

COMPREHENSIVE UNDERSTANDING OF ARTIFICIAL INTELLIGENCE (AI) INFLUENCED MUSIC PRODUCTION OF MARS PEKAKOTA 2024

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1st ICOERESS

(October 16th 2024)

Submission:

(16-10-2024)

Published:

(30-12-2024)

ABSTRACT

This study explores the role of Artificial Intelligence (AI) in the field of music production within the creative industry. It discusses the role of AI and its influence on the development of the music production for Mars Pekakota 2024. This research is derived from an empirical study utilizing a qualitative approach to gain a deeper understanding of the impact of AI on music production, supplemented by literature review for further analysis. Data sources were obtained from observations and interviews regarding the production process of Mars Pekakota 2024 using AI. The object of this research is the Mars Pekakota 2024 project. Media aesthetics theory is used for further analysis of the research object. The findings indicate that AI has a significant impact on the development and advancement of music production, as its presence offers alternatives that reduce both time and production costs. However, this study highlights the limitations and the lack of human interaction in the creative process when utilizing AI.

Keywords: *Music Production, Artificial Intelligence, Mars Pekakota 2024*

BACKGROUND

According to the Cambridge Dictionary, music is a pattern of sounds created from musical instruments, voices, or computers, or a combination of all these, aimed at providing pleasure to the listener. As an art form, music can serve as a medium for individuals to express their experiences, thoughts, hopes, and lives, thereby playing a significant role in the development of society (Islom, 2022). In line with the evolution of music, advancements in music production have emerged as standard tools used in the creation and production of music (David Moffat et al., 2019).

Music production is a complex process that involves various layers, depending on the methods and equipment utilized. One of the commonly used methods today is digital music production. Digital music refers to the process of producing music that relies on sophisticated software and technology, where sounds are generated, processed, and recorded digitally. With technological advancements, this method has become increasingly dominant in the modern music industry as it offers high flexibility and efficiency.

Digital music production employs a tool known as Digital Audio Workstation (DAW), a software that enables users to record, edit, and process sounds within a digital environment. DAW allows technicians to work with various musical elements, from instruments to sound effects, which are then compiled into a complete composition. In this context, the role of an Audio Engineer is crucial, as they are responsible for operating the DAW, controlling sound quality, and ensuring that each musical element functions harmoniously (Puput Pramuditya et al., 2023).

The digital music production method offers several advantages, including ease of editing and adding sound elements, as well as accessibility for musicians who wish to produce music without needing expensive physical studio equipment. This technology also facilitates remote collaboration, where musicians and technicians can work together despite being located in different places. Thus, digital music production has become an integral part of the modern music industry, providing practical and innovative solutions for the creation of musical works.

Digitalization in music production creates sounds that are more accurate and accessible to a broader range of musicians seeking to produce music, as it requires fewer devices to record music. Digital music production simplifies the process of producing, generating, and recording music with the assistance of software. Generally, music production faces dimensional challenges in how to combine

several recorded audio tracks (David Moffat et al., 2019). The mixing process of various audio tracks is interdependent, meaning one audio relies on another. This process can be time-consuming. The time required and the costs involved in creating a musical piece have driven humans to develop technologies that facilitate production processes while reducing the time and expenses involved. This technological advancement is referred to as artificial intelligence (AI), based on computer systems.

The advancement of technology has significantly impacted human life changes, particularly in the ways people work and interact with various systems. One result of this technological progress is artificial intelligence (AI), which is now widely popular and utilized across various sectors. AI is a computer system capable of adapting human intelligence to perform complex tasks, such as logical reasoning, learning from data, and solving problems efficiently (Bartneck et al., 2021). The presence of AI not only accelerates work processes but also opens new opportunities for innovation across various fields, including the creative industry, healthcare, and finance.

In general, AI is designed to simplify and optimize tasks that usually require human skills and thinking. With algorithms crafted to learn from data and experience, AI possesses the ability to make more intelligent and accurate decisions. This technology has become a solution in facing the challenges of the digital era, which requires high speed and efficiency while enhancing the quality of human output in many aspects of life. The widespread use of AI has also permeated the creative world. Whereas the traditional methods for producing and creating music were analog, which later evolved into digital music production, today, AI has become one of the methods utilized in music production. Users of AI merely need to create instructions known as prompts for the computer system to generate the desired music.

