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Engineering Art-ificial Intelligence in Music Production: Art for Engineers, Engineers for Art



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Abstract

This study investigates how software engineers working on music AI systems conceptualize music, art, and creativity, and how they integrate artificial intelligence (AI) as a co-creator in music composition processes. Drawing on 35 in-depth interviews with engineers based in the USA and Türkiye, the research explores the values, assumptions, and interpretive frameworks that shape their technical and aesthetic practices. Findings reveal that while engineers often frame AI solely in computational terms, they tend to frame artistic creativity as a quality accessible only to human beings, positioning the human as the creative force in music as an artistic field and juxtaposing AI as a collaborative tool that can be utilized to unleash musical creativity in previously unexplored ways, which represents a new, hybrid form of artistic creativity. However, this collaboration is mediated by engineers' own worldviews, which are often shaped by technocentric, efficiency-driven logics that position AI as a means, leading to a blind faith in technology and ignoring the social forces such as capitalism, imperialism and colonialism embedded in AI. The contribution of this study to the sociology of AI literature is twofold. First, by emphasizing how cultural imaginaries of art and music are being reshaped in the co-production of music, the study provides an understanding of music as a form of art created through human-machine interactions. Second, it critically evaluates how this process of co-creativity reproduces social forces such as capitalism, imperialism and colonialism.

Keywords

Music · Co-Creativity · Artificial Intelligence · Software Engineers · Art · Sociology

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Introduction

Artificial intelligence (AI) systems have become increasingly central to the organization of social life, operating across several areas of social life such as healthcare, finance, law enforcement, labor, and intimate relations in ways that embed new forms of governance, inequality, and surveillance. In healthcare, algorithmic monitoring and self-tracking technologies transform patients into data-producing agents and shift decision-making towards opaque, technocratic systems (Lupton, 2016; Hagenaar & Prainsack, 2021). In finance, credit scoring and investment decisions are delegated to black-box algorithms that conceal bias while presenting themselves as neutral (Bellanova & de Goede, 2022). Predictive policing and AI surveillance extend these dynamics into law enforcement, where data-driven suspicion reinforces racial hierarchies and automates discrimination (Brayne, 2017; Benjamin, 2019). Legal institutions adopt similar tools to assess risk and allocate resources, disproportionately affecting marginalized communities through automated exclusion (Eubanks, 2018). In the workplace, algorithmic management governs productivity and behavior, reducing labor to quantifiable metrics and intensifying precarity under surveillance capitalism (Moore, 2017; Zuboff, 2019). Even affective and relational spheres are reshaped, as AI-mediated platforms condition expressions of intimacy, reinforce surveillance logics in personal relationships, and subtly recalibrate the boundaries of trust and emotion (Neff & Nafus, 2016). Across these domains, AI does not simply perform tasks; it reconfigures power, redraws social boundaries, and redefines how institutions interact with human lives. In other words, AI has created a new power complex that no social sphere can escape, creating significant changes in these areas, even altering sociality itself and how it is practiced.

Recently, artistic expression and creation such as music, painting, poetry, film, and so on, once considered quintessentially human's unique feature, has also become under the transformative power of AI. As machine learning systems are integrated into the processes of composition and performance, they not only transform technical workflows but also provoke fundamental questions about authorship, agency, and the very nature of creativity (Davis, 2013; Fujita, 2017; Wingström et al., 2022). In this rapidly evolving landscape, Music Information Retrieval (MIR) systems have emerged as a key area of AI development, applying computational techniques to tasks such as



genre classification, music generation, and composition assistance. These systems are not simply tools for enhancing productivity; they participate in reconfiguring aesthetic values, artistic labor, and cultural imaginaries. Originating at the intersection of computer science, musicology, and signal processing, MIR systems are designed to extract meaningful information from audio, symbolic, and textual music data (Casey et al., 2008; Downie, 2003). In recent years, MIR has expanded beyond retrieval to encompass tasks such as genre classification, automatic composition, mood detection, and melodic similarity analysis (Schedl et al., 2014; Devaney et al., 2022). These systems often serve as the technical infrastructure behind music recommendation engines, composition assistants, and interactive music tools.

While much attention has been paid to the technical capabilities of generative music systems (Herremans, Chuan & Chew, 2017; Briot, Hadgeres & Pachet, 2019; Dhariwal & Jun, 2020), less is known about how the developers themselves -those who design and shape these systems, namely the software engineers- conceptualize art, creativity, and the role of AI in artistic production. This study aims to address this gap by investigating how software engineers working on music AI systems conceptualize music, art, and creativity, and how they integrate AI as a co-creator in music composition based on MIR as ground data for the AI models. This study treats MIR systems not only as a set of computational techniques but also as a sociotechnical field in which algorithms, datasets, and user expectations interact to shape how music is interpreted, generated and valued. Drawing on 35 in-depth interviews with software engineers based in the USA and Türkiye, the research explores the values, assumptions, and interpretive frameworks that shape their technical and aesthetic practices. By focusing on the perspectives of engineers, the study aims to contribute to conversations in posthumanism, science and technology studies (STS) and the sociology of art. It interrogates not only how creativity is distributed across human-machine assemblages but also how social hierarchies of labor, authorship, and cultural ownership are re-inscribed or obscured in these configurations. In doing so, the research raises critical questions about the political economy of creativity in the age of AI: Who gets to create? Who gets credited? Furthermore, at what social and ecological cost is this new creative frontier being built?

The paper is structured as follows: first, we offer a literature review on creativity and co-creativity as an alternative to anthropocentric perception of the concept; then, we critically investigate the



posthuman narrative of co-creativity and offer an understanding of why and how it should be criticised using the toolbox of sociology. Then, we proceed to the data and method section to introduce the fieldwork in which the data used in this study is gathered. Then, we present the findings and discuss them, critically assessing co-creativity in music and situating the notion in a sociological traction. The next section presents a critical evaluation of the literature on creativity and machine creativity.

‘Creative’ Machines: A Critical Review

Creativity has long been a subject of philosophical, psychological, and sociological inquiry, yet it is often grounded in a persistent anthropocentrism: the presumption that creative thought, artistic expression, and cultural production are uniquely and exclusively human capacities. In its classical form, creativity is defined as “the ability to come up with ideas or artefacts that are new, surprising, and valuable” (Boden, 2004). From this seemingly neutral definition unfolds a centuries-long tradition of human-centred theorizing. In Ancient Greek philosophy, Plato proposed that creativity stems from divine inspiration, positioning artists as passive vessels for the Muses, beings beyond human comprehension (Plato, trans. 1961). Aristotle, by contrast, emphasized *techne* (craft) and *phronesis* (practical wisdom), bringing creativity down to earth by framing it as a product of skill, intention, and cultivated intellect (Aristotle, trans. 1999). Throughout modern thought, this metaphysical division persisted. Kant’s notion of genius in *The Critique of Judgement* described creativity as a mental aptitude rooted in imagination and originality (Kant, 2000/1790), while 19th-century thinkers such as Schopenhauer (1818) and Bergson (1911) conceptualized creativity as an inner force that transcended rationality, whether as the desire to overcome suffering or as the manifestation of *élan vital*, the vital impulse of life. These traditions all reinforced the same ontological assumption: that creativity belongs to human beings alone.

With the rise of sociology, creativity was reframed in terms of structure, constraint, and collective meaning-making. The sociological concern on the definition of creativity can be traced back to classical sociologists as well. For Karl Marx, creative activity was fundamentally tied to labor and material production; he understood human beings as inherently creative species-beings (*Gattungswesen*) who shape themselves and their world through transformative, sensuous labor



(Marx, 1844/1978). However, under capitalism, this creative potential is alienated; divorced from the worker and subordinated to the logic of profit and commodification. Creativity, in this view, is not merely expressive but embedded in class struggle and the relations of production. Emile Durkheim (1995/1912) extended this structural framing, locating creative expression within the dynamics of collective consciousness and the integration of individuals into social wholes. Max Weber (2002/1905), meanwhile, linked the emergence of novel cultural forms to the ethical and religious values of particular social groups, highlighting how creativity is shaped by the ideational foundations of different historical epochs. Together, these thinkers laid the groundwork for understanding creativity not as an isolated spark of genius but as a socially and economically mediated phenomenon.

