From Programmer to Composer: A Survey of Creative Authorship in the Age of AI

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Abstract. *This article explores the transformation of musical authorship in the age of artificial intelligence, reframing the composer as a mediator between code, sound, and agency. Drawing from perspectives in composition, programming, philosophy, music theory, and technological design, the paper examines how AI systems redistribute creative labor and challenge traditional models of authorship. Through analytical reflection and case studies, it argues for a posthuman, systemic understanding of composition one grounded in ethical design, cultural responsibility, and technological transparency. Rather than displacing the human composer, AI invites a redefinition of authorship as collaborative, distributed, and evolving.*
Keywords: Artificial Intelligence in Music, Creative Authorship, Algorithmic Composition, Posthuman Aesthetics, Music Technology and Ethics

1 Prelude to Transformation: Rethinking Authorship in an Age of Artificial Creativity

1.1 The Disruption of Traditional Authorship

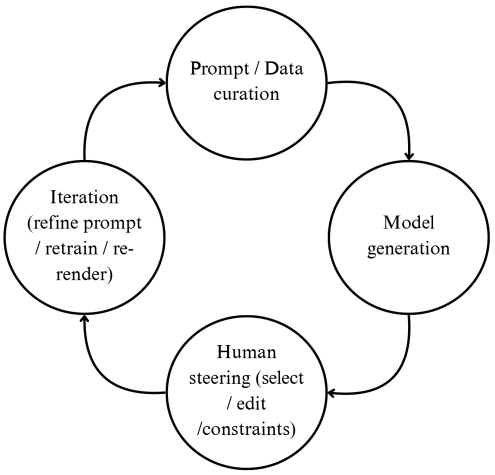
The integration of artificial intelligence (AI) into creative musical domains marks a paradigmatic shift in how authorship, creativity, and ownership are conceptualized. Traditionally, authorship in music has been inherently human, defined by intentionality, emotional expression, and culturally embedded meaning. However, the capacity of AI systems especially those utilizing generative adversarial networks (GANs) and deep learning models to autonomously create music with stylistic coherence and aesthetic complexity challenges this human-centric paradigm [1, 2].

This shift raises urgent philosophical and legal questions. If a machine, trained on vast corpora of human music, generates a composition independently, who qualifies as the author? This query is not merely theoretical it unsettles existing structures of intellectual property law, which predominantly recognize human agents as the sole bearers of creative rights [3]. The current frameworks fail to accommodate co-creative processes involving non-human actors, necessitating a reevaluation of ownership, agency, and recognition in digital music production [4]

1.2 From Creation to Collaboration: AI as Co-Composer

A significant development emerging from this landscape is the conceptual repositioning of AI from a mere tool to a collaborator in the compositional process. Studies demonstrate how AI systems can suggest motifs, complete phrases, and even generate full works in stylistic dialogue with the human composer [5]. This co-creative paradigm introduces the notion of shared authorship; whereby creative agency is distributed between human and machine actors. The composer no longer solely dictates form and content but designs and navigates dynamic interactions with generative systems.

Such collaborative practices necessitate the expansion of the composer's identity to include roles more traditionally associated with engineering, system design, or curatorial mediation [6]. The act of authorship becomes less about determining every musical parameter and more about orchestrating the creative potential of a hybrid system [7].



- **Prompt/Data:** Define goals, constraints, references; check data rights.
- **Model generation:** Render candidates; parameters/seed noted for reproducibility.
- **Human steering:** Select, edit, constrain; document rationale.
- **Iteration:** Update prompt or data; loop until musical intent is met.

Figure 1: Human-AI co-composition loop

1.3 Emotional Authenticity and Societal Reception

One of the most contested dimensions of AI-generated music concerns emotional authenticity and listener perception. Although AI can produce compositions that emulate stylistic markers of emotion, it lacks first-person subjective experience. This absence fosters skepticism among

listeners, who often display bias against works identified as AI-generated [8]. The resulting disjunction between technical sophistication and perceived authenticity has ethical and aesthetic consequences, potentially marginalizing AI-generated works within cultural discourse [9].

The societal impact of this perception bias is non-trivial: it shapes market reception, audience trust, and ultimately, the creative decisions of composers working with AI [10]. Hence, the legitimacy of AI-involved authorship is not only a matter of legal recognition but also of cultural acceptance and ethical negotiation.