A prompt in AI is a dialogue between humans and computers involving instructions or inputs sent to the AI model to generate responses or outputs in accordance with the provided instructions. These instructions can take the form of commands, questions, or statements tailored to the user's needs. AI prompts represent a new medium in textual form that enables interaction between users and the AI model without intermediary programmers (Maloy & Gattupalli, 2024). This study focuses on the analysis of artificial intelligence (AI) and its impact on advancements in music production. The advancements in AI technology have triggered significant changes in production methods, which, in turn, provide ease for society. This encourages the rising popularity of AI utilization in various human professions in the current digital era.

One sector that has experienced significant changes due to AI adoption is the music industry. With the presence of AI, various processes in music production have become more efficient, aiding music professionals in streamlining their work. This technology simplifies music creation and expands access for creators worldwide, thus increasing the recognition of AI's role in this industry. The methodology employed in this research is qualitative, supported by literature reviews to bolster the analysis of the study object. A song produced by AI will serve as the subject of this research, specifically the Mars Pekakota 2024, which is an AI composition produced by the Pekakota platform from Kolektif Hysteria. The theory applied to assist in this research analysis is media aesthetics theory, a branch of aesthetic philosophy.

RESEARCH METHOD

This research is a qualitative study, and data collection was conducted by analyzing music intensively, as well as through interviews with representatives from Kolektif Hysteria and literature reviews to support music analysis techniques. Literature review in qualitative research serves as a means to discover relevant theoretical perspectives that aid in understanding the object under study (Harahap, 2020). This method involves systematic reading, analysis, and examination of written sources such as books, articles, journals, and other supporting documents.

The theory used as an analytical tool in this research is media aesthetics theory. Media aesthetics assists in studying how to understand, interpret, and appreciate a medium, which in the context of this research refers to music as an art form and cultural product. This study categorizes data sources into two types: primary and secondary sources. The primary data sources consist of descriptions of the AI music production process and the influence of AI on the development of music production. The secondary data sources include relevant literature and journal articles that support this writing.

RESULT AND EXPLANATION

Mars Pekakota 2024

Mars Pekakota 2024 is a song designed as a promotional medium to attract public attention, particularly from students, towards the Pekakota Institute 2024 program. This program is an initiative from one of the platforms within Kolektif Hysteria, namely Pekakota. The song contains promotional lyrics aimed at encouraging the community to participate in the Pekakota Institute 2024 classes, which focus on urban issues, culture, and the arts. Throughout this series of classes, participants are taught to view urban issues from various perspectives and to collaborate in order to generate interesting ideas and creative initiatives for implementation in the urban village of Semarang.

Mars Pekakota 2024 is a composition created by another platform within Kolektif Hysteria that focuses on artistic production and research, known as Artlab. Artlab is responsible for the entire creative process, from the lyrics and composition to the final production of the song. The song was subsequently uploaded to the Pekakota Instagram account and serves as the official promotional tool for the Pekakota Institute 2024 classes. This song not only functions as a means of communication but also strengthens the identity of the program in the eyes of the public, as it becomes one of its distinctive representations.

The production of Mars Pekakota 2024 involves the use of modern technology, particularly with the assistance of AI Suno.com. This AI model is a form of artificial intelligence designed to aid in music creation. This technology assists the creative team at Artlab in producing dynamic musical arrangements that align with the themes promoted by the Pekakota Institute 2024 program. The lyrics of Mars Pekakota 2024 were created by Hananingsih, an active member of the Artlab platform. As part of the artistic team, Hananingsih successfully articulated and integrated the issues presented by the Pekakota Institute 2024 program into the lyrics. These lyrics serve as a call to engage the community in understanding and actively participating in urban issues through the programs offered by this initiative.

