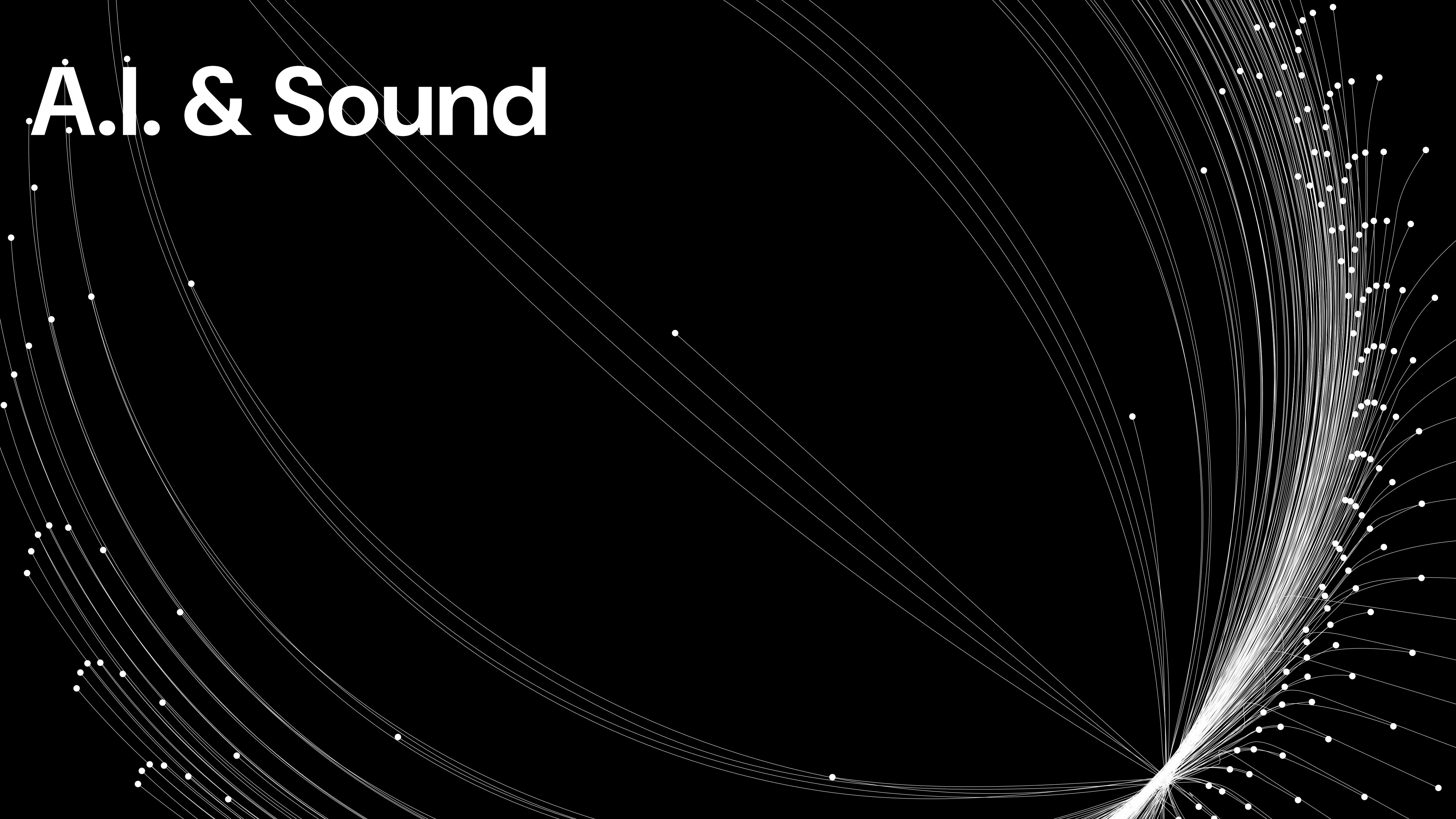