1.4 Reframing the Future of Musical Authorship

The evolving relationship between humans and AI in music demands a holistic redefinition of authorship. Rather than viewing AI as a threat to human creativity, scholarship increasingly positions it as an amplifier of human potential-opening access to new forms of expression, sound design, and compositional methodologies [5]. This shift also calls for interdisciplinary engagement across music theory, computer science, law, philosophy, and pedagogy to address the complex challenges of co-authorship and creative legitimacy.

This article investigates the transformation of the composer's identity in the age of AI-not to declare a fixed answer, but to explore the multiplicity of roles and responsibilities now entangled in creative musical authorship. As the boundaries between composer, programmer, and machine blur, we must ask not only who creates, but also how, with whom, and under what ethical and cultural conditions.

2 Methodology

This survey reviews peer-reviewed academic literature, conference proceedings, and select preprints published between 2010 and 2025, with seminal pre-2010 works included, with a focus on works addressing AI, algorithmic composition, creative authorship, and human-computer collaboration in music. Sources were identified through database searches (Google Scholar, IEEE Xplore, Web of Science, Scopus) using keywords including AI music, algorithmic composition, machine learning music, creative authorship, human-AI collaboration, and music copyright AI. Reference lists in key papers were also mined. Included works represent diverse genres and technical approaches, but the majority focus on Western art, electronic, and pop music contexts, reflecting the prevailing emphasis in the literature. Studies or systems were included if they (1) introduced novel technical approaches for AI-generated music, (2) provided empirical or perceptual studies on authorship or creativity, or (3) addressed legal, ethical, or educational implications of AI in music. Excluded were non-academic blogs, opinion pieces, and patents.

2.1 Scope and Limitations

This survey primarily covers AI music research and systems published in English and centered on Western musical traditions. While some studies addressing Chinese and global perspectives are included, non-Western and folk music systems are underrepresented, reflecting the available literature. Commercial, open-source, and academic systems are all discussed, but due to rapid technological development, some recent proprietary advances may not be fully captured. The focus is on systems where AI plays a direct generative or co-creative role; music information retrieval, audio effects, and performance-focused (but not compositional) AI are not the primary emphasis.

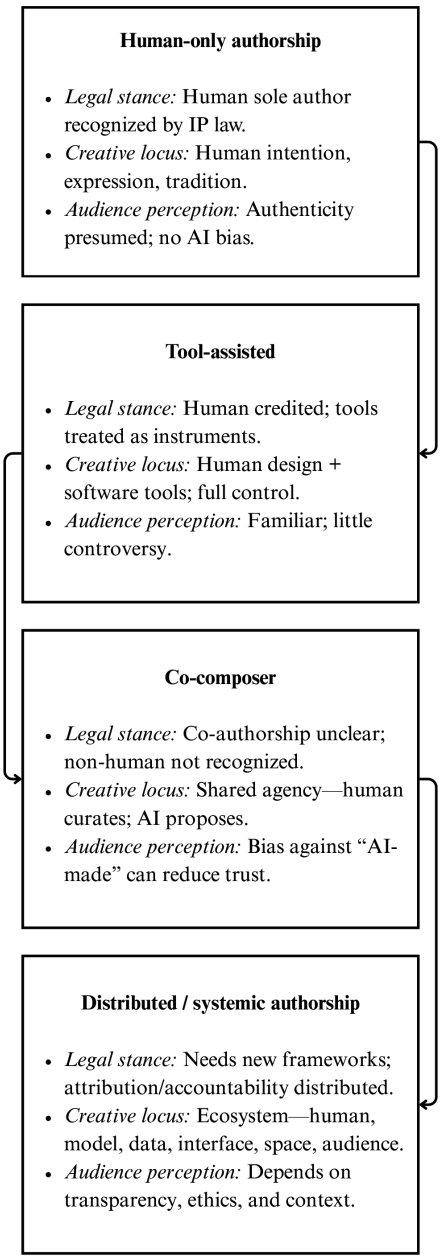


Figure 2: Evolution of musical authorship.

3 From Score to System: The Composer as Architect of Possibility

3.1 Recasting the Composer's Role

The evolving integration of artificial intelligence (AI) and digital systems into musical composition necessitates a

fundamental shift in how the role of the composer is conceptualized. No longer confined to the traditional task of crafting scores or directly notating sound events, the contemporary composer increasingly operates as a designer of interactive frameworks, computational environments, and generative processes. This transformation is particularly evident in the context of electroacoustic and technologically mediated music.