Overall, Mars Pekakota 2024 is not merely a promotional song; it also symbolizes a creative collaboration between art, technology, and education. With a combination of inspirational lyrics, dynamic music, and artificial intelligence technology, this song aims to inspire more individuals to join the movement of the Pekakota Institute 2024 and contribute to positive changes within the urban ecosystem of the Semarang urban village.

Production Process of Mars Pekakota

The production of Mars Pekakota 2024 is overseen by Hananingsih, representing the creative division of Artlab. Hana was entrusted with managing all stages of production, which involved various aspects such as lyric writing, creative concept development, and technical arrangements. The process of creating this march began with brainstorming sessions between Hana and the team from the Pekakota Institute 2024, discussing the issues to be addressed and various initiatives intended for implementation in the program. These discussions focused on urban issues, arts, and cultural matters relevant to the ecosystem of the community in the Semarang urban village. During these discussions, Hana explored various creative ideas, which were then translated into the song's lyrics, ensuring that each message reflected the program's objectives. This creative process emphasized not only the aesthetics of the music but also the social relevance of the song.

Following the brainstorming sessions, Hana initiated the creative process of writing the song lyrics, ensuring that Mars Pekakota 2024 encapsulated meanings aligned with the program's vision and mission. The lyrics of the march serve not only as a promotional tool but also as an educational medium, encouraging the community to become more engaged with urban issues. It is hoped that this message will inspire participants of the Pekakota Institute 2024 to contribute to sustainable creative initiatives in the urban areas of Semarang. Hana utilized the AI technology Suno.com as an aid in the production process of Mars Pekakota 2024. Suno.com is an artificial intelligence specifically designed to generate music based on text. Users can input prompts that include lyrics, genre, and other specific instructions, and within a short period, this AI processes the input into complex music that incorporates instruments and vocals.

Suno.com can produce music in just one minute after receiving instructions from the user. The ease of operating this technology allows Hana to experiment with various arrangements and musical styles that align with the program's theme. This AI provides efficiency in terms of time, effort, and costs, thereby reducing expenses in the production of a song. Once the production was completed, Mars Pekakota 2024 was uploaded to the Pekakota Instagram page as a promotional medium for the Pekakota

Institute 2024 program. This song serves not only as a communication tool to attract participant interest but also as a symbol of Pekakota's initiative to unite art, technology, and awareness of urban issues.

AI's Influence on Music Production

A. The Role of AI in the Creative Industry

Artificial Intelligence (AI) represents a technological advancement in computer science that aims to replicate the capabilities of the human brain in solving various problems. This technology employs algorithms and computational techniques that enable computers to "learn" from data, analyze information, make decisions, and complete tasks that require intelligence (Hanifa et al., 2023).

AI encompasses several key approaches and techniques, such as machine learning, deep learning, fuzzy logic, and expert systems. Machine learning focuses on developing algorithms that allow machines to learn independently from data and continuously improve their performance over time. Meanwhile, deep learning is a subfield of machine learning designed to process more complex and intricate data (Gasmi et al., 2022). These two approaches enable AI to process information more accurately and efficiently to accomplish its tasks.

The evolution of AI, which mimics human intelligence, has led to its widespread adoption in society due to its ability to ease workloads and reduce excessive costs. This has become a significant benefit perceived by the public, making AI a popular tool for enhancing productivity today. In the context of the creative industry, the adoption of AI offers numerous advancements relevant to the evolving needs of contemporary society. AI serves as a creative tool that allows musicians and producers to accelerate the music creation process while enhancing media accessibility. With this technology, the production of creative works becomes faster and more efficient (Amato et al., 2019).

However, the use of AI must consider aspects of privacy, bias, and ethics, as AI still cannot identify these issues, thus necessitating human oversight in its operation. Creative industry workers must ensure that the ethical use of AI as an auxiliary tool does not harm or discriminate against specific groups. AI should be employed to enhance creativity and expedite production, not to entirely eliminate human involvement in the creative process (Amato et al., 2019).

The influence of AI in the creative industry is also evident in the integration of technologies such as Virtual Reality (VR) and AI to create innovative new ecosystems (Grech et al., 2023). One sub-sector significantly impacted is the music industry, where AI-based music generators are utilized in the composition process. This process involves the application of machine learning algorithms to analyze musical data and identify patterns such as chords, tempo, instruments, and other elements that support music creation (Anantrasirichai & Bull, 2021).

