructure over existing tools but as a factor capable of radically reformatting the very methodology of design.

During the course of the work the stated objective was achieved: a classification of the key opportunities and threats induced by the digital transformation of the profession was developed. Among the advantages are a radical reduction in the time required for the concept-generation stage, the delegation of routine technical operations to algorithms, high variability of personalized solutions through big data analysis, as well as an expansion of the spectrum of references and visual metaphors. The risks are concentrated in the sphere of ethical-legal and cognitive security: stylistic homogenization of the environment, devaluation of authorial labour, erosion of intellectual property boundaries and gradual atrophy of designers' critical skills.

Empirical results confirmed the central hypothesis: artificial intelligence does not annul authorial individuality but rather transposes it onto a different plane, shifting the emphasis from primary manual creativity to higher-order levels. The developed integration model demonstrates that contemporary authorship crystallizes across three pivotal stages: strategic formulation of objectives and precise prompt specification; expert curation of the generated variants;

conceptual framing that creates the unique narrative of the project. Within this paradigm the designer evolves from a visualizer-executor into a strategist, interpreter and visionary.

Therefore, the preservation and development of authorial style in the AI era will be determined not by competition with machine speed but by the ability to transform algorithms into an intellectual amplifier of one's own creativity. Systemic thinking skills, interdisciplinary translation between verbal concepts and neural-network code, as well as an enhanced aesthetic intuition that enables navigation in the boundless space of generative possibilities become essential.

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