In modern compositional practice, composers often design constraints, establishing interactive parameters through which sound can be explored and generated [11]. This redefines composition as an act of structuring possibilities rather than prescribing fixed outcomes. The composer thus assumes the role of an architect of sonic systems-one who shapes the behavior and potential of digital instruments rather than dictating their precise output [12].

3.2 Composing Instruments, Not Just Music

This reorientation of authorship also reflects the increasing importance of instrument design in contemporary compositional thinking. The boundary between composition and digital instrument creation becomes porous when composers build the very interfaces or systems that will interpret, modify, or generate sound. This synthesis of composition and technology is seen in the development of interactive music systems that allow real-time engagement, sonic manipulation, and audience participation [12].

In many projects, composers engage with spatial sound design in open environments, designing multichannel systems that embed composition within both physical and technical architectures [13, 14].Here, composition transcends the page or DAW (digital audio workstation) and becomes embedded in physical, temporal, and technological contexts.

3.3 Designing with Intelligence: The Composer and AI Systems

Artificial intelligence further amplifies this systemic model of composition. The emergence of co-creative AI systems invites composers to construct frameworks in which algorithmic processes participate in the aesthetic decision-making. These systems often operate through adaptive interactions, learning from the composer or environment and contributing novel material based on those patterns [15].

This interaction positions the composer as a facilitator of human-machine dialogue. Rather than authoring each note, the composer curates data, tunes model parameters, and interprets outputs-decisions which constitute a new kind of authorship, one centered on steering and shaping rather than directly scripting the final result [15]. This leads to a profound reevaluation of creative agency: is the act of system design itself an artistic gesture? If so, what kinds of knowledge and intuition does it require?

3.4 Participatory and Distributed Creativity

In this emerging paradigm, creativity is also distributed across systems, users, and environments. In musical contexts, participatory design has gained prominence, with users, performers, and composers co-constructing the sonic output [16]. These de-centers the composer's singular voice and invites new understandings of authorship as relational, processual, and open-ended.

From this perspective, the composer no longer controls the entire musical structure but cultivates conditions for interaction, emergence, and evolution. Whether through audience engagement, machine co-creation, or spatial systems, authorship becomes a negotiation, a choreography of agency among human and non-human actors.

4 Code as Composition: Algorithms, Authorship, and the Sonic Machine

4.1 The Emergence of Algorithmic Authorship

The historical trajectory of computer music reveals a profound and ongoing convergence between programming and musical composition. Since the pioneering work of Max Mathews with the MUSIC-N software and Lejaren Hiller's Illiac Suite, the act of coding has functioned not only as a means of controlling sound synthesis but as a compositional gesture in itself [17]. Through algorithmic systems, composers-programmers began to delegate musical decision-making to structured processes, embedding aesthetic intentions into code-based instructions.

This compositional logic has evolved alongside computational power. As systems have become more interactive and generative, the act of writing code has come to mirror the function of writing a score-except the performer is no longer human, but algorithmic [11, 18]. The algorithm becomes a procedural embodiment of compositional logic, capable of generating new material and modifying its own behavior based on internal rules or external data streams.

4.2 Generative Processes and the Shift from Control to Emergence

Programmatic music systems emphasize emergence over explicit control. For example, genetic algorithms, as implemented in projects like GenJam [19], use iterative learning and mutation to develop musical outputs over time. These systems foreground a compositional philosophy grounded in processual evolution rather than preordained structure, thereby reconfiguring the composer's role from that of a planner to that of a system initiator and steward.

In this mode of practice, the boundary between the programmer and the composer collapses. The act of algorithmic design, of choosing functions, setting constraints, and shaping interactions, becomes the core site of creative labor. Contemporary deep-learning systems for music generation not only automate but also transform musical ideation by introducing structural behaviors that may be unforeseeable to the human creator [20].

4.3 Software as Creative Partner

The use of AI-infused programming environments, particularly those involving deep learning and symbolic representation, introduces software itself as a quasi-creative

agent. For example, systems trained on symbolic data can generate music that aligns with emotional cues, compositional norms, or even culturally distinct styles [21]. In these contexts, the programmer-composer must relinquish deterministic control in favor of strategic guidance-shaping datasets, parameterizing models, and interpreting outputs.

This repositioning of authorship transforms the creative act into a form of design curation. The programmer is no longer a neutral technician but becomes a conceptual co-creator whose influence is inscribed into every stage of the generative pipeline-from data pre-processing to output evaluation [18]. Authorship is embedded not in the surface of the music alone but in the architecture of the system itself.

