SeCo - Sequence Composer

SeCo, or Sequence Composer, is an AI experimental tool to generate music for various genres and styles. It is not meant to replace the creational process, but rather enhance it and improve it by generating samples and ideas. SeCo still requires further research, however, the initial prototype provides hopeful results where more iteration could improve it further.

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Context of use: Education
Level of education: Bachelor

Impact on society
What impact is expected from your technology?

What is exactly the problem? Is it really a problem? Are you sure?
Music generation has been a creative process that has been taking place since the very first mentions of society. However, music nowadays is often "stolen" or "copied" from other composers. With high profile lawsuits still ongoing against people like Ed Sheeran, innovation in music could improve the creational process with novel ideas, progressions, and excerpts.

Are you sure that this technology is solving the RIGHT problem?
As of now, SeCo does not solve the problem. It's merely a tool to help musicians and creatives achieve their goals in a safer and innovative fashion. Unfortunately, in contemporary times, technology is mostly used to mend outdated and fragile systems and another example is SeCo. Innovation in music can be achieved if copyrighting legislation is revisited and restructured since most music pieces are under copyright and unusable for inspiration or sampling.

How is this technology going to solve the problem?
SeCo proposes a way to create music in an innovative way with diffused encoded samples rather than the traditional method of sampling and hoping a copyright hammer has not struck. It still requires more research to be made complete, however, as of now it provides the foundational knowledge to continue its development.

What negative effects do you expect from this technology?
SeCo cannot generate full music pieces due to inherent limitations of the technology. There are no apparent negative effects that could impact society.

In what way is this technology contributing to a world you want to live in?
SeCo can be used as a creative support tool. The generation and composition process could be made smoother if the is a source of inspiration that the creator can tap into. The technology is fully compliant with copyright practices and is developed in accordance to the GDPR.

Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.
SeCo can be further researched, however, is serves as a very strong

baseline. It can be improved by looking into optimising the generative part for different genres, gather more data, and finally training the models for longer. Furthermore, a more suitable audio encoding mechanism could improve the sampler.

Hateful and criminal actors
What can bad actors do with your technology?

In which way can the technology be used to break the law or avoid the consequences of breaking the law?
SeCo can be used to subvert certain legislation by providing samples close to existing ones without copyright put on them (due to their just-in-time generations). Outside of that, SeCo is safe and cannot be used by bad actors for harassment, fraud, forgery, thievery, etc.

Can fakers, thieves or scammers abuse the technology?
No.

Can the technology be used against certain (ethnic) groups or (social) classes?
No.

In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.
SeCo does not allow bad actors to act against other societal and ethnical groups.

How could bad actors use this technology to subvert or attack the truth?
SeCo does not allow bad actors to use subterfuge for persuasion or any malevolent behaviour.

Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.
Per the way SeCo is developed, it does not allow for bad actors to act malevolently. However, if the project grows into a service, then it is likely to employ best practices to prevent negative actions and bad actors from exercising power in any way.

Technology Impact Cycle Tool

SeCo - Sequence Composer

Privacy

Are you considering the privacy & personal data of the users of your technology?

Does the technology register personal data? If yes, what personal data?

No.

Do you think the technology invades the privacy of the stakeholders? If yes, in what way?

No.

Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?

SeCo is developed in compliance with the GDPR and legislations regarding music copyright, melodic and harmonic sampling, etc. The data for this project is screened before being gathered whether it is available with a public license (or at least non-prohibitory license) for sampling and usage.

Does the technology mitigate privacy and data protection risks/ concerns (privacy by design)? Please indicate how.

No data is collected, and as such SeCo is as secure as it gets. Inherently, no data is stored nor it is transmitted to an external service.

In which way can you imagine a future impact of the collection of personal data?

SeCo does not collect personal data or usage data of sorts.

Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.

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Human values
How does the technology affect your human values?

How is the identity of the (intended) users affected by the technology?
Music is an essential part of nowadays society. It gathers people together and sets an atmosphere and sense of belonging. SeCo aims to help creatives generate music without taking the satisfaction of the music generation process. It aims to support rather than automate the creative process.

How does the technology influence the users' autonomy?
SeCo gives complete control to its user and does not interfere with their decisions. It aims to aid rather than enforce a certain action. It is by no means addictive or psychologically aimed to hamstring creative individuals' process. SeCo fully empowers its users to make better decisions by giving them complete freedom of choice since it only acts as a proposition rather than ground truth.

What is the effect of the technology on the health and/or well-being of users?
SeCo could aid in the music generation process thus alleviating pressure and reduce stress for the musician. There are no physiological harms that SeCo causes.

Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.
SeCo is designed around full empowering individuals and supports their decisions and choices. It aims to help and propose rather then enforce.

Stakeholders

Have you considered all stakeholders?

This category is not applicable for this technology.

Data

Is data in your technology properly used?

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?

SeCo is designed in a way that does not allow bad actors to influence the decision making process of the tool. It does not collect any data. The data used to power the tool is encoded and sources in accordance and compliance to the GDPR and the respective legislations put in place.

How does the technology organize continuous improvement when it comes to the use of data?

SeCo generates music samples - so the best way to measure its success is whether the users are satisfied with the music generated and give feedback. Upon receiving this feedback, the tool can be improved without drastically changing the initial scope of the tool.

How will the technology keep the insights that it identifies with data sustainable over time?

No data is collected.

In what way do you consider the fact that data is collected from the users?

No data is collected.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.

SeCo is designed to not collect user data. All data that is collected is sourced with full knowledge of the legal availability of the materials. These two points should be kept throughout the development of the project and further improvements.

Inclusivity

Is your technology fair for everyone?

Will everyone have access to the technology?
Yes.

Does this technology have a built-in bias?
No. SeCo's data is source and encoded in an objective fashion without introducing any bias from the developer or the data sources.

Does this technology make automatic decisions and how do you account for them?
SeCo's main objective is to propose rather than enforce, thus all possible autonomous actions are limited or negated.

Is everyone benefitting from the technology or only a a small group? Do you see this as a problem? Why/why not?
SeCo is designed to benefit creative individuals who in turn benefit various groups. Cultural, religious, and other groups and safeguarded inherently by SeCo's design. Finally, it is not meant to autonomously produce anything or impact the decision making process.

Does the team that creates the technology represent the diversity of our society?
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Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.
SeCo, if further developed, should preserve the ideas and ideals that it was developed with initially - free for all, unbiased, and fair.

Transparency
Are you transparent about how your technology works?

This category is not applicable for this technology.

Sustainability

Is your technology environmentally sustainable?

This category is not applicable for this technology.

Future
Did you consider future impact?

This category is not applicable for this technology.