In the 20th century, critical theorists from the Frankfurt School conceptualized creativity as a fragile space of autonomy within an increasingly commodified and standardized cultural landscape, arguing in their critique of the culture industry that the logic of capitalist production had subsumed even art and imagination, rendering creativity a tool of mass deception rather than resistance (Adorno, 1997). Yet, in this context of instrumental rationality and cultural repetition, they still identified the possibility of negative dialectics, a form of creativity that could refuse resolution and challenge conformity, with Adorno insisting that true art resists classification and offers a critical distance from the prevailing social order (Adorno, 1997:226). A parallel current in mid-20th century thought can be traced through Marshall McLuhan, whose dictum “the medium is the message” suggested that cultural forms are decisively shaped by the technologies that carry them, such that creativity becomes not merely human expression but an effect of the sensory and cognitive environments produced by the media systems themselves (McLuhan, 1964). By foregrounding the formative role of technological systems, McLuhan reinforced a form of determinism that, while distinct from the Frankfurt School, similarly downplayed the agency of individual creators. Alongside these theoretical interventions, Norbert Elias’ sociological study of Mozart re-situated the problem of creativity in a historical and social context, showing that what appeared as pure artistic originality was shaped by the institutional structures of patronage, the hierarchies of court society, and the broader cultural field of eighteenth-century Europe (Elias, 1993). In Elias’ framing, genius is not an ahistorical gift but a socially conditioned practice arising within networks of constraint and



opportunity, displacing the myth of autonomy and highlighting the relational foundations of artistic creation, even for figures celebrated as singular geniuses. Taken together, these perspectives reveal a spectrum of approaches to art and creativity in modern thought: from the Frankfurt School and McLuhan's technological determinism to Elias' relational sociology, each redefines the conditions under which artistic practice emerges. What unites them is a rejection of creativity as an isolated act of genius, instead grounding it in economic, technological, and social structures that shape both its possibilities and its limits.

In contrast to the deterministic understanding of creativity and art proposed by the abovementioned approaches, the tradition of British Cultural Studies reimagined culture as a contested terrain of negotiation and struggle (Williams, 1977). Against theories that cast audiences as passive recipients of commodified messages, this mode of thought emphasizes the plurality of interpretation and the active role of everyday practices (Hall, 1992). Cultural texts, in this framing, are not unilaterally imposed but taken up, reworked, and resignified in diverse ways, shaped by class positions, subcultural affiliations, and lived experience. Hence, creativity is not confined to the moment of production but extends into reception, where audiences generate new meanings and even resistant practices. In this view, creativity becomes a distributed process, unfolding across the relations between producers, texts, and audiences, and continually reshaped through acts of interpretation and appropriation. This distributed view of creativity can be further observed in Arthur Danto's approach to art as he reoriented the analysis of creativity towards its institutional and discursive conditions, emphasizing that artworks do not attain meaning through formal qualities alone but through their positioning within the "artworld"; a constellation of historical narratives, interpretive communities, and legitimating institutions (Danto, 1964). Thus, creativity emerges not from the isolated artist but through a dialogue with the evolving norms, symbols, and languages of the field. This move towards a relational and processual understanding of artistic production was further developed by Howard Becker, who proposed a sociology of art centered around "art worlds" as networks of cooperative activity (Becker, 1982). For Becker, creativity is not the product of a lone genius but of coordinated efforts among artists, technicians, critics, audiences, and funders. Each actor contributes to a distributed infrastructure through which creative work becomes possible, visible, and intelligible (Becker, 1982). Pierre Bourdieu deepened this relational approach by situating creative production



within structural social differentiation. Through his concepts of *habitus*, *field*, and *capital*, Bourdieu demonstrated how artistic practices are shaped by both position-taking and the accumulation of symbolic resources. Creativity, he argued, is not simply the generation of novelty but a struggle over legitimacy within a competitive cultural field; a site where social trajectories, class dispositions, and aesthetic hierarchies intersect. In this framework, the value of creativity is never intrinsic but always historically situated, institutionally mediated, and socially contested (Bourdieu, 1984; 1993).

Despite these sociological advances, the figure of the human creator remained unchallenged, sovereign, and intact. Even when creativity was understood as collective or culturally situated, it was still fundamentally regarded as a human capacity. This anthropocentric commitment now faces a significant disruption considering AI systems that increasingly participate in practices once considered irreducibly human, such as art, music, and writing. As computational systems grow capable of producing outputs deemed new, surprising, and even valuable, traditional definitions of creativity have come under pressure. Posthumanist theory offers a vital reorientation here. Rather than maintaining a rigid boundary between human agency and technological mediation, scholars such as Hayles (1999), Latour (1992; 2005), and Braidotti (2013) propose a relational ontology in which agency is not an exclusive property of humans but emerges from entangled networks of human and nonhuman actors. This reconfiguration of “the social” expands the terrain upon which creativity can be theorized; not as a sovereign act of human will, but as an emergent property of sociotechnical assemblages that include algorithms, infrastructures, bodies, institutions, and cultural norms.

In this context, the notion of co-creativity has gained increasing attention across disciplines engaging with AI, art, and digital culture. Rooted in the foundational claim that creativity is not an exclusively human capacity, the co-creativity paradigm reframes creative production as a relational process in which both human and machine agents contribute meaningfully to a shared outcome (Davis, 2013; McCormack et al., 2019; Wingström et al., 2022). Rather than positioning AI merely as a passive tool or generator of randomness, co-creativity highlights the interactive and iterative exchanges that occur between human intentionality and algorithmic affordances. It challenges traditional assumptions of authorship, originality, and control, emphasizing instead the entanglement of agency across sociotechnical systems.



This theoretical framework is particularly salient in contemporary musical practices involving AI. For instance, tools such as Google Magenta, OpenAI's MuseNet, SunoAI and AIVA (Artificial Intelligence Virtual Artist) illustrate varying configurations of co-creativity. A musician working with Magenta's "Piano Genie" might improvise on a limited set of keys, while the AI fills in harmonically complex, full-bodied piano phrases in real time. In such a scenario, the human provides affective cues and broad structure, while AI 'suggests' unexpected musical pathways, producing a hybrid composition that neither would have created alone. Similarly, AIVA, a platform trained on film scores and classical compositions, allows users to guide mood, tempo, or structure, while the AI generates a fully orchestrated musical piece. The resulting work is shaped by both the user's aesthetic input and the machine's computational interpretation of the musical form and style.

With the introduction of the term generative co-creativity (Galanter, 2016), which comprehends AI systems as systems that demonstrate autonomy, surprise, and responsiveness, a new layer has emerged and the debate has deepened. Per Galanter, AI systems are not simply machines executing pre-set rules; they are dynamic systems capable of reacting to and transforming human input in ways that defy linear authorship. For example, improvisational electronic musicians using live-coding environments such as TidalCycles often experience co-creativity in real time, where the system's unpredictable sonic feedback influences the performer's next move. This feedback loop between machine behavior and human action forms the core of a co-creative moment; in short, AI contributes to art in an active manner (Davis, 2013; Fujita, 2017). The co-creativity approach illustrates the fluid distribution of agency across human-machine collaborations in artistic fields (Wingström et al., 2022). At one end of the spectrum, the process is human-led: an artist might use AI to assist in harmonization or rhythm generation, retaining final compositional control. At the other hand, the process might become more machine-driven, such as when an AI model generates multiple musical variations from a short input phrase, prompting the human to respond as a curator or remixer rather than as an originator. The spectrum is not merely technical but reflects how initiative, decision-making, and authorship are negotiated across the system.

The proposal of 'distributed artistic agency' of the co-creativity approach brings us to a very critical moment; a foundational question needs to be answered to complete the cycle. If co-creating art with AI is possible, what becomes the human as an artist? At this moment, is art dead?



Posthumanist thought has developed an important concept to comprehend the newly emerging 'human as the co-maker of art' instead of the 'human as the sole art maker' situation. Rejecting the longstanding Romantic ideal of creative genius, posthumanist thought introduces the term "remixology," which expands creativity beyond originality and positions technology-mediated art as a legitimate form of art and cultural production (Amerika, 2011). In this sense, art becomes a networked practice which consists of humans, technologies and digital media ecologies. Aligning with the core concepts of posthumanist analysis of art such as the death of the author (Barthes, 1967), art as a rhizomatic assemblage of humans and non-humans (Deleuze & Guattari, 1987) co-creativity conceptualizes artistic process as a dynamic, distributed network (Latour, 2005) and art [as the outcome of this process] becomes a rhizome, or a network built on human-machine interactions. In short, the introduction of the term remixology positions human as a 'remixologist' rather than a 'creative genius'; an agent who joins forces with technology to create art; a part of a network or an assemblage who directs, prompts and utilizes technology according to their agenda. Hence, human becomes not the creative genius, the gifted, sole actor who does everything in the production of art but becomes an actor -one of many in fact- in a technology-mediated process.