4.4 The Ethics of Computational Creativity

This entanglement of human and machine agency requires reflection on the ethical dimensions of algorithmic authorship. Existing intellectual property frameworks are ill-equipped to address the ambiguity introduced by non-human generativity [22, 23]. If compositional agency is shared across human-coded systems and learning algorithms, then questions arise not only about ownership but about accountability, originality, and attribution.

Moreover, framing software as a creative tool obscures the politics of authorship, labor, and aesthetic value [24].Programmers who embed cultural assumptions into systems, or who curate the data that shapes generative models, may unintentionally encode bias, stylistic limitations, or ideological frames that reproduce themselves in the musical output. Thus, to program compositionally is also to operate within an ethical matrix of choices with tangible aesthetic consequences.

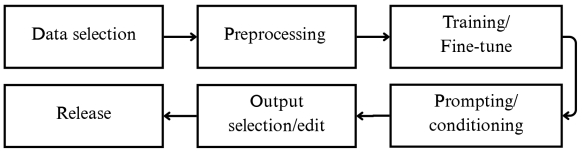


Figure 3: Code as composition

5 Posthuman Polyphonies: Creativity, Agency, and the Ethics of the Non-Human Artist

5.1 Rethinking Authorship Beyond the Human

The rise of artificial intelligence (AI) in musical creation challenges the anthropocentric foundations of artistic authorship. In traditional frameworks, the composer is understood as a singular human subject who exerts creative control over the aesthetic domain. However, the capacity of AI systems to learn stylistic patterns, generate complex music, and interact dynamically with human inputs complicates this view, prompting a philosophical shift toward posthuman and distributed models of creativity [2].

This shift aligns with emerging theories of posthumanism that decenter the human as the exclusive source of meaning and agency. Authorship is no longer a fixed ontological category but a fluid site of negotiation among biological, mechanical, and algorithmic agents [25]. In this context, composition becomes a co-emergent process, where outcomes are shaped not by a single consciousness but by interactions among heterogeneous contributors.

5.2 Distributed Agency and Hybrid Creativity

Contemporary AI systems often operate as non-deterministic collaborators. Rather than serving as passive tools, they perform as dynamic agents capable of interpreting data, responding to stimuli, and producing novel outputs based on learned behavior. This repositions the composer not as a sovereign creator but as a participant within a broader ecology of agency [7]. The resulting works are not simply authored but assembled through interaction-human and machine, intention and emergence.

Such distributed authorship invites new ethical and ontological questions: If the machine contributes to a composition, can it be said to possess creative intent? Or is intent a purely human concept, inapplicable to algorithmic systems? These questions cannot be resolved through traditional binaries; creativity must be reframed as a spectrum of relational functions, with authorship shared, layered, and negotiated [26].

5.3 The Illusion of Authenticity and Emotional Authority

A central concern in the philosophy of AI-generated music is the notion of emotional authenticity. Critics argue that although AI can simulate expressive gestures, it lacks the subjective experience required to generate true emotional content [27]. This critique, while common, often rests on an essentialist view of artistic value, one that ties meaning to human suffering, intuition, or intentionality.

Yet recent empirical studies complicate this view. Listener bias plays a significant role in evaluating AI-generated music: people report lower appreciation when they believe a machine composed the piece, regardless of its actual sonic content [8, 26]. This pattern signals a deeper cultural unease, not about the music itself, but about the perceived erosion of human exceptionalism in the creative process. AI-generated music also foregrounds the constructedness of authenticity, suggesting that emotional authority may be more a matter of perception than ontology [9].

5.4 Ethical and Cultural Repercussions of Non-Human Creativity

The displacement of the human author carries with it significant ethical implications.Current copyright systems remain structurally unprepared to handle works produced through non-human processes [23, 22]. Legal doctrines rooted in Enlightenment-era notions of personhood and

moral agency falter when faced with generative algorithms.

Beyond legal reform, a broader cultural recalibration is needed. Creative systems should be understood not merely as tools but as cultural actors that reshape norms, aesthetics, and power. When composers embed values, constraints, and assumptions into the systems they design, they engage in a form of ethical authorship-one that warrants critical scrutiny and transparent disclosure [24, 28].