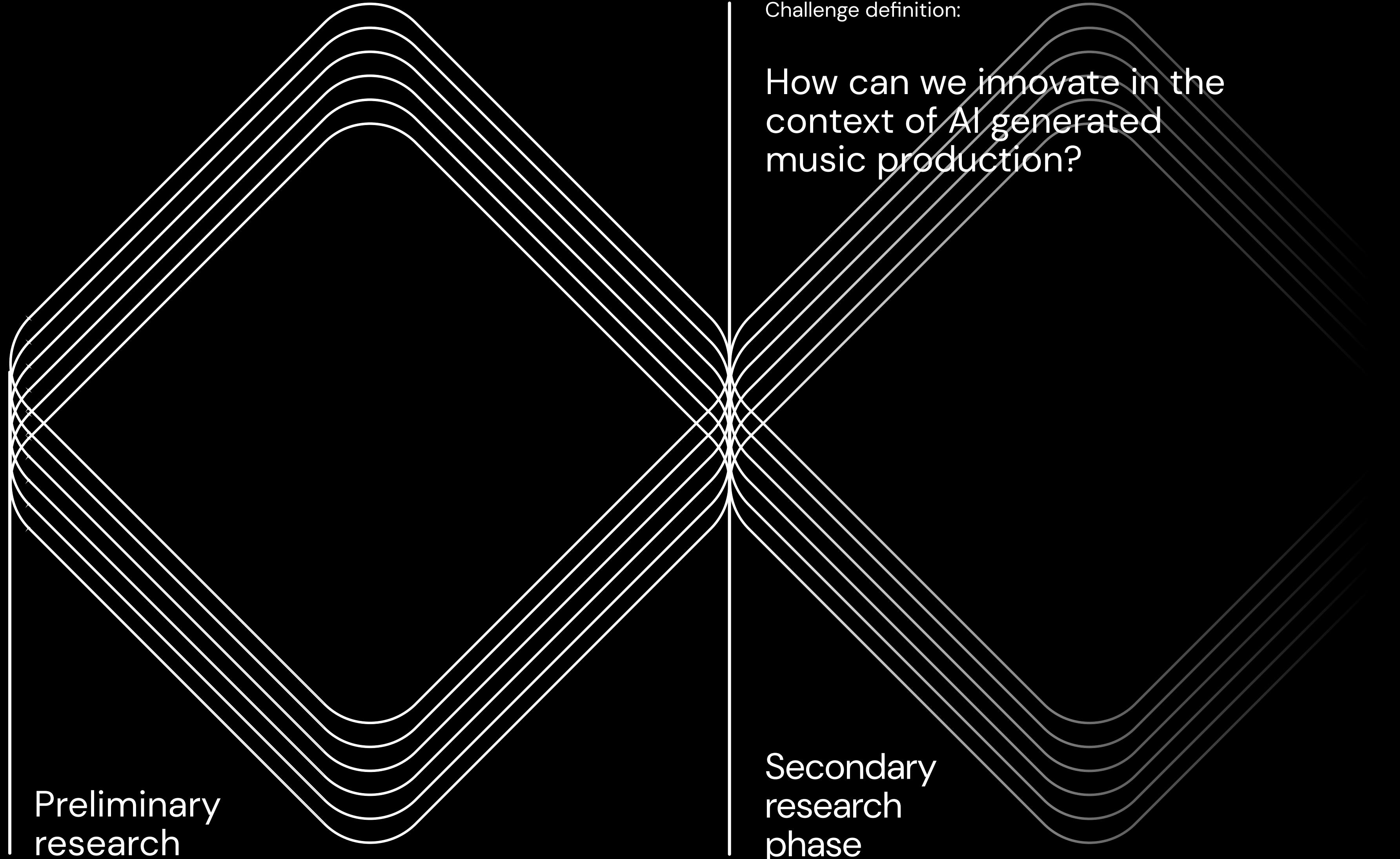