As promising as it sounds in defining art in a new, democratic way, posthuman thought and the approach of co-creativity risks ignoring one crucial aspect of AI: it is deeply entangled with capitalism and colonialism, albeit in new forms, and these social powers and asymmetries embedded in its very core (Couldry & Meijas, 2019; Zuboff, 2020). This is where sociology comes into play and provides critical tools to illuminate the intersection of capitalism, society, technology and what lies beneath the promises surrounding AI. Sociological studies reveal that AI is a technology that rises on the exploitation of nature, labor and culture (Crawford, 2021; Katz, 2020). It is a technology that brings substantial transformations on labor force in favor of capitalism; creating an adapt or go extinct situation by necessitating new sets of skills to survive in the job market (Ford, 2015; Acemoğlu & Johnson, 2022). It is an 'intelligent' technology; however, this 'intelligence' is embedded with the cultural and political biases and intentions of its creator (Seaver, 2019; Joyce et al., 2021; Erbay & Joyce, 2025). It can process vast amounts of data within no time, but at the expense of water, minerals and labor (Crawford, 2021). The data on which AI models are trained do not annotate itself; instead, people in the Global South work in precarious conditions -underpaid and with no job security- to



annotate data. Silicon Valley companies need to train their algorithms (Ekbia, 2018; Gray & Suri, 2019; Casilli, 2025) and the 'raw data' is obtained through a process built on the unethical appropriation of cultural materials without the consent or compensation of those who own them (O'Neil, 2016; Dyer-Witford et al., 2019). Hence, what appears as co-creation may, in fact, be the outsourcing of the labor power, which turned them into 'ghost workers' (Gray & Suri, 2019) under digital capitalism. As captivating as the concept itself, particularly in its posthuman promise to decentralize authorship and reimagine the human-machine relations, it runs the risk of concealing the social and political asymmetries that make such collaborations possible in the first place. Celebrating artistic entanglement between humans and machines too often glosses over the asymmetries of power, labor, and ownership embedded within the very systems that enable these creative acts. Behind every generative system labelled as a "co-creator" lies a complex process of extraction: the data usurped without consent, the labor outsourced under exploitative conditions, and the computational resources sustained by ecological depletion and destruction. To speak of co-creativity while ignoring these foundations risks aestheticizing inequalities present in AI technologies.

In addition, the co-creativity perspective tends to elevate surface-level collaboration while remaining silent on the embedded hierarchies within the process. Who has access to the tools? Who shapes the outputs? Who profits from the so-called shared creation? These are not abstract questions, but concrete conditions that determine whose creativity is recognized and whose is rendered invisible. In its attempt to dismantle the dominant paradigms of artistic creativity and production, co-creativity [without sociological insight] risks providing an epistemological frame for reproducing existing social inequalities under an algorithmic form. Without the intervention of sociology, what emerges is not just an equitable redistribution of creative agency, but a sanitized illusion of collaboration, one that risks legitimizing systems built on exploitation, dispossession, and asymmetrical benefit. In other words, a co-creative approach between the perspective of co-creativity itself and sociology is an urgent need to fully comprehend the interactions, negotiations, and asymmetries that make art in the age of AI.



Data and Method

The data utilized in this study is based on fieldwork carried out in the USA and Türkiye between January 2024 and June 2024. A purposive sampling strategy was employed to recruit participants with advanced expertise in AI development related to music. No age or gender quotas were applied. The only prerequisite applied while recruiting participants had a formal educational degree in software engineering and being actively working on the development of AI applications for music production. The final sample comprised 35 participants (20 in the USA and 15 in Türkiye), all of whom were professionally active in both countries. Of these, 27 were affiliated with academic institutions and 8 participants were working in the private sector. In the final sample, all participants were holding at least a master's degree, showing the academia-oriented nature of AI development in music production. Reflecting longstanding structural disparities in the tech industry, 29 participants identified as men and 6 as women. Of the 35 participants, 27 stated that they have a musical background, albeit none of them were engaged in music in a professional sense.

The primary data collection tool used in this study was semi-structured interviews. Each interview lasted between 45 and 60 minutes and was conducted using a flexible protocol organized around four thematic clusters: (1) training and disciplinary background in computer or software engineering, (2) conceptual understandings of AI and algorithmic systems, (3) everyday practices of AI development, and (4) the intersection of algorithmic design, the conceptualization of art, and musical composition. Semi-structured interviews were selected because they provide a balance between comparability and openness, allowing for both systematic coverage of core themes and space for participants to elaborate on their own perspectives (Marvasti, 2004; Silverman, 2020). This method was considered particularly appropriate for examining sociotechnical systems because it enables the identification of tensions, contradictions, and interpretive frameworks that are not accessible through standardized surveys. Prior to each interview, the participants received detailed information about the study's aims and procedures, and informed consent was obtained in accordance with the institutional ethics protocols. For those who consented, the interviews were audio recorded and transcribed; in cases where consent for recording was not given, detailed field notes were taken during the session.



Thematic coding was applied to the transcriptions of interviews, with analytic attention to emergent patterns, shared conceptual frameworks, and discursive tensions. Coding continued until thematic saturation was reached, ensuring that recurring motifs and contradictions could be meaningfully interpreted. This analytical approach is grounded in an understanding of AI systems as assemblages -comprising not only code and data but also institutional logics, ideological formations, and sociotechnical imaginaries- that are best understood through close attention to the perspectives of their creators. In the next section, the findings of the study will be presented and analyzed through a sociological lens.

The data collected for this study are not without limitations. The purposive sampling strategy focused exclusively on engineers with formal academic training and professional involvement in AI for music production, which excluded perspectives from independent developers, hobbyist programmers, and musicians who use AI outside institutional settings. The sample was also weighted towards participants affiliated with academic institutions, reflecting the academia-oriented character of AI development in music and leaving industry perspectives less represented. These factors should be taken into consideration when interpreting the findings, as they shape both the scope and the boundaries of the analysis.

“AI Generates, We Create”: Exploring Software Engineers’ Perceptions of Art and Creativity

Across all interviews in the USA and Türkiye, a similar theme occurred on the conceptualization of creativity and art among software engineers who develop MIR systems. Engineers tend to define creativity not simply as the act of producing something new, but as the capacity to express inner feelings and thoughts in a unique and personal way. Within this framing, creativity involves making sense of the world through one’s own perspective and articulating that understanding outside of conventional forms; generating meaning not only for oneself but also for others. As one U.S.-based academic put it:



“Creativity is connecting things in a way that’s unique to you so you can express yourself (...) it’s really the essence of being human; it’s about breaking from the past and finding your own path” (P4, USA, Academic).

Turkish participants echoed this view, often linking creativity to the mind’s capacity for original problem-solving. As one engineer described it:

“That’s actually a tough question. We are creative as human beings, but we don’t think about it every day, right? How is it that I am creative? That’s the hard part. I think [creativity] is about finding original solutions to the problems you face, and in doing so, being able to express yourself” (P30, Türkiye, Private Sector).

The similarities between the two cultural contexts highlight a dominant mode of thought in the field of MIR engineering. In both contexts, creativity was framed as a quality that allows one to find original, novel solutions to problems and obstacles encountered on a daily basis. Adding to that, this quality is conceptualized something intrinsic to human and is turned into a necessity for being creative. One participant in the USA highlighted this mode of thought: “To be creative is to have a creative urge, I think this is what separates us from animals. This urge has something to do with having *your* own mind; a unique feature for every one of us. It is like a fingerprint, I don’t think there is a mind completely the same as mine out there, or yours” (P1, USA, Academic).

Moving on to the concepts of art, the same similarities occurred once again in the statements of different participants, creating a theme on the conceptualization of art by MIR engineers. This time, the concepts of emotions and technique came into play, building on the concept of mind and completing the holy trinity of art of mind, emotions and technique. Art was most often described as the outcome of a creative process as the expression of emotions through technique, using technical means. A US-based company owner articulated this view as follows: “Art is the expression of feelings using specific techniques, it’s the ultimate form of expression. (...) To be an artist, you must have artistic talent, no question. Everyone can try it, but not everyone can make art, right?” (P10, USA, Company Owner).