6 Unheard Structures: Theorizing Form and Style in Machine-Made Music

6.1 Disrupting Formal Expectations in the Age of Generativity

AI-generated music challenges the foundational assumptions of traditional music theory by producing works that often defy familiar formal structures. Whereas Western music theory has long relied on frameworks such as sonata form, phrase-period analysis, and hierarchical harmonic progressions, AI models-particularly those based on statistical learning or generative adversarial networks-generate material without regard for historically rooted stylistic coherence [20]. The result is a body of work that resists traditional analysis and calls for new theoretical paradigms.

In the context of symbolic music generation, long short-term memory (LSTM) networks and reinforcement learning algorithms produce sequential musical events based on learned probabilities rather than teleological form [26]. These outputs often lack clear thematic development or cadential closure, which complicates their integration into formal analytical models developed for tonal music. Theorists are thus compelled to reconceptualize musical form not as a prescriptive grammar but as an emergent phenomenon driven by data patterns and machine optimization.

6.2 Style, Mimicry, and the Question of Originality

One of the central questions raised by machine-made music is how style is represented, imitated, or transformed. Unlike human composers who are influenced by embodied practice and cultural context, AI systems often generate music by pattern-matching across massive datasets. Tools like Flow Machines and Genomus function through statistical modeling of stylistic tendencies yet lack an embedded cultural or aesthetic framework [29]. This raises epistemological questions: is the output an authentic engagement with style or a mimicry devoid of intentionality?

For music theorists, this decoupling of style from context requires a reassessment of what style means in the digital age. If style is defined purely by surface-level features-note intervals, rhythmic densities, harmonic transitions-then machine outputs may qualify as stylistically accurate. However, if style is also about intention, cultural location, and artistic worldview, then such generative outputs must be interpreted with skepticism [27]. The challenge for theorists lies in balancing formal analysis with contextual awareness, resisting reductionist interpretations of style-as-data.

6.3 Toward a New Analytical Vocabulary for AI-Generated Music

The unprecedented nature of AI-generated music demands an expanded analytical vocabulary that accommodates new forms, structures, and sonic logics. Music studies should be rethought through musaicology: an approach that treats algorithmic systems as legitimate agents in music-making and develops theory around their roles. [30]. Their work underscores the need for analytical tools that can assess not only output, but also the inner workings of the generative system.

Such models include trace-based analysis (focusing on decision paths within neural networks), comparative modeling (juxtaposing AI output with training data), and perceptual mapping (studying listener responses to unfamiliar formal configurations). These emerging methodologies extend beyond traditional score analysis and require interdisciplinary fluency in computation, cognition, and aesthetics. Music theorists must now engage with code, datasets, and system architecture as primary texts for interpretation [18].

6.4 Pedagogical and Epistemological Implications

The shift toward machine-generated music carries pedagogical consequences for how music theory is taught and theorized. In classrooms increasingly exposed to AI-assisted composition, students are confronted with materials that do not conform to traditional harmonic or formal expectations. These new paradigms present an opportunity to reshape music education, making space for experimental, data-driven, and process-oriented approaches to form [31].

Rather than resist the unfamiliarity of AI-generated forms, music theorists and educators can embrace them as catalysts for epistemological expansion. These works challenge the notion of a singular theoretical canon and invite pluralistic approaches grounded in analysis-by-making, algorithmic transparency, and critical interpretation. In this sense, the rise of machine-made music becomes not a threat, but an opportunity to reimagine the function and future of music theory itself.

7 Interfaces of Imagination: Tools, Transparency, and Technological Mediation

7.1 Software as Environment: Reframing Tools as Co-Creators

Music technology is no longer merely a medium for transmitting human creativity; it is increasingly a co-productive environment that mediates and transforms the act of composition itself. AI-driven music software-from symbolic composition tools to deep learning audio generators-restructures the creative space, shifting agency toward systemic affordances and algorithmic behavior [7]. In these

systems, tools are not passive conduits but active participants shaping the logic and limits of musical imagination.

Technologists and composers alike must therefore approach system design with reflexive intentionality. Every design decision-interface layout, parameter visibility, and automation defaults-carries aesthetic and political implications [24]. The interface becomes a site of negotiation between usability and creative autonomy, transparency and opacity, human authorship and machine suggestion.

7.2 Transparency and Black Boxes: Navigating Opacity in AI Systems

Despite their generative power, most AI music systems operate with significant internal opacity. Deep neural networks, particularly in audio synthesis and symbolic composition, often function as black boxes-producing outputs without offering interpretable insight into their inner workings [20]. This lack of transparency complicates the composer's ability to control or even understand the mechanics of musical generation.