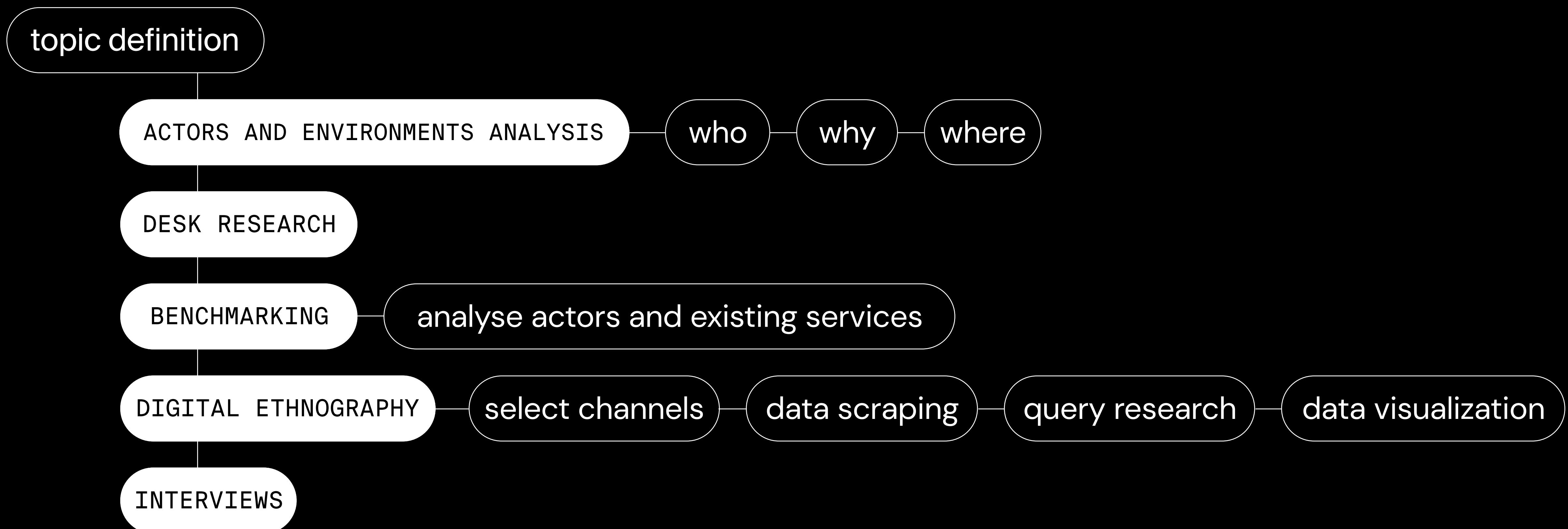


