

How is artificial intelligence reshaping traditional processes of music creation?

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**On my honor as a University Student, I have neither given nor received unauthorized aid
on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments**

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Introduction

A new kind of composer is emerging in the music world—artificial intelligence. No longer confined to the background, AI now actively shapes the creative process, collaborating with musicians in ways that seemed impossible just a decade ago. This isn't some distant future; it's part of the music world today. AI has intertwined itself into the creative process, assisting musicians in ways we couldn't have imagined a decade ago. Personally, as someone who finds music both an outlet and a source of inspiration, I'm fascinated by how AI is changing the art of music creation.

Artists like Taryn Southern have collaborated with AI to produce entire albums, such as *I AM AI*, showcasing how technology can generate melodies, harmonies, and full arrangements that sound almost human. Tools like Google's Magenta further demonstrate how AI can assist in creating compositions by responding to prompts, providing an expansive creative toolkit. But this new partnership comes with its own set of questions. Can a machine-created song ever be as genuine as one born from human emotion? What happens to creativity when machines enter the mix? Some musicians welcome AI as a helpful ally, while others fear it may overwhelm human artistry, creating an industry flooded with machine-made sounds.

My research explores the question: *How is artificial intelligence reshaping traditional processes of music creation?* To address this, I am proposing two complementary projects: a technical project that develops a music recommendation app and Bluetooth-enabled speaker to explore AI's role in enhancing music accessibility and personalization, and an STS research paper that investigates the ethical and societal implications of AI's growing influence on creativity and human expression in music. I aim to understand how AI can democratize music, opening doors for those who may not have formal training, while also diving into the ethical and social

implications of these changes. As AI-generated music fills our playlists, it challenges us to rethink what it means to create. Is this technology enhancing human potential, or is it quietly transforming the meaning of creativity?

Technical Project

For my technical project, I'm developing a music recommendation app paired with a Bluetooth-enabled speaker, designed to elevate the music experience by integrating AI-driven personalization with intuitive, interactive hardware. This project highlights the creative possibilities AI brings to music creation, allowing for a highly customized listening experience.

The iOS app serves as the central platform for users to interact with AI-powered recommendations. Users can specify their mood, genres, or even particular characteristics, such as tempo or emotional tone. The AI uses this information to generate personalized playlists that align with each user's preferences. The app integrates Spotify's API to provide users with access to an extensive library of songs, enhancing the range of music that the AI can suggest. Unlike Spotify, which focuses on broad recommendations based on user listening history, this app emphasizes AI-driven, mood-based personalization, along with features for social engagement and collaborative playlist creation. The app includes social networking features as well, allowing users to share their custom playlists, enhancing connectivity within the music experience. This unique interface merges AI-driven curation with user control, making it easy for listeners to receive tailored playlists while still guiding the creative process.

The Bluetooth speaker component is designed to complement the app and add a physical, interactive layer to the music experience. Equipped with a touchscreen display, the speaker connects seamlessly to the app, allowing playback information to be displayed in real time. Users

can see song titles, artist names, and manage playback controls directly on the screen, including options to play, pause, skip, or rewind songs.

Together, the app and speaker create a cohesive AI-powered system that allows users to actively shape their music experience. The app's machine learning algorithms continually adapt to users' tastes, and the speaker's interface provides direct, tangible interaction with the music. This combination reflects the core idea of how AI can play a supportive role in music creation—blending user preferences with AI-driven suggestions to create playlists that feel highly personalized. However, this project also invites reflection on how AI-driven music creation affects our relationship with music. By automating parts of the creative process, are we enhancing accessibility and personalization at the cost of traditional artistic discovery? This project aims to explore both the benefits and limitations of AI as a collaborator in the creative process, reshaping how we think about music creation.

STS Project

The integration of artificial intelligence into music creation raises important questions about creativity, authenticity, and human expression. My project examines the technical capabilities AI brings to music, while also exploring the philosophical and societal impacts of AI's increasing role in the creative process.

AI's role in music creation has evolved rapidly. Early applications focused on simple support tasks, such as replicating basic harmonic and rhythmic patterns found in genres like classical and jazz (Anagnostopoulou et al., 2002). These models demonstrated AI's ability to mimic musical structure but lacked the emotional depth and improvisational flair of human musicians. These

early attempts at music generation were valuable in demonstrating AI's ability to recognize and mimic structure, yet they clearly lacked the emotional depth and improvisational flair of human musicians. This gap between technical accuracy and interpretive depth remains an essential limitation of AI, highlighting why AI remains a complement, rather than a substitute, for human musicianship (Anagnostopoulou, Ferrand, & Smaill, 2002).