Music technologists must address this gap by developing systems that balance complexity with traceability. Interpretable AI models and interface-layer visualizations can help composers make informed aesthetic decisions [21]. Without such affordances, composers risk losing authorship in the technical depths of a system that resists both intervention and explanation.

7.3 The Politics of Data and Training Sets

Another layer of technological mediation occurs in the curation of training data. AI systems learn to compose by ingesting vast datasets-often drawn from copyrighted, culturally specific, or stylistically narrow repertoires [22]. These datasets shape the stylistic boundaries and expressive capacities of the models, embedding biases and exclusions into the generative logic itself.

Music technologists must consider not only what data is included, but also what is left out [23, 24]. Whose music gets to train the composer-machine? What genres, traditions, or practices are rendered invisible through algorithmic omission? Such questions are not merely technical-they are deeply ethical, especially in the context of global and decolonial music scholarship.

7.4 Democratization and Inequality in Access to Creative Systems

While AI tools promise to democratize composition by making powerful technologies accessible to broader communities, they also risk reinforcing inequalities. High-performance models often require advanced hardware, significant technical literacy, and costly infrastructure-resources not equitably distributed across global or marginalized music communities [10]. The promise of democratization may thus be undermined by technological, economic, or linguistic barriers.

To fulfill the inclusive potential of these systems, technologists and designers must adopt community-informed frameworks and invest in accessibility, localization, and transparency. This includes developing low-code or no-code systems, supporting open-source alternatives, and prioritizing educational outreach to communities historically excluded from electroacoustic and computational music practices.

8 Compositional Hybrids: Case Studies at the Intersection of Code, Sound, and Agency

8.1 Algorithmic Dialogues: GenJam and the Genetics of Improvisation

One of the earliest and most enduring examples of algorithmic co-authorship is GenJam, a genetic algorithm-based jazz improvisation system developed by John Biles. GenJam evolves its musical responses using a population-based model, employing mutation and crossover to iteratively generate improvised solos [19]. In this model, the composer-programmer does not craft each note but shapes the fitness function, mutational behaviors, and stylistic constraints-essentially composing the evolutionary environment within which music emerges.

This case exemplifies a delegated agency model of composition, where the generative system becomes a quasi-performer. The musical identity of the work is thus hybrid: shaped by the system's algorithmic evolution, the programmer's structural decisions, and the stylistic input of human collaborators during training and evaluation.

8.2 Emotionally Intelligent Systems and Listener Perception

One class of hybrid systems targets emotional alignment between music generation and audience response. Symbolic generators can produce music aimed at specific emotional targets and be evaluated through listener feedback, using deep-learning models trained on emotionally annotated corpora and fine-tuned to elicit particular affective responses [21].

What emerges from this work is not just a new compositional tool, but a revised theory of musical agency-where affective calibration becomes a co-creative parameter. The composer curates training data, configures emotional parameters, and interprets feedback loops. The resulting music is thus a joint production of neural networks, psychological models, and the composer's aesthetic goals, further blurring the distinction between authorship and design.

8.3 Generative Sonic Ecosystems in Spatial Composition

In spatial sound environments, compositions can function as responsive ecosystems, with spatialized audio evolving in response to real-time environmental inputs and sensor data [13]. The composer's role extends beyond sound selection to include system design, spatial mapping, and interaction modeling.

These generative installations highlight the composer as an environmental coder-one who orchestrates behaviors, contingencies, and responsiveness rather than fixed musical structures. The system itself becomes an autonomous sonic agent, making decisions within constraints set by the human composer. This case complicates the relationship between composition, programming, and performance, reinforcing a posthuman approach to creative authorship.

8.4 Comparative Frameworks of Human-Machine Musical Labor

Across these case studies, a comparative framework begins to emerge, revealing how different systems distribute creative labor. In rule-based or supervised learning environments (e.g., GenJam), the human's role is weighted toward algorithmic design. In emotion-driven generative systems, the human calibrates affect and refines output. In responsive spatial works, the composer authors interactivity and system behaviors more than musical content per se.

This spectrum of hybridity demands new models of evaluation. Traditional metrics of musical success, structural elegance, technical difficulty, emotional expression, may not fully capture the creative labor embedded in system design and human-machine collaboration. Evaluating these works therefore requires a situated understanding of what the composer builds, delegates, and negotiates across the boundaries of code, sound, and agency [5].