# A.I. & Sound





# Research process map



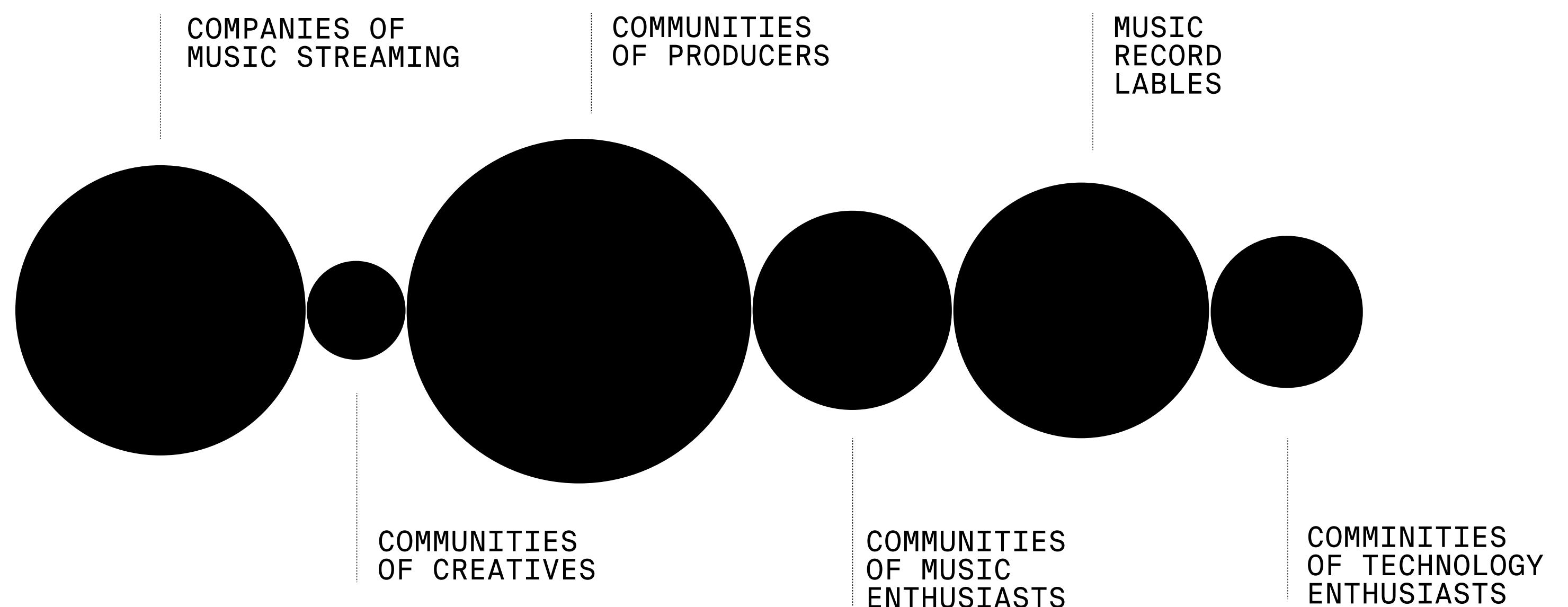
# Who, Why, Where? / Analyzing the actors and the environments

The first step in the analysis and research process was to identify the actors who take part in the world of music production, understanding how they influence it, where they operate, how they engage in discussions, and why they feel the need to do so. The ultimate goal was to better understand the needs, concerns, and potential opportunities in the development and application of AI in the musical domain.

# Who are the actors of the debate?

To examine the field of music generation using artificial intelligence, it was important to identify the key actors actively involved in the debate on this topic. This analysis has contributed to a better understanding of the needs of these "protagonists".

From the research, several categories of actors have emerged, including: communities of music producers, music streaming platforms, record labels, communities of music enthusiasts, communities of technology enthusiasts, and communities of creatives.



# Why are they discussing?

Understanding the reasons why AI in music production and sound generation has become a highly discussed topic in recent times has been crucial for comprehending the needs, requirements, desires, and thoughts of the individuals effectively participating in the discussion.

The research highlights the need people have to share their thoughts about it and the need to define the limits and the potentialities of AI in order to determine the best role AI can play in the evolution of society and music culture.