The conceptualization of art did not show any fundamental differences between the USA and Türkiye, showcasing a transcultural understanding of art as a humane concept. The statement of

a Turkish academic exemplifies this transcultural conceptualization as they emphasised art as a medium of self-expression, similar to participants in the USA: “It’s a way of expressing yourself and your emotions through music, writing, painting, etc. When someone has something to say, art becomes the way to say it, of course, depending on their level of skill” (P35, Türkiye, Academic).

The participants’ interpretations of creativity and art clearly show that these concepts are framed within an anthropocentric point of view. Creativity is expressed as the ability to find novel solutions and creating unique connections between things in order to express oneself, or get past problems and obstacles encountered in both the physical and social world. The process of artistic creativity, on the other hand, is framed as the process of expressing one’s emotions and feelings through certain mediums, using certain techniques, which results as ‘art’ as the outcome of this unique humane process.

To understand their perception of AI creativity, participants then asked if AI could be creative, which led to a unanimous rejection of the idea. Creativity, in engineers’ view, as mentioned above, prerequisites a mind of one’s own, a condition that AI fundamentally lacks. Thus, AI could not be creative; as one participant noted: “[AI] is not creative and never will be. Creativity has to do with that spark that humans have; call it genius if you want. A person can always create something that has never been done before. AI cannot do that; it only knows what it’s been trained on. That’s all. It might perform some tasks quickly, sure. But can it be creative? No. It cannot go beyond the training data, so it’s inherently limited by what it knows” (P1, USA, Academic).

A Turkish participant offered a viewpoint that reinforced this binary conceptualization of creativity, juxtaposing AI against human on the origin of being creative: “To be creative, you need an idea. To have an idea, you need to be you. [What is being you?] To have a mind of your own. AI lacks this; it might create things, yes. But is this creativity? I don’t think so, it is probability at most” (P22, Türkiye, Academic).

As it is seen here, engineers tend to clearly distinguish human creativity from AI, associating the ‘urge to create’ with ideas, expressions and, of course, the mind itself. This viewpoint positions AI as a non-creative technology, almost like other technologies that have been achieved by humanity. Interestingly, this ‘non-creative’ or ‘can’t-be-a-creator’ technology is utilized for creating music by

the same people who do not deem it is a creative, which is a form of art that is, as mentioned above, framed as a creative process involving the expression of emotions using certain techniques. This situation looks paradoxical, and to illuminate this paradoxical situation, the participants were asked to answer a simple question: can AI create art, an art that does not emerge from a human-like creativity is possible?

The participants' answers to this question reveal an ambivalent stance against AI art. While they were adamant that AI cannot be creative, interestingly, they also acknowledged that AI could generate somewhat artistic outputs. However, their perception of these 'artistic outputs' was still built on the dichotomy of emotion/technique, resembling the technical-rational engineering ideologies which ultimately leads engineers to conceptualise technology solely as a technical means to achieve human intentions. Emphasizing the need for an emotional capacity to make art once again, most participants stated that such outputs lacked the emotional core required to qualify as true art, as one participant in the USA highlighted this ambivalent perception of AI art: "[AI] can make artistic things, sure. It can generate paintings and compose songs. But is it art? No! I don't think it is." (P2, USA, Academic). In addition, one participant exemplified the non-emotional nature of AI art through the lack of emotions, feelings and the creative spark that humans have: "[AI] lacks the artistic emotion, the creative spark. That spark is what makes us creative; it is nourished by feelings and emotions. You feel angry, and you express yourself. You feel sad, and you express yourself. A machine doesn't have that—it cannot feel these. That's why it cannot make real art, in my opinion" (P21, Türkiye, Academic).

When pressed on further elaborating this view, participants often referred to the technical nature of algorithmic systems; these systems learn what they 'know' from vast amounts of data and act on the way their algorithms are trained on. Hence, AI art is framed as a technical process, rather than a creative one, as one participant from Türkiye noted: "AI systems are built on data. What a system knows, what it does and how it does that, it is all based on the data that it has been trained on. The output a system hands out, a song, a picture or a text, it originates from probabilistic models, advanced mathematics if you want to put it that way. Humans create art through the element of creativity, machines do that through probability; this is the main distinction [between human art and AI art], I think" (P30, Türkiye, Private Sector).



This distinction exemplifies the binary understanding of technology and society, based on the tension stemming from the technical/social dualism, which is the dominant way of conceptualizing technology among engineers. How this binary understanding of AI [as a technical being] and creativity [as a humane quality] leads engineers to fundamentally distinguish between human art and AI art is exemplified with a striking statement by a participant in the USA as they stated, after a long explanation of how AI creates artistic outputs through a series of probabilistic processes: “In short; AI ‘generates’ art, humans ‘create’ it. This is the fundamental difference you are asking about” (P3, USA, Academic).

These sentiments reveal a core paradox in engineers’ thinking: if AI cannot produce original art, why invest in using it for music creation? The answer lies in AI’s perceived utility as a ‘tool’, and this perception is twofold. First, engineers tend to perceive AI as a tool for expanding access to new forms of art. Second, they view it as a tool for democratization of art and music.

Paradoxes of AI Agency in Music: Tool or Collaborator?

As engineers view creativity as a human quality which is not accessible to AI and art as a process and outcome of this quality, they tend to distinguish human art and AI art on the basis of elements of creativity such as emotions, feelings and the urge to express. Also, interviews revealed that while AI cannot create original art, it can be used as a ‘tool’ to unlock new artistic/musical forms and lower the barriers in the field of art.

When asked what might be the most positive aspect of MIR systems in the field of music, participants mostly referred to the technical capacities of these systems as their strong suit and how these capacities can have a twofold positive effect on music. One participant from the USA has mentioned both: “No, it cannot make real art. But it’s still a tool. A tool you can use to make and learn music. (...) You do not need years of practice; you do not need money to buy an instrument or hire a private tutor. You have feelings, you have ideas. You can use AI to express them in new ways” (P16, USA, Academic).

On the exploration side, AI’s technical qualities and excellence was foundationally conceptualized as a powerful means to explore new forms of music, to create songs that cannot be created



within a short time with the technical limits of human creativity: “[The most positive aspect] I think it might serve us creating new music; like new forms of music. [Can you explain this further?] How can AI help us in this?] You know, its technical capacities are beyond human. A complex AI system probably processes data thousands of times faster than us. You cannot do that [as a human]. You have cognitive limits. With AI, you can experiment on your ideas much faster than yourself. I think it enhances the human capacity of making ideas real, combining them, and trying new things” (P21, Türkiye, Academic).

The technique-oriented nature of AI was frequently mentioned as “beyond human capacity” by participants; emphasizing its use for realizing human ideas and expressions into a form of art and music on a transcultural level. Similar to the US context, participants in Türkiye classified AI as a technically powerful tool to explore new forms of music as well: “You’ll know it if you are playing guitar, there is a limit to what you can play on a guitar. Your fingers cannot be everywhere or you cannot play notes that are far from each other, outside the grip of your fingers. Now, you can do it with AI, remember GuitarPro? (...) You can explore new music, mix and compose sounds that are on your mind but beyond your skill to play” (P27, USA, Academic).

Resembling the posthuman argument of co-creativity (Davis, 2013; Fujita, 2017), engineers tend to conceptualize AI as a tool that enhances human capacities and actions, which is a commonly explored theme in posthuman and sociotechnical studies of technology and AI (Latour, 2005; Jatón, 2020). This moment represents the blurring of creative agency between human and AI; human becomes the initiator of the music creation process, as the agent with creative intentions and ideas. AI, on the other hand, while conceptualized as a ‘tool’, becomes a quasi-agent who processes these ideas into output, so to say, music. A new question arises from this: whose music is this? If human is not the songwriter or composer, does music still count as human’s?