In the case of Mars Pekakota 2024, AI has successfully served as a tool to assist the creative music production process, representing the Pekakota Institute 2024 program. The production process, from pre-production to post-production, was completed swiftly thanks to the use of the AI model Suno.com, which functions as a generator of instruments and vocals for the march. In addition to time efficiency, the use of AI in the production of Mars Pekakota 2024 also provides substantial cost savings. The AI technology Suno.com used in this music creation process is available for free and can be accessed through Google search, eliminating the need for licensing fees or expensive hardware. Users can easily generate music without incurring the significant budgets typically required for conventional music production.

The utilization of AI as an auxiliary tool in the production of music in Mars Pekakota 2024 illustrates how technology can expand access and affordability in the creative industry. With the availability of AI-based tools, artists and producers can create works more efficiently in terms of both time and cost, thereby broadening opportunities for diverse groups to participate in music and other artistic creations. AI technology facilitates a faster and more affordable production process, thereby opening greater opportunities for individuals from various backgrounds to contribute to the arts. Consequently, AI serves as a tool that democratizes the creative industry, making it easier for more people to engage in the creation of works without being constrained by the resources typically required in conventional production methods.

B. Challenges of Using AI

Music has a profound connection with humans, encompassing historical, cultural, and emotional dimensions. Throughout the history of human civilization, music has served as a medium for individuals to express their thoughts, hopes, and emotional feelings. Music functions not only as a form of

entertainment but also as a reflection of the cultural development occurring within society (Islom, 2022).

In discussions concerning the historical development of human culture, music has enriched various genres and has become an integral part of community life. This has persisted across generations, rendering music inseparable from human existence. Technological advancements in human civilization have led to transformations in music production, transitioning from analog to digital formats, and now to music generated by AI. The evolution of production tools reflects the changing times, which increasingly enhance technology to facilitate human work.

In analog and digital production, there exists an interaction between producers and musicians in the creation of works through aesthetic symbols such as pitch direction, tempo, rhythm, and others. However, in music production utilizing AI—acting as an extension of producers and musicians—this pattern of interaction is diminished, thereby creating a new space for interaction between humans and technology (Huang et al., 2019).

Analog and digital music production still allows for exchanges between producers and musicians, facilitated by the chemistry built to create music without sidelining the instinctive and emotional aspects of the creators. In contrast, music production with AI is less interactive due to the minimal dialogue involved. The lack of interaction in the music production process using AI is influenced by the fact that AI only accepts instructions in the form of prompts and executes them by collecting and analyzing data to produce a work.

Indra Q argues that music production with AI does not enhance creativity but merely serves as a tool for providing references and expediting tasks, owing to the limited space for discussion and exchange of ideas (Muhammad & Handrini, 2024). AI reduces the level of deep human interaction in the creative process because it has limitations in understanding the context of the creative and emotional intuition possessed by experts in their fields. While AI can act as a tool to accelerate tasks in the creative industry, it cannot replace human creativity in the aspects of artistry. Collaboration between AI and humans can take the form of using AI as an auxiliary tool to speed up work, while still necessitating the artistic touch of humans as the final outcome of the creation. Thus, the resulting art is not monotonous, as AI merely reads and analyzes data, rather than creating new data as a vessel for creativity.

Another limitation faced in the application of AI in the creative industry pertains to copyright and ethical issues. Since AI generates music based on the analysis of existing data, concerns often arise regarding copyright infringement, particularly when works produced by AI are considered too similar to pre-existing works. Furthermore, AI does not hold official licenses for the works it generates, which can lead to ethical conflicts in the creative realm.