Today's advancements have pushed AI far beyond these initial capabilities, with tools like Google's Magenta and OpenAI's Jukebox allowing users to generate full compositions based on prompts. *Performer Magazine* highlights how artists like Taryn Southern have begun collaborating with AI to explore new creative possibilities. Southern's album *I AM AI*—produced with Amper Music—demonstrates that AI can now assist in composing melodies, harmonies, and entire arrangements, making music creation accessible even to those without formal training (Ricci, 2020). However, as Southern and other musicians report, AI's outputs often require human refinement to meet musical standards, such as coherence, originality, and emotional resonance. This necessity highlights a new type of creative partnership where human expertise is essential for refining AI-generated ideas into polished works. In this sense, AI is reshaping music creation by providing an endless toolkit of ideas and patterns, yet it still relies on human oversight and interpretation.

However, with AI's growing presence, certain tensions have arisen within the industry. *Impact Lab* (2023) discusses how AI-generated music's accessibility has resulted in a flood of machine-made content, making it harder for unique voices to stand out. For artists trying to build recognition, this influx of AI-generated music risks diluting the value of human-created compositions, raising ethical questions about ownership and artistic integrity. The presence of unauthorized AI-created songs using the voices of famous artists without permission has also

brought copyright into question. As a response, organizations like PRS for Music have advocated for clearer protections to help artists retain ownership over their work, recognizing that AI's potential benefits must be balanced against the rights of human creators (PRS for Music, 2024). I believe these developments highlight a crucial societal issue: if AI-generated music becomes ubiquitous, it risks commodifying artistry, potentially reducing human creativity to just another algorithmic process.

While these sources illustrate AI's strengths and limitations in music, there are gaps in our understanding of how AI impacts the meaning and perception of creativity itself. Specifically, there is little research on whether society might eventually accept AI-generated music as equally valuable or authentic as human-created art. This gap leads to my research question: *How is artificial intelligence reshaping traditional processes of music creation?* Addressing this question is crucial as AI technology advances, because it speaks to the core of how we define creativity in an age where machines are involved in artistic expression.

One unknown factor is the effect of AI on the value and perception of art in a world where algorithmically generated music could potentially overwhelm human-made creations. As AI becomes more embedded in music creation, the question of what defines "authenticity" becomes murky. Are AI-created songs merely imitations, or could they hold their own artistic value? This project aims to investigate this issue by examining cultural responses to AI music, identifying shifts in public perception as AI continues to evolve.

To answer this research question, I will conduct a discourse analysis of public opinions on AI's

influence on music. This method will involve gathering opinions from social media posts, news articles, and online forums, such as Twitter hashtags, Reddit discussions, and articles in popular magazines. Discourse analysis is particularly relevant here, as it allows me to explore how people interpret AI's role in music creation by examining their beliefs, concerns, and values surrounding AI-generated versus human-created music. This approach will include analyzing how frequently terms like "authenticity" and "creativity" appear and how their use has shifted over time, shedding light on evolving societal perceptions. This approach will also help me gather a broad range of perspectives, acknowledging that music tastes and experiences are subjective and vary widely among individuals.

Additionally, I plan to use content analysis to track how narratives about music creation have shifted with the rise of AI. By examining content from news sources, blogs, and industry publications, I will analyze how the discourse around music production has evolved. This will help me understand how the process of music creation differs now compared to previous decades, before AI became a significant part of the industry. Through this approach, I aim to contextualize AI's role in music by identifying the specific ways it has altered production practices and cultural attitudes toward music creation. As part of this analysis, I will also examine ethical concerns raised by AI-driven music. For example, while AI offers artists tools to expand their creativity, it also raises concerns about originality and ownership. The use of AI in sampling or re-creating artist styles without consent presents potential ethical issues. Beyond copyright, there is a growing discussion on whether AI-generated music devalues the artistic efforts of human creators. By exploring industry standards, policy proposals, and public discourse on these topics, I aim to identify areas where regulations may be necessary to protect both artists and listeners from the pitfalls of unregulated AI-generated content.

The project ultimately seeks to provide a nuanced perspective on AI in music creation. By examining these ethical, cultural, and technical dimensions, I hope to contribute to broader discussions on the future of AI in the arts and society's evolving relationship with technology. This research also serves as a reminder that as AI continues to advance, it will remain crucial to balance technological innovation with the values that make art meaningful to humanity.

Conclusion

Artificial intelligence has introduced a revolutionary approach to music creation, offering musicians an expansive toolkit that can assist in crafting melodies, harmonies, and entire compositions. Through this exploration, it becomes evident that AI's role in music is multifaceted—serving both as a collaborator that enhances human creativity and as a potential competitor that challenges traditional notions of originality and artistic value.

As AI continues to advance, it raises critical ethical and societal questions about the essence of creativity and the authenticity of AI-generated art. This prospectus has examined the technical strengths and limitations of AI in music, as well as the broader implications for how society perceives and values art. As I continue my research, I aim to further explore the balance between innovation and authenticity, and how AI can be used to enhance, rather than overshadow, the creative potential of musicians.

Ultimately, AI in music creation presents both opportunities and challenges, urging us to question the future of art and our relationship with technology. As we progress, the dialogue around AI and creativity will likely shape new frameworks for understanding art in the digital age, ensuring that human expression remains at the heart of artistic endeavors.

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