Asserting the creative/non-creative duality once again, participants insisted on human is the main agent in this process. Circling back to AI’s lack of creativity, emotions and a mind, a wide theme occurred on participants’ answers as human as the main agent in co-creating music with AI. When asked on who is the owner of a song that has been composed using AI, the majority of the participants answered as human; putting creative ideas and intentions above the process of



composing itself, as one participant in the USA noted: “Of course it is human who should get the credit. Human gave the idea to the machine, right? If a human did not come up with that idea, would the machine compose that song? No. So, it is human’s [the song]; AI helped human to compose it, it didn’t create a song out of nowhere. That’s all” (P3, USA, Academic).

At a transcultural level, ‘protecting’ creative agency by associating it with human qualities once again reveals the similarities between the two cultural contexts, showing the homogenizing effect of the anthropocentric worldview based on the technical/social duality experienced by engineers. One participant in Türkiye noted that: “Well, that’s a good question. I’d go with human. AI was used as a tool to compose music in this scenario; human prompted and used it as a composing tool. I think art is about having ideas., man. AI is an instrumental tool in this process; it has done the technical side of the job” (P35, Türkiye, Academic). Another participant in Türkiye used the analogy of a lion’s share to elucidate this matter further, handing the share to human as the creator: “Of course the song belongs to the musician. AI helps them compose it, sure. But the idea for the song didn’t come from the AI. It is a useful technical assistant, no doubt, and clearly supports the human during composition. But if you ask me, I’d give the lion’s share of credit to the person who came up with the idea for the song” (P30, Türkiye, Private Sector).

These responses reaffirm a shared epistemic commitment among engineers: creativity is rooted in ideas, emotions, and intentionality; capacities reserved for the human. Despite AI’s technical contribution to the production process, participants in both contexts strongly emphasized that creative ownership remains firmly with the human, as the initiator of the process with their ideas. This shared perspective reflects a culturally resilient anthropocentrism, where the distinction between tool and agent is upheld through appeals to a technical/social binary, ensuring that creative credit remains an exclusively human domain, keeping AI at bay as a facilitator or a tool with technical excellence.

While engineers across contexts consistently reject the notion of AI as a creative agent, their reflections reveal a more complex relationship unfolding in practice. AI is framed as a non-sentient tool, devoid of emotions, intention, or authorship; yet it plays an increasingly generative role in the creative process. It accelerates idea development, enables artistic experimentation beyond



human skill, and democratizes access to creative production. This paradox -AI as both 'subordinate' instrument and 'essential' collaborator- signals a shift in how agency is distributed in technologically mediated creative acts. Although the participants sought to preserve a firm boundary between human originality and machine execution, their accounts point towards a more entangled dynamic, where authorship became co-constructed across human and machine.

Music to the People?: AI as a Democratizing Tool in Music Production

Art has traditionally been imagined as the outcome of a unique creative impulse, residing in a metaphorical ivory tower inaccessible to most, severed from its social context. Yet, as the sociology of art has long emphasized, art is deeply embedded in social interactions (Becker, 1982), shaped by class positions (Graham, 1997), and conditioned by the interplay of individuals' economic and cultural capital (Bourdieu, 1992). Beneath this perceived singularity lies a social logic: the so-called "creative impulse" is, in fact, contingent on access to time, resources, and the cultural conditioning required to convert these into artistic output (Bourdieu, 1979). Accordingly, the longstanding sociological concern with how art becomes linked to dominant classes -those who can interpret, produce, and sustain it- has generated enduring interest in the methods and necessity of artistic democratization.

Through all interviews, the most frequently mentioned effect as the most promising aspect of music AI has appeared as its effect on the democratization of art and music. Built on the above-mentioned view of AI as a 'tool', participants highlighted its potential in "lowering the barriers of art/music" as a positive effect. Oftenly, participants used a retrospective approach in emphasizing the promise of democratization of AI, summoning memories from their childhood or early youth years and how music was inaccessible for those who are devoid of sufficient economic and cultural capital. One participant stated the most promising aspect of AI in the field of music that resonates the consensus of all participants: "The most positive impact could be removing the barriers in music. As these systems improve, I think everyone will be able to create whatever music they want to use AI. That would be a real gain" (P1, USA, Academic).



Based on their personal experience, a participant from the USA has stated this democratization as follows: “When I was a kid, I always wanted to play the bass, okay? But my family couldn’t afford to buy me one or pay for lessons. I only got my first bass when I started earning my own money. AI has the potential to change that. A kid from a family with no money can now make music using these systems. Furthermore, if they want to learn, there are systems for that too; most of them are free. I really care about this kind of AI, one that serves this purpose” (P3, USA, Academic).

A transcultural shared understanding between software engineers once again revealed on the topic of democratization of music. Interviews show that the statements of the Turkish participants resemble the statements of the participants who were interviewed in the USA, as one participant from Türkiye stated: “Most promising aspect? Hmm. I think it is that: everyone will be able to make music, music will be accessible to all [with AI systems]. (...) You don’t have the money to hire a private tutor for your child or yourself? Use AI to learn music. You want to know how to play a certain song the easiest way? You can use AI for that as well; go ask ChatGPT even, it does wonderful work teaching you music for free” (P35, Türkiye, Academic). The notion of AI-enabled democratization aligns with discussions in the literature that highlight how (or if) generative technologies can redistribute access to artistic fields such as music by lowering the material and educational thresholds of participation (Park, 2024; Anantrasirichai & Bull, 2021). AI systems are understood to transform music-making from an exclusive practice requiring institutional support into one that can be undertaken independently, often through free or low-cost platforms. In this framing, creativity is no longer tethered to elite networks or formal expertise, but is reimagined as a socially accessible capacity, unlocked through algorithmic support.

To comprehend how the negative potential effects of AI in music is perceived by engineers, participants then asked on the negative aspects or potentials that AI may possess in the field of music and art. Despite being built on the exploitation of both nature (Crawford, 2021), labor (Gray & Suri, 2019) and culture (Noble, 2018; Katz, 2020), the most frequently mentioned negative aspect of AI in music by participants occurred as the potential of low quality music it may produce. One participant in the USA offered this view: “(Laughs) We might hear a lot of bad music, that might be the worst impact of AI. After all, not everyone has an excellent ear for music” (P4, USA, Academic).

The transcultural comprehension of AI and its effects among software engineers was once again revealed in the statements of participants, which exemplifies the homogenizing effect of the Silicon Valley ideology (Sadowski, 2020). Resembling the context of the USA, participants in Türkiye were concerned with lower quality, ‘bad’ music that might be produced with AI rather than its effects on nature, labor and culture: “Shit music. If everyone [like people without a sense of music] gets their hands on these, we will start hearing music around every corner. It could kill music, I am saying to you” (P26, Türkiye, Academic).

Despite extensive critical discourse on the exploitative foundations of AI systems, ranging from environmental extraction (Crawford, 2021) and labor invisibility (Gray & Suri, 2019) to algorithmic cultural dispossession (Noble, 2018; Katz, 2020), participants in this study rarely mentioned such structural concerns when asked about the potential harms of AI in the domain of music. Instead, the most frequently cited negative effect was the risk of AI generating “bad” or “low-quality” music. This concern was not about exploitation but about aesthetic degradation; anxieties that AI might dilute artistic standards by enabling widespread creative participation without discernment or musical sensitivity. Rather than questioning the conditions under which AI is produced or deployed, participants predominantly framed its danger as the proliferation of amateurism.

This pattern of response illustrates what Sadowski (2020) terms the homogenizing influence of the Silicon Valley ideology: a worldview that centers technical outputs while abstracting away the sociopolitical costs of computational systems. Across both the U.S. and Turkish contexts, engineers expressed a shared unease with AI’s capacity to flood cultural spaces with content they deemed substandard, yet largely bypassed questions of extractive infrastructures or cultural appropriation. In doing so, they reproduced a narrow conception of harm rooted in taste and quality, rather than justice or accountability. This selective framing reinforces a depoliticized vision of technology, where concerns about degradation are aesthetic rather than systemic; a telling reflection of how globalized tech imaginaries shape even critical responses to AI.

Engineers’ discussions frequently centered on aesthetic concerns such as the proliferation of “bad music,” yet remained largely silent on the social harms embedded in AI systems. Critical scholarship has shown how these technologies rely on precarious forms of hidden labor in global



annotation economies (Gray & Suri, 2019), reproduce existing patterns of inequality and discrimination (Noble, 2018), and depend on extractive infrastructures that extend from data appropriation to environmental cost (Crawford, 2021). Such dynamics reveal that the celebrated neutrality of AI rests on systems that exploit vulnerable workers, reinforce social hierarchies, and externalize harm, impacts that were absent from participants' accounts. In this light, the omissions in engineers' narratives are not incidental but symptomatic of a technical-rational framing that narrows creativity to a matter of computation while displacing its political and ethical dimensions. This framing, rooted in the epistemic habits of engineering culture, privileges efficiency, functionality, and problem-solving, while relegating questions of labor, inequality, and power to the margins. As a result, structural harms remain unacknowledged not because they are invisible, but because they fall outside the boundaries of what is recognized as relevant to technical innovation.