CONCLUSION (BOLD, 11)

Through the discussion above, it is understood that artificial intelligence (AI) has brought significant changes across various fields, including the creative industry, by offering convenience, efficiency, and cost savings. AI is capable of mimicking human intelligence through techniques such as machine learning and deep learning, enabling music production processes to be faster and more affordable. In the case of Mars Pekakota 2024, AI facilitates efficient music production without requiring substantial costs, thereby expanding access for more individuals to engage in the creation of works. Although AI presents numerous benefits, issues related to privacy, ethics, and human intervention remain crucial to ensure that this technology is utilized appropriately and does not harm human creativity. Music has a profound relationship with humans across various historical, cultural, and emotional aspects. With the advancement of technology, music production has undergone significant transformations from analog methods to digital formats, culminating in the emergence of AI as a production tool. While AI simplifies and accelerates the music-making process, it tends to diminish the creative interaction between musicians and producers and is less capable of comprehending the emotional and intuitive context in the creation of works. AI can serve as an efficient tool, but it cannot fully replace human creativity, and its application raises challenges concerning copyright and ethics

REFERENCE

- Baird, B., & dkk. (2024). Artificial Intelligence and Music: Implementing an Interactive Computer Performer. *Computer Music Journal*, **17**(2), 73-79.
- Bonnici, A., & dkk. (2021). Editorial: Music and AI. *Frontiers in Artificial Intelligence*. <https://doi.org/10.3389/frai.2021.651446>.
- Civit, M., & dkk. (2022). A Systematic Review of Artificial Intelligence-based Music Generation: Scope, Applications, and Future Trends. <https://doi.org/10.1016/j.eswa.2022.118190>.
- Fajriansyah, M. N., & Handrini, A. (2024). Integrasi Musik digital dan Artificial Intelligence: Analisis Interaksi Simbolik Pada Proyek Musik AIAIQ. *Jurnal Institut Agama Islam Negeri Langsa*, **15**(1), 55-65.
- Grinde, B. (2022). The Human Passion for Music. *MDPI Journal Encyclopedia*, **2**, 1119-1127. <https://doi.org/10.3390/encyclopedia2020074>.
- Hanifa, A. S., & dkk. (2023). Peran AI Terhadap Kinerja Industri Kreatif di Indonesia. *Journal of Comprehensive Science*, **2**(7), 2159-2170.
- Issak, A. (2021). Artistic Autonomy in AI Art.
- Killin, A. (2018). The Origins of Music: Evidence, Theory, and Prospects. *Sage Publisher*, **1**, 1-23. <https://doi.org/10.1177/2059204317751971>.
- Kumar, S., & Kumar, S. (2023). AI Generated Music. *International Journal of Research in Science & Engineering*, **4**(1). <https://doi.org/10.5529/ijrise.41.10.12>.
- Moffat, D., & Sandler, M. B. (2019). Approaches in Intelligent Music Production. *MDPI Journal Arts*. <https://doi.org/10.3390/arts8040125>.
- Moreno, A. (2020). Elements of Music Based on Artificial Intelligence. *Acta Informatica Malaysia*, **4**(2), 30-32. <https://doi.org/10.26480/aim.02.2020.3032>.
- Novelli, N., & Proksch, S. (2022). Am I (Deep) Blue? Music-Making AI and Emotional Awareness. *Frontiers in Neurorobotics*. <https://doi.org/10.3389/fnbot.2022.897110>.
- Pramuditya, P., & Hananta, A. P. (2023). Proses Produksi Musik pada Lagu Tyok Satrio di Studio DS Records. *Journal of Music Science, Technology, and Industry*, **6**(1). <https://jurnal.isi-dps.ac.id/index.php/jomsti/>
- Sturm, Bob L.T, Maria Iglesias & dkk. (2021). Artificial Intelligence and Music: Open Questions of Copyright Law and Engineering Praxis. *MDPI Journal Arts*. <https://doi.org/10.3390/arts8030115>.
- Umurzakov, I. (2022). The Role of Music in Human's Life. *International Journal of Advance Scientific Research*, **2**(12), 116-120. <https://doi.org/10.37547/ijasr-02012016>.
- Wulanda, G. A. N. (2023). Penerapan Teori Bentuk Estetik Dewitt H. Parker Sebagai Paradigma Dalam Ranah Apresiasi Musik. *Jurnal Seni Musik*, **12**(1), 65-73.