Societal Impact

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# Context

My individual project involves developing an AI model trained to predict top hit songs. New artists can use this AI tool as a guide on how to improve their songs and increase their chances of reaching the top charts. However, the AI model serves as a recommendation tool rather than providing a guaranteed formula for success. In the music industry, achieving a hit song also depends on factors like luck and viral trends, which the AI does not account for.

# Impact on society

The AI model has a significant societal impact by guiding new artists on how to improve their songs and increasing their chances of reaching the top of the charts, making their music accessible to a broader audience.

In the highly competitive music industry, getting to the top 50 can be challenging, and finding guidance on where to start improving a song is not always easy. This AI tool acts as a support system, providing suggestions to help artists refine their music while still encouraging their creativity and originality. It ensures that artists maintain their unique style, rather than simply following trends. Additionally, since the AI model is trained on current top-hit data, it cannot predict the future meaning the music industry will continue to evolve unpredictably, with new hit songs emerging each year.

This AI promotes fair competition in an industry where the charts are often dominated by established artists like Lady Gaga, Taylor Swift, and others who already have recognition and resources. Unlike well-known musicians who have access to extensive support and production teams, new artists often lack these resources. By providing structured guidance, this AI tool helps level the playing field, giving rising musicians a better chance to succeed.

# Target Users

The main target users are the new music artist try to make a name for themselves and trying to gain new audience.

# Privacy

It’s very important to consider the privacy and personal data of users that is using the AI model. The AI model does not collect any personal user data. It only analyzes publicly available song data, such as song popularity and attributes, from sources like Spotify.

This tool complies with prevailing privacy and data protection laws. However, in the future, if artist/ user data collection becomes necessary, the following measures will be taken:

* Explicit user consent will be required before collecting any personal data.
* GDPR compliance will be ensured, including users' rights to access, modify, and delete their data.
* Strong security measures will be implemented to protect artist information.

# Data

The data collected for the AI model has its limitations and subjectivity. A song's success can be influenced by various factors, including:

* Culture
* Marketing strategies
* Personal preferences

To address these challenges, the AI model will use a diverse dataset and be continuously improved through testing and feedback.

To maintain accuracy, the dataset will be regularly updated with new trending hit songs, and the model will be monitored to ensure long-term sustainability of insights.

Currently, no artist data is being collected. However, if artist data is needed in the future for example when artists upload information such as their name, bio, contact details, or performance analytics, GDPR compliance will be required. This includes obtaining explicit consent, ensuring data security, and allowing artists to control their data.

# Transparency

This AI model will be as transparent as possible by providing clear explanations to users about how the model works. This will be done through documentation and a simple tutorial on the AI model’s functionality. Additionally, documentation will cover the business model, such as the target users, the problem the AI model solves, and other relevant details.

For any questions or concerns, users can reach out via email, or the contact information provided with the AI model.

Everything will be documented to ensure that users are informed about any potential negative consequences or shortcomings of the AI model. For example, users will be informed that the AI model relies on past song data trends to make predictions, which may not always accurately predict future trends.

# Inclusivity

The AI model is specifically designed for new artists across all music genres. It is not exclusive to any specific group other than emerging artists who are aiming to create top hits. The model does not have any inherent bias toward any particular genre, and it will work for new artists in any genre who want to improve their chances of success.

The AI model makes automatic decisions based on the data it was trained and tested on. I will provide clear documentation that explains how the model makes its decisions, outlining each step and the reasoning behind them. If users have any questions about the decision-making process, they can refer to the documentation for clarity.

The primary group benefiting from this tool are new artists who are looking to build their careers and audience. By helping them improve their songs and increase their chances of becoming top hits, the AI model offers them an opportunity to establish themselves in the industry.

However, one potential issue is that popular genres like pop could become oversaturated with similar songs. To mitigate this, the AI model covers all top hits across various genres, ensuring that no single genre, such as pop, dominates the predictions.

# Sustainability

Currently, the AI model is not environmentally sustainable because it requires computing resources for training and making predictions, which consumes energy. Additionally, hosting the AI model will require ongoing energy use. However, in the future, I plan to explore more sustainable solutions to optimize its energy consumption.

The AI model does not use any physical materials since it is purely a software program that can run on any computer.

The lifespan of the AI model is difficult to predict because technology evolves rapidly, and new advancements are made every year. However, an estimated lifespan of around 5 years seems realistic for the AI model.

One hidden impact could be that other companies might develop similar AI models, leading to more energy consumption due to increased training, hosting, and processing demands across multiple platforms.

# Hateful and Criminal Actors

While the AI model is designed to help new artists improve their songs, it is important to consider the ways in which bad actors might misuse it.

1. Violating Copyright

The AI model does not have features that allow users to manipulate music charts or copy existing hit songs. However, there is a risk that someone might try to generate a song that closely resembles a hit song. To prevent this, the AI model will undergo multiple testing to detect and flag potential plagiarism. Additionally, I will provide clear documentation stating that the AI model is intended to guide artists and not to copy existing songs.

1. Crossing Societal Boundaries

The AI model does not intentionally cross personal or societal boundaries, but I recognize that some artists might become overly dependent on it to achieve success. It is important to emphasize that the AI model only predicts trends based on current data, it cannot predict future hits or account for luck and viral trends. Success in music often involves random factors, such as a song going viral through social media

1. Discriminate Against Ethical Group or Social Class

The AI model does not intentionally discriminate against any ethnic group or social class. However, since it analyzes top hit song data, it may naturally favor high-production music from artists with more resources. To address this, I will explore ways to diversify the dataset, ensuring that the AI considers a wider range of music from different backgrounds. Some streaming platforms may manipulate top-hit charts, so instead of relying solely on one platform, for example Spotify, I will gather data from multiple sources to provide a more balanced prediction.