At the same time, this emphasis on accessibility resonates with theories of cultural redistribution in digital societies, where emerging technologies are celebrated for expanding participation while also inviting scrutiny on inequalities and data-driven exclusion (Huang et al., 2024). Participants' insistence on AI's democratizing role reveals a technosocial imaginary in which structural barriers in art and education (particularly those tied to class) can be mitigated through computation. Yet this optimistic vision rests on an instrumentalist understanding of democratization that often overlooks systemic concerns such as technological ownership, algorithmic bias, unequal digital literacies, and the reproduction of structural inequalities (O'Neil, 2016; Noble, 2018; Benjamin, 2019; Crawford, 2021). The result is a discourse that celebrates AI as a bridge between historically excluded individuals and creative opportunities, while leaving unexamined the infrastructures of power on which such access depends. Taken together, these narratives expose a paradox: AI is imagined as both a democratizing force and a vehicle of exclusion, a tool that promises redistribution even as it reproduces the very inequalities it claims to overcome.

A Resource to Appropriate: Data, Technological Innovation and Digital Colonialism

Interview data show that software engineers mainly conceptualize AI as a 'tool' with positive effects in the field of music. In music creation or composition process, it is perceived as a technology



which enhances human's creative abilities with its technical supremacy; this allows one to create new forms of music, new sounds that were not explorable without the 'help' of AI. Also, they perceive the potential effects of the integration of AI in the field of music as a democratizing one; lowering the longstanding barriers to music and art in favor of people who do not have the means or capital to access it before the rise of AI. This discourse on AI aligns with the perspective of co-creativity and its argumentation on technology (in particular AI) as not the destroyer of art but the redeemer of it in favor of people (Davis, 2013; Amerika, 2011, Fujita; 2017). Alas, the emergence of this 'democratizing tool' raises an important question which is overlooked by the co-creativity approach and posthumanist thought. How does this technology become a useful 'tool' in creative process? How is the technical superiority of this technology achieved and at what cost?

AI technologies need to be trained on vast amounts of data in order to be 'intelligent', and the appropriation of this data is a wide concern involving the unethical use of personal information and the exploitation of nature and labor (Crawford, 2021; Gray & Suri, 2019; Casilli, 2025). In other words, this complex process of exploitation, exportation and extraction gives AI the power to 'democratize' art. Are the engineers, as creators of AI systems, aware of the social and political effects of AI? To inquire about the subjective understandings of the engineers on this question, the participants were asked if they knew the origins of the data they used to train their algorithms. In both the USA and Türkiye, the answers and statements of participants showed a shared indifference on the origins of data they use almost unanimously (29 out of 35 participants). When asked if they knew who contributed to these datasets, the indifference was the main attitude of the engineers here as well. Engineers mostly did not know how these datasets were arranged, organized and annotated, emphasizing the 'open source' nature of the datasets. One participant in the USA stated: "Well, it is a large dataset and I don't know exactly who contributed to it since it is open source. Anyone can contribute and anyone can use it, so it is hard to say. (...) There are groups working on creating datasets for MIR studies, they might have done the chunk of work (P19, USA, Academic). A Turkish participant highlighted this indifference: "Actually, it can be anyone; you can contribute to it too if you want." [How can anyone, including me, contribute to it?] Because it is open source, open to contribution of everyone" (P28, Türkiye, Private Sector).



The datasets used to train the MIR systems were once someone's music, a product of labor, the livelihood of musicians. Even if they do not know the origins of the data they use, are the engineers aware that there might be some social, political and ethical problems surrounding the datasets? Pressing on that matter, participants were then asked if they were aware of ethical issues such as copyright abuse or data security. The indifference surrounding the origins of data was revealed once again in the statements of most participants: they had knowledge of the ethical concerns of data extraction, and they viewed it as a 'collateral damage' that someone must pay for the sake of technological innovation. One participant, an academic in the USA, gave a clear statement that exemplified this point: "I know that there are issues surrounding copyright and I know that it is unethical to process copyrighted material but I am not the one who does that, you know (...) Also, I feel like people would be lying if they insist that the check every box in ethics; these systems can't be trained without sufficient amount of data" (P4, USA, Academic).

The abovementioned indifference on the ethical problems surrounding AI reveals the effect of the technical-rational engineering mindset or ideology on perceiving the social, political and ethical consequences of technologies. This mindset defines engineering as the pursuit of solving problems in the most analytical, systematic, and efficient way possible (Bucciarelli, 1994; Newberry, 2015). While this perspective shapes engineering processes through a focus on order, controllability, and precision, it simultaneously positions the multilayered, uncertain, and dynamic nature of the social world as antithetical to order, effectively excluding it from the domain of engineering (Devon, 2004; Bucciarelli, 1994). Within this framework, technologies are conceptualized as solely technical and are excluded from the social world (Devon, 2004; Erbay & Adaş, 2024), resulting in a technochauvanistic approach that creates a technological filtering of social world as well (Broussard, 2018). Thus, ethical, social and political concerns become expendable in favor of technological innovations and development. f

This becomes a crucial moment, in which even the conventional understanding of property rights, the most sacred essence of capitalist modernity, now faces the challenge of the new technological zeal of digital capitalism. According to the participants, in a perfect world, ethical rules can and should be followed; however, in reality, it is not possible: "Let's talk it through, how can everyone get paid? How can everyone's consent be taken? There are millions of people who make music or sounds



out there. We don't know which version is processed as data, we don't know where it was taken from, you see? [Label companies] own most music, not musicians. Streaming services also. Is it [the payment] going to musicians?" (P26, Türkiye, Academic). Reflecting the same view, a participant in the USA stated that while processing copyrighted material presents an ethical problem, AI creators or companies will find a way around, a back door to the situation: "Copyright does not protect the material itself, man. It is not technical protection. I wouldn't do that [annotating copyrighted material as data] but, people willing to do it always find a way [to use and justify copyrighted material]. You know the trick, change the material a little bit before using it, change some parts, some lines in a song and you might avoid being sued; that is a common thing" (P11, USA, Private Sector).

Participants who work in academia developed a dichotomy on the use purpose of copyrighted music material; their answers reflect a science/commerce dichotomy on ethical questions surrounding data. Academics across two cultural contexts share an understanding of training data and how it is obtained as a means to scientific and technological development, turning unethical extraction of data from musicians' works into 'collateral damage' once again. One participant in the USA mentioned this view, drawing a line between the scientific use and commercial use of data: "We do not use the data for commercial purposes. We do not try to develop algorithms to sell them or turn them into money; it is for scientific purposes. Also, we -as a team- work here in a lab, data won't leave here; I think this makes a difference, science always developed like this. Maybe that doesn't sound great, but there is no money involved" (P2, USA, Academic). Also worth noting, participants in academia did not mention their project grants (which involve data processing in vast amounts) or which institutions they were involved with in these projects.

In this sense, data becomes a 'resource to appropriate' for the sake of scientific and technological innovation; it can be extracted and obtained in unethical ways since if they do not do that, someone will certainly do it. In this process, musicians become people who are in possession of precious metals, like native South American peoples of 15th century, who possessed enormous amounts of gold with no intentions of commercializing it. Software engineers, guided by a technical-rational ideology (Devon, 2004; Newberry, 2015), frame this 'resource' much like the Spanish *conquistadors* who, after a long and arduous journey from the Old World to the New World, encountered the fabled



gold of El Dorado and claimed it as their rightful possession. This metaphor points to a logic of entitlement, one that legitimizes the extraction of data without regard for the contexts or communities from which it originates. Even centuries later, in a vastly different domain, this same logic appears to operate in a tacit, yet powerful, way. Software engineers classify data as a ‘resource’, often overlooking the labor, cultural diversity, or intellectual property concerns embedded in the process of datafication (Couldry & Meijas, 2019; Muldoon & Wu, 2023). This orientation reflects a mindset similar to that of colonial regimes, where the economic and technological benefits of exploiting natural and cultural resources were privileged over the devastating costs borne by the colonized. Just as colonial powers once seized natural resources and human labor from other societies without consent, today, cultural products such as music -generated through human labor and embedded in community knowledge- are harvested without permission and used to train AI systems that reproduce Western musical norms. This dynamic reflects what has been called “data colonialism,” in which AI is presented as a democratizing force, while in practice it relies on extractive mechanisms that mirror the logics of colonialism (Couldry & Meijas, 2019; Goetze, 2024). Systems celebrated for democratizing creativity are, in fact, built upon and reproducing colonial practices, reflecting not only the sociopolitical dimensions of these systems but also the ideologies of ownership, authorship, and entitlement that underlie them. In this view, AI’s creative capacities and agency cannot be fully understood without attending to the colonial frameworks in which they are partially embedded.