9 Coda for the Composer: Toward a Distributed and Evolving Creative Identity

The emergence of AI in compositional practice has irreversibly shifted the conceptual center of authorship. No longer defined solely by individual intentionality or linear control, the composer's identity now resides within a web of interactions between software, systems, training data, algorithms, interfaces, and listener response. This distributed creativity challenges the romantic legacy of the composer-genius and invites instead a model of systemic authorship-one where composition is structured less as a monologue and more as a dialogue among entangled agents [7].

Throughout this paper, we have seen how the composer's decisions-ranging from parameter tuning and dataset curation to interface configuration-are not only aesthetic but epistemic and ethical. The composer-programmer does not merely design sounds, but designs systems of value, legibility, bias, and access [23]. These acts of creation must therefore be understood as forms of authorship in their own right: the authorship of tools, of infrastructures, of relational creative processes.

Existing frameworks for recognizing authorship and attributing ownership fail to capture the realities of machine-mediated co-creation [22]. Addressing this gap requires not only legal revision but also a philosophical re-grounding of authorship in the context of non-human agents.

This evolution in authorship theory has both liberatory and cautionary dimensions. On one hand, the composer is freed from narrow aesthetic conventions and can now explore new forms of sonic articulation, emotional mapping, and spatial interaction. On the other, this freedom is accompanied by new risks: opacity in machine systems, cultural erasure through biased data, and increased abstraction between creator and created [9].

Such challenges demand that composers, theorists, technologists, and educators take up an expanded disciplinary responsibility. This includes advocating for transparency in system design, equity in access to tools, and attentiveness to the situated meanings of musical output in diverse cultural contexts [10].

Ultimately, the composer in the age of AI is neither an obsolete artisan nor an omnipotent programmer, but a mediator of imaginative systems. As argued throughout this article, the composer today becomes a curator of processes, an architect of behaviors, and an interlocutor between human and algorithmic intention. Composition becomes a choreography of constraint and emergence, situated at the intersection of agency, authorship, and ethical design.

This is not the end of the composer, but a coda: a transition into a future where creative identity is no longer singular, but plural, shared, evolving-and above all, aware.

References

[1] Woo-jung Jon. Prompting creativity: Tiered approach to copyright protection for AI-generated content in the digital age. *Media and Communication*, 13, 2025.

[2] Sebastian Trump. AI composers and cyborg performers: More-than-human creativity in music. *Cultural Science Journal*, 14(1):71–76, 2022.

[3] Saffa A. Abdad, Safira H. Pradina, Alisa Z. Sakdiya, and Anissa N. Zahrani. Legal analysis on remixing songs using artificial intelligence (AI) technology. *Law and Justice*, 9(1):50–62, 2024.

[4] Jakub Wyczik and Rafal Wieczerzak. Rethinking copyright: The art of ownership in AI outputs. *Eastern European Journal of Transnational Relations*, 8(1):39–52, 2024.

[5] Gianluca Micchi, Louis Bigo, Mathieu Giraud, Richard Groult, and Florence Leve. I keep counting: An experiment in human/AI co-creative songwriting. *Transactions of the International Society for Music Information Retrieval*, 4(1):263, 2021.

[6] L. Godlin Atlas, C. Mageshkumar, Shiny K.V, D. Bhavana, and V. Madhumitha. Generative AI in creative industries using gans for music and art generation with human-AI co-creation. *Ictact Journal on Soft Computing*, 15(3):3653–3661, 2025.

[7] Mauricio B. Miranda and Alfaro Cuauhtzin Alejandro Rosales Pena. Invenciones y disrupciones de la inteligencia artificial en la creacion musical. *HArtes*, 6(11):69–90, 2025.

[8] Daniel B. Shank, Courtney Stefanik, Cassidy Stuhlsatz, Kaelyn Kacirek, and Amy M. Belfi. AI composer bias:

Listeners like music less when they think it was composed by an AI. *Journal of Experimental Psychology Applied*, 29(3):676–692, 2023.

[9] Song Yang. The illusion of authenticity: Ethical dilemmas and aesthetic imagination in pop music creation in the age of AI. *Jcac*, 1(1):28–31, 2025.

[10] Inigo Olcoz Basarte, Sergio Eslava Arraiza, Leire Arbona Puertolas, and Esteban Morras Andres. Music AI: Requiem or symphony. *Riev*, 69(2), 2024.