1. AI-Generated Scams

There is a risk that bad actors may create fake music prediction AI models to scam artists by manipulating or fabricating data. To combat this, I will provide detailed documentation explaining how the AI model collects data, from which sources, and how predictions are made. Transparency will help users verify the legitimacy of the AI model and protect them from scams.

# Human values

The AI model may impact certain human values, particularly creativity and autonomy. Artists might become overly dependent on the AI model, potentially reducing their originality and limiting their ability to create unique music. To prevent over-reliance, the AI will be designed as a guidance tool, providing constructive feedback rather than making creative decisions for the artist. This will also be clearly stated in the documentation.

The AI model may influence artistic autonomy by shaping decision-making and limiting creativity. If the AI provides strict instructions for making a "hit song," artists might feel pressured to follow them rather than exploring their own style. To mitigate this, the AI model will include encouragement features to foster creativity. Additionally, artists will be informed that luck and viral hits play a role in the music industry, and AI cannot predict those factors.

**Potential Effects on new Artists:**

Positive Effects:

* Learning: The AI model provides guidance on song improvement, helping artists gain confidence and understanding.
* Reduced Overwhelm: New artists can feel less stressed about how to improve their music since the AI provides structured recommendations on where to start.

Negative Effects:

* Overdependence: Artists might feel the need to seek AI approval for every aspect of their songs.
* Reduced Creativity: Artists may feel less motivated to experiment because they rely on AI’s guidance.

To address these concerns, the AI model will emphasize that it is a support tool, not a rulebook. Artists will be encouraged to explore their creativity beyond the AI’s suggestions.

# Futures

Predicting the future of the top hit song prediction AI is challenging, as technology continuously evolves and improves. However, taken account of the impact I have thought about, I envision this AI is a support tool that helps new artists refine their songs based on current trends, maintains transparency, and encourages creativity.

In the future, similar AI tools may emerge, creating competition, while bad actors might develop scam versions that deceive artists for profit.

**Ideal Future Scenario**

The ideal future scenario is that the AI remains a support tool for new artists, helping them gain exposure and improve their music. This only happens if the AI continues to evolve through user feedback, regular updates, and a commitment to transparency. This will encourage new artists to develop their unique style while using the AI as a guidance tool, not a replacement for creativity.

**Worst-Case Scenario**

In the worst-case scenario, the music industry could become oversaturated with formulaic songs as new artists rely too heavily on AI recommendations. This overdependence may lead to a decline in creativity, with artists following AI-generated formulas instead of experimenting with their unique style. Additionally, scammers could create fake AI tools, misleading artists and damaging the reputation of legitimate AI-based song prediction models

If this AI tool is ever bought by another company, I will ensure that:

* Strong user data protection is in place (if user data is ever collected).
* Clear documentation defines the AI’s intended purpose and ethical use.
* A strict license agreement prevents unauthorized modifications that could harm users or change the AI’s intended design.

This approach will protect users and ensure that the AI remains an ethical and helpful tool for new artists.

# Final conclusions

When designing the AI song prediction tool, I must consider its impact on society. It is essential to prioritize user privacy, maintain transparency about how the AI works, and clearly communicate that the tool is meant as guidance for improving songs. Additionally, I need to assess both the positive and negative effects the AI may have on users, define its target audience, anticipate potential misuse by bad actors, and evaluate its long-term impact on the future of the music industry. When I clearly thought about it and written it in a document, then I can start designing and creating the AI.

# Second Valuation

The purpose of the second valuation of the societal impact document is to assess whether anything has changed during the development of the model or if the original idea remains the same as when the societal impact was first drafted. Anything that is new or have been changed would be written in this paragraph.

## Do you think the same about the risk and opportunities?

During the development of the model, I identified additional risks that were not initially considered. These include:

* Unauthorized Uploads: Users might upload audio features or songs they do not own or have permission to use.
* Misleading Confidence: It's important to clearly state the model’s prediction accuracy to avoid misleading users into thinking the results of the prediction is 100% accurate.

To address these risks:

* Before using the model, users are required to agree to the Terms of Use, which clearly state that they must only upload content they have the rights to. Since the system does not store any uploaded audio or user data, it is difficult to track misuse. Therefore, the Terms of Use serve to clarify that. If users still choose to upload unauthorized content, it is entirely their responsibility, and I, the developer, am not liable.
* It is also essential to provide transparency about the model’s prediction accuracy, so that the model doesn’t mislead the users. Currently, the model does not guarantee 100% accuracy in predicting whether a song will become a hit. The accuracy of the model's predictions will be clearly communicated in the documentation and within the tool itself.

The only opportunity is to make the model more transparent, trustworthy, and legally compliant, ensuring it does not break any laws and serves as a supportive tool for new artists to use.

## Which choices have been impacted during the design and development by the existence of this document?

Currently, the model collects data from Spotify. However, Spotify has introduced a new policy in April that prohibits the use of its song data to train AI or machine learning models. As a result, Spotify will be excluded from future data collection. Moving forward, I will explore alternative, fair ways to collect data from other platforms.

Other than that, everything else in the project remains the same, with the societal impact in mind throughout the development.