Closing Remarks: Demystifying Democratization

This study explored how software engineers conceptualize creativity, art, and authorship in the context of music AI, revealing a recurring paradox: while AI is celebrated as a tool that lowers barriers to artistic expression and expands access to music creation, its underlying structures often remain invisible, unquestioned, and politically neutralized. Engineers consistently frame AI as a non-creative yet generative collaborator, one that provides musical outputs while lacking emotional intention or agency. Within this framing, AI emerges as a democratizing force, capable of redistributing artistic opportunity to those historically excluded from the cultural elite. However, this vision of democratization, as compelling as it may seem, rests on an instrumental logic that



obscures the material conditions that make AI creativity possible. This instrumental logic aligns with the technical-rational worldview of engineering (Bucciarelli, 1994; Devon, 2004; Newberry, 2015), which software engineers inherit from classical engineering and, in the end, become deacons of capitalist innovation of technology (Noble, 1977).

Framing AI from a technical/social duality, in which the technical side clearly occurs as the dominant paradigm, this technochauvanistic stance on AI and technology adopted by engineers (Broussard, 2018) subtly gives rise to AI being a quasi-agent while being conceptualized as a technologically neutral 'tool', by isolating the social and political aspects of this technology and trapping it in the neutrality-bound world of technology. Thus, through this view, AI systems in creative fields such as music are celebrated as 'tools' for exploring new forms of music; in other words, AI is perceived as just a technically-perfected tool to serve human, as the sole possessor of ideas, emotions and a mind by engineers. It is also perceived as a tool to democratize art, which is historically exclusive to those who can afford it [both economically and culturally] (Bourdieu, 1983; 1992; Graham, 1997), creating a celebratory narrative around AI and its promise of unlocking the gates and lowering the barriers of artistic exploration and democratization.

What is often omitted from this celebratory narrative is the structural asymmetry embedded in AI systems themselves: their reliance on vast quantities of training data gathered without consent, on precarious labor in the Global South, and on extractive computational systems that externalize social and ecological costs (Crawford, 2021; Gray & Suri, 2019; Dyer-Withey et al., 2019). In this sense, the 'democratization' promised by AI becomes not solely a liberation from inequality but its reconfiguration under a digital guise, reflecting the centuries-old perspective of a colonialist (Couldry & Meijas, 2019; Muldoon & Wu, 2023). Beneath the rhetoric of inclusion lies the reality of appropriation and dispossession, where art becomes data, creativity becomes a dataset, and cultural labor is transformed into a free resource for algorithmic optimization. Far from dismantling existing hierarchies in art and culture, co-creative AI systems risk reproducing them in subtler, more opaque forms. The discourse of AI as an enabler of creativity diverts attention away from the sociopolitical origins that shape who gets to create, who gets to be recognized, and who benefits from these systems. Without a critical sociological lens, the co-creativity framework remains incomplete, offering not a genuine redistribution of artistic agency, but a sanitized illusion



of participation. As AI continues to reshape the field of music and beyond, it becomes increasingly urgent to interrogate not just what these systems produce, but also “how, by who and for whom they are produced” (Joyce et. al, 2021). Thus, the promise of ‘democratization’ becomes the ‘myth’ of democratization, concealing the social, political and ethical problems surrounding AI by introducing it as a redeemer of art and music.

The findings of this study show the necessity of integrating sociological, ethical, and political perspectives into the analysis of AI and creativity. As engineers continue to develop systems that shape how art is produced, interpreted, and distributed, it becomes increasingly important to question the values, labor structures, and epistemologies encoded within these technologies. Future research should incorporate a wider range of perspectives, including data annotators, engineers working in the Global South and independent musicians whose practices unfold outside institutional settings. Such an expansion would make visible experiences shaped by precarity, asymmetry, and exclusion, offering a more comprehensive picture of how AI intersects with cultural production. Questions of ethics, ownership, and the habit-shaping capacities of AI, in this light, move to the center of inquiry rather than remaining peripheral. Future analyses, therefore, can advance by integrating the critical sociology of technology with empirical accounts, situating AI not only as a technical resource but also as a social force embedded in structures of power, labor, and creativity.

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References

- Acemođlu, D., & Johnson, S. (2022). *Power and progress: Our thousand-year struggle over technology and prosperity*. New York: PublicAffairs.
- Adorno, T. W. (1997). *Aesthetic theory* (R. Hullot-Kentor, Trans.). Minneapolis: University of Minnesota Press. (Original work published 1970)
- Amerika, M. (2011). *remixthebook*. Minneapolis: University of Minnesota Press.
- Anantrasirichai, P., & Bull, D.R. (2021). *Artificial Intelligence in the creative industries: A review*. *Artificial Intelligence Review*, 55(1), 589–656. <https://doi.org/10.1007/s10462-021-10039-7>
- Aristotle. (1999). *Nicomachean ethics* (T. Irwin, Trans.). Indianapolis: Hackett Publishing Company. (Original work published ca. 350 BCE)
- Barthes, R. (1977). The death of the author (S. Heath, Trans.). In R. Barthes, *Image–Music–Text* (pp. 142–148). London: Fontana Press. (Original work published 1967)
- Becker, H. S. (1982). *Art worlds*. USA: University of California Press.
- Bellanova, R., & de Goede, M. (2022). The algorithmic regulation of security: An infrastructural perspective. *Regulation & Governance*, 16(1), 102–118. <https://doi.org/10.1111/rego.12338>
- Benjamin, R. (2019). *Race after technology: Abolitionist tools for the new Jim code*. UK: Polity Press.
- Bergson, H. (1911). *Creative evolution* (A. Mitchell, Trans.). New York: Henry Holt and Company.
- Boden, M. A. (2004). *The creative mind: Myths and mechanisms*. London: Routledge.
- Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste* (R. Nice, Trans.). Cambridge, MA: Harvard University Press.
- Bourdieu, P. (1993). *The field of cultural production: Essays on art and literature* (R. Johnson, Ed.). New York: Columbia University Press.
- Brayne, S. (2017). Big data surveillance: The case of policing. *American Sociological Review*, 82(5), 977–1008.
- Briot, J.-P., Hadjeres, G., & Pachet, F.-D. (2019). Deep learning techniques for music generation – A survey. *ACM Computing Surveys*, 52(1), 1–35.
- Broussard, M. (2018). *Artificial unintelligence: How computers misunderstand the world*. USA: MIT Press.
- Bucciarrelli, L. L. (1994). *Designing engineers*. USA: MIT Press.
- Casey, M. A., Veltkamp, R. C., Goto, M., Leman, M., Rhodes, C., & Slaney, M. (2008). Content-based music information retrieval: Current directions and future challenges. *Proceedings of the IEEE*, 96(4), 668–696. <https://doi.org/10.1109/JPROC.2008.916370>
- Casilli, A. (2025). *Waiting for robots: The hired hands of automation*. USA: University of Chicago Press.
- Couldry, N., & Mejias, U. A. (2019). *The costs of connection: How data is colonizing human life and appropriating it for capitalism*. Stanford, CA: Stanford University Press.
- Crawford, K. (2021). *Atlas of AI: Power, politics, and the planetary costs of artificial intelligence*. New Haven, CT: Yale University Press.
- Danto, A. (1964). The artworld. *The Journal of Philosophy*, 61(19), 571–584. [doi:10.2307/2022937](https://doi.org/10.2307/2022937)
- Davis, N. (2013). *Human-computer co-creativity: Blending human and computational creativity*. In *Doctoral consortium at the ninth AAAI conference on artificial intelligence and interactive digital entertainment (AIIDE 2013)*, 1–12.
- Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia* (B. Massumi, Trans.). Minneapolis: University of Minnesota Press.
- Devon, R. (2004). Engineering education and the social. *Journal of Engineering Education*, 93(1), 87–94. [doi:10.1002/j.2168-9830.2004.tb00790.x](https://doi.org/10.1002/j.2168-9830.2004.tb00790.x)
- Dhariwal, P., & Jun, H. (2020). Jukebox: A generative model for music. *OpenAI Blog*. Retrieved from <https://openai.com/blog/jukebox>