[11] Thor Magnusson. Designing constraints: Composing and performing with digital musical systems. *Computer Music Journal*, 34(4):62–73, 2010.

[12] Joseph Malloch, Jeremie Garcia, Marcelo M. Wanderley, Wendy E. Mackay, Michel Beaudouin-Lafon, and Stephane Huot. *A design WorkBench for interactive music systems*, pages 23–40. Springer, 2019.

[13] Andrzej Golas and Katarzyna Suder-Debska. Multichannel system for sound creation in open areas. *Archives of Acoustics*, 37(3), 2012.

[14] Ali Balighi. The art and science of multichannel audio in electroacoustic music: A review. *Emille: the Journal of the Korean Electro-Acoustic Music Society*, 22:21–32, 2024.

[15] Renaud Bougueng Tchemeube, Jeff Ens, Cale Plut, Philippe Pasquier, Maryam Safi, Yvan Grabit, and Jean-Baptiste Rolland. Evaluating human-AI interaction via usability, user experience and acceptance measures for mmm-c: A creative AI system for music composition. *arXiv preprint arXiv:2504.14071*, 2025.

[16] David Holland and Duncan Chapman. Introducing new audiences to sound-based music through creative engagement. *Organised Sound*, 24(3):240–251, 2019.

[17] Nitish Bhardwaj and Pravin Uddhav. Harmonizing innovation: A journey through the history of computational music. *International Journal For Multidisciplinary Research*, 6(2), 2024.

[18] Jose Lopez-Montes, Miguel Molina-Solana, and Waldo Fajardo. Genomus: Representing procedural musical structures with an encoded functional grammar optimized for metaprogramming and machine learning. *Applied Sciences*, 12(16):8322, 2022.

[19] John A. Biles. *Improvizing with Genetic Algorithms: GenJam*, pages 137–169. Springer, London, 2007.

[20] Carlos Hernandez-Olivan and Jose R Beltran. *Music composition with deep learning: A review*. Advances in speech and music technology: computational aspects and applications. Springer, 2022.

[21] Naomi Imasato, Kazuki Miyazawa, Caitlin Duncan, and Takayuki Nagai. Using a language model to generate music in its symbolic domain while controlling its perceived emotion. *IEEE Access*, pages 1–1, 2023.

[22] Lu Xu. A study on the fair use principles of artificial intelligence generated music. *Lecture Notes in Education Psychology and Public Media*, 34(1):228–235, 2024.

[23] Y. M. Bysaga, D. M. Byelov, and V. V. Zaborovskyi. Artificial intelligence and copyright and related rights. *Uzhhorod National University Herald Series Law*, 2(76):299–304, 2023.

[24] Mercedes Bunz, Eva Jager, Alasdair Milne, and Joanna Zylinska. Creative AI futures: Theory and practice, 2022.

[25] Cedric Sueur, Jessica Lombard, Olivier Capra, Benjamin Beltzung, and Marie Pele. Exploration of the creative processes in animals, robots, and AI: Who holds the authorship? *Humanities and Social Sciences Communications*, 11(1), 2024.

[26] Alessandro Ansani, Friederike Koehler, Lisa Giombini, Matias Hamalainen, Meng Chen, Marco Marini, and Suvi Saarikallio. AI performer bias: Listeners like music less when they think it was performed by an AI. *Empirical Studies of the Arts*, 43(2):1137–1161, 2025.

[27] Nicholas Novelli and Shannon Proksch. Am I (deep) blue? music-making AI and emotional awareness. *Frontiers in Neurorobotics*, 16, 2022.

[28] Mark Coeckelbergh. The work of art in the age of AI image generation. *Journal of Human-Technology Relations*, 1, 2023.

[29] Francois Pachet, Pierre Roy, and Benoit Carre. *Assisted music creation with flow machines: towards new categories of new*, pages 485–520. Springer, 2021.

[30] Bob LT Sturm, Ken Deguernel, Rujing S Huang, Andre Holzapfel, Ollie Bown, Nick Collins, Jonathan Sterne, Laura Cros Vila, Luca Casini, David Dalmazzo, et al. MusAIcology: AI music and the need for a new kind of music studies. *SocArXiv Papers*, 2024.

[31] Jingyao Sang. The intersection of technology and art: A study on AI-driven CTCL music teaching paradigm. *Research Square*, 2024. pre-print.