- Downie, J. S. (2003). Music information retrieval. *Annual Review of Information Science and Technology*, 37(1), 295–340. doi:10.1002/aris.1440370108
- Durkheim, E. (1995). *The elementary forms of religious life* (K. E. Fields, Trans.). New York: Free Press. (Original work published in 1912)
- Dyer-Witheford, N., Kjøsen, A. M., & Steinhoff, J. (2019). *Inhuman power: Artificial intelligence and the future of capitalism*. London: Pluto Press.
- Ekbia, H. R. (2018). Heteromation and other stories of computing and capitalism. In H. R. Ekbia & B. Nardi (Eds.), *Heteromation, and other stories of computing and capitalism* (pp. 1–24). Cambridge, MA: MIT Press.
- Elias, N. (1993). *Mozart: Sociology of a genius* (E. Jephcott, Trans.). Polity Press. (Original work published 1969)
- Eubanks, V. (2018). *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.
- Erbay, B., & Adaş, E. B. (2024). Exploring perceptions of algorithmic bias among software engineers: A case study of software engineers in İzmir, Türkiye. *Sociology of Science and Technology*, 15(4), 142–162. <https://doi.org/10.24412/2079-0910-2024-4-142-162>
- Erbay, B., & Joyce, K. (2025). Opening the black box of AI: A sociological study of AI as a network. *Journal of Economy, Culture and Society*, 71, 1-20. <https://doi.org/10.26650/JECS2024-1467424>
- Ford, M. (2015). *The rise of the robots: Technology and the threat of a jobless future*. New York: Basic Books.
- Fujita, M. (2017). Towards posthuman creativity: Artificial intelligence and co-creativity in digital music. *Journal of Creative Music Systems*, 2(1). Retrieved from <https://jcms.org.uk/>
- Galanter, P. (2016). Generative art theory. In C. Paul (Ed.), *A companion to digital art* (pp. 146–180). John Wiley & Sons. <https://doi.org/10.1002/9781118475249.ch5>
- Goetze, T.S. (2024). AI art is theft: Labour, extraction, and exploitation [Conference presentation]. In Proceedings of the 2024 ACM Conference on Fairness, Accountability, and Transparency (FAcCT '24) (pp. 186–196). ACM. <https://doi.org/10.1145/3630106.3658898>
- Graham, G. (1997). *Philosophy of the arts: An introduction to aesthetics* (2nd ed.). London: Routledge.
- Gray, M. L., & Suri, S. (2019). *Ghost work: How to stop Silicon Valley from building a new global underclass*. Boston: Houghton Mifflin Harcourt.
- Hall, S. (1992). Encoding/decoding. In S. Hall, D. Hobson, A. Lowe, & P. Willis (Eds.), *Culture, media, language: Working papers in cultural studies, 1972–79* (pp. 128–138). Routledge.
- Hayles, N. K. (1999). *How we became posthuman: Virtual bodies in cybernetics, literature, and informatics*. Chicago: University of Chicago Press.
- Herremans, D., Chuan, C.-H., & Chew, E. (2017). A functional taxonomy of music generation systems. *ACM Computing Surveys*, 50(5), 1–30.
- Huang, M., Jin, M., & Li, N. (2024). Augmenting minds or automating skills: The differential role of human capital in generative AI's impact on creative tasks. *arXiv*. <https://doi.org/10.48550/arXiv.2412.03963>
- Jaton, F. (2020). *The constitution of algorithms: Ground-truthing, programming, formulating*. Cambridge, MA: MIT Press.
- Joyce, K., Smith-Doerr, L., Alegria, S., Bell, S., Cruz, T., Hoffman, S. G., Noble, S. U., & Shestakofsky, B. (2021). Toward a sociology of AI: A call for research on inequalities and structural change. *Socius*, 7, 1-11.
- Kant, I. (2000). *Critique of the power of judgment* (P. Guyer & E. Matthews, Trans.). Cambridge: Cambridge University Press. (Original work published 1790)
- Katz, Y. (2020). *Artificial whiteness: Politics and ideology in artificial intelligence*. New York: Columbia University Press.
- Latour, B. (1992). Where are the missing masses? The sociology of a few mundane artifacts. In W. E. Bijker & J. Law (Eds.), *Shaping technology/building society: Studies in sociotechnical change* (pp. 225–258). Cambridge, MA: MIT Press.
- Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford: Oxford University Press.
- Lupton, D. (2016). *The quantified self: A sociology of self-tracking*. New York: Polity.
- Marvasti, A. B. (2004). *Qualitative research in sociology*. Sage Publications.
- Marx, K. (1978). *Economic and philosophic manuscripts of 1844*. In R. C. Tucker (Ed.), *The Marx-Engels reader* (2nd ed., pp. 66–125). New York: W. W. Norton. (Original work written 1844)
- McCormack, J., Gifford, T., & Hutchings, P. (2019). Autonomy, authenticity, authorship and intention in computer generated art. In *Proceedings of the International Conference on Computational Creativity* (pp. 145–152). Association for Computational Creativity.
- McLuhan, M. (1964). *Understanding media: The extensions of man*. McGraw-Hill.
- Moore, P. V. (2017). *The quantified self in precarity: Work, technology and what counts*. London: Routledge.
- Muldoon, J., & Wu, B.A (2023). Artificial intelligence in the colonial matrix of power. *Philos. Technol.* 36. <https://doi.org/10.1007/s13347-023-00687-8>
- Neff, G., & Nafus, D. (2016). *Self-tracking*. USA: MIT Press.
- Noble, D. F. (1977). *America by design: Science, technology, and the rise of corporate capitalism*. New York: Alfred A. Knopf Press.
- Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism*. New York: NYU Press.
- O'Neil, C. (2016). *Weapons of math destruction: How big data increases inequality and threatens democracy*. New York: Crown Publishing.



- Park, S. (2024). The work of art in the age of generative AI: Aura, liberation, and democratization. *AI & Society*, 40(3). <https://doi.org/10.1007/s00146-024-01948-6>
- Plato. (1961). *Ion*. In E. Hamilton & H. Cairns (Eds.), *The collected dialogues of Plato* (pp. 215–228). Princeton: Princeton University Press. (Original work written ca. 375 BCE)
- Wagenaar, H. & Prainsack, B. (2021). *The pandemic within: Policy making for a better world*. Policy Press.
- Sadowski, J. (2020). *Too smart: How digital capitalism is extracting data, controlling our lives, and taking over the world*. Cambridge, MA: MIT Press.
- Schedl, M., Gómez, E., & Urbano, J. (2014). Music information retrieval: Recent developments and applications. *Foundations and Trends in Information Retrieval*, 8(2–3), 127–261. <https://doi.org/10.1561/15000000042>
- Schopenhauer, A. (1818). *The world as will and representation* (E. F. J. Payne, Trans., 1958). New York: Dover Publications.
- Seaver, N. (2019). Knowing algorithms. In J. Vertesi, D. Ribes, & G. C. Bowker (Eds.), *DigitalSTS: A field guide for science & technology studies* (pp. 412–422). Princeton, NJ: Princeton University Press.
- Silverman, D. (2020). *Interpreting qualitative data* (6th ed.). Sage Publications.
- Weber, M. (2002). *The Protestant ethic and the spirit of capitalism* (S. Kalberg, Trans.). Los Angeles: Roxbury Publishing Company. (Original work published 1905)
- Williams, R. (1977). *Marxism and literature*. Oxford University Press.
- Wingström, R., Hautala, J., & Lundman, R. (2022). Redefining creativity in the era of AI? Perspectives of computer scientists and new media artists. *Creativity Research Journal*, 36(2), 177–193. doi:10.1080/10400419.2022.2050569
- Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. New York: PublicAffairs.