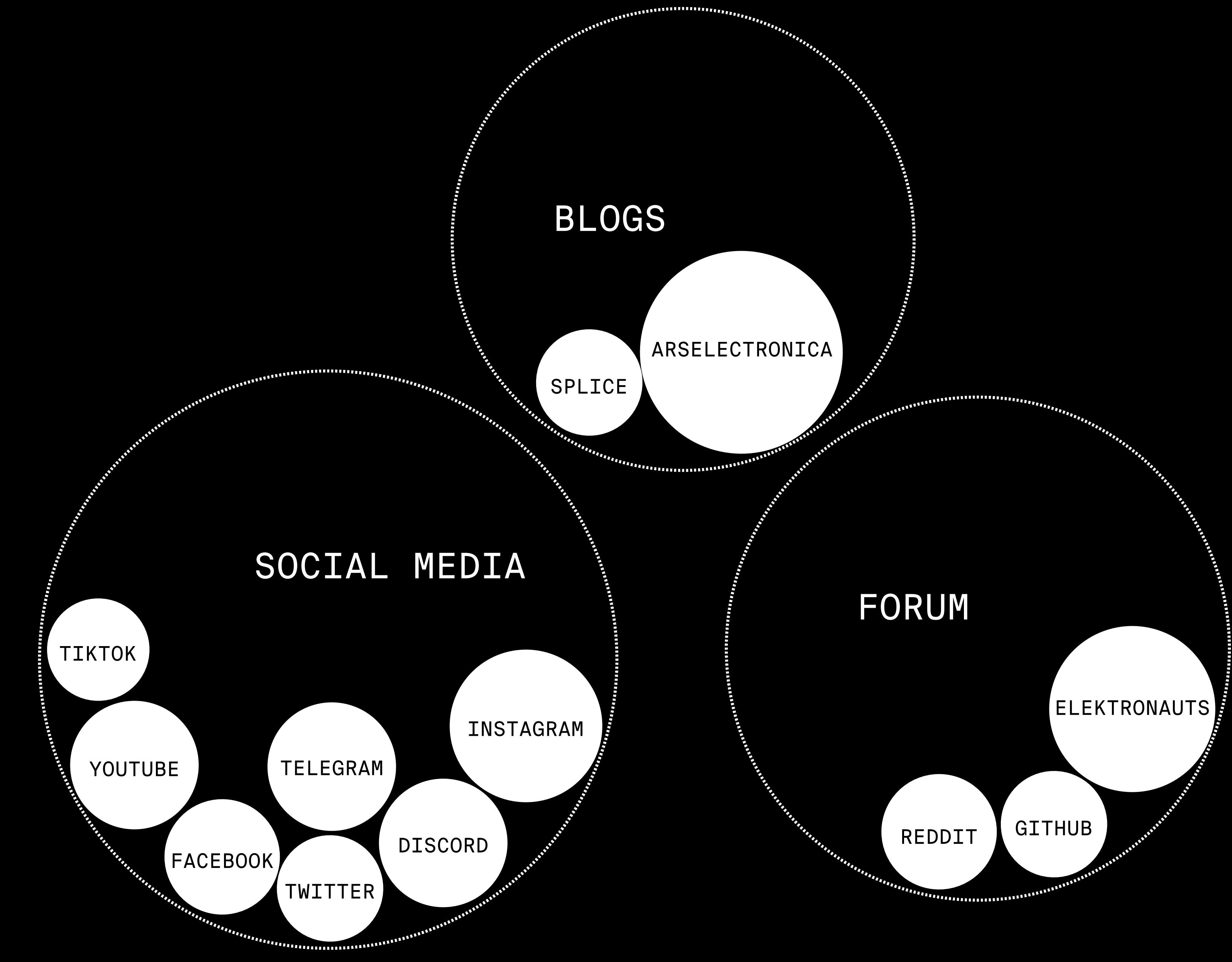
AI music is a hot topic in music production and sound generation

- The need to share different opinions in the AI generated music world
- The need to define limits and potentialities of the technology
- Define a role for AI in society and culture

# Where do they discuss?

In the process of analysis, it was imperative to examine the platforms and channels where discussions on the subject take place. This analysis proved instrumental in identifying the primary venues for the dissemination of opinions, news, and information.

The main platforms identified were social media platforms such as Instagram, YouTube, TikTok, Telegram, Facebook, Twitter, and Discord. Additionally, blogs such as Splice and Ars Electronica, as well as forums including GitHub, Elektronauts, and Reddit, were found to be significant sources of discussion and engagement.



# Methodology / Understanding what they are thinking

This second step is essential for gaining an in-depth understanding of the thoughts, opinions, and perceptions of a specific group of individuals or communities under investigation.

Through a combination of qualitative analytical methods, quantitative methods and x extraction, observed in their context of action, this research aims to explore the mental landscape of the subjects of interest, focusing on a particular topic or context.

# Which are the most suitable tools?

SUBJECT	GOAL	TOOL
<b>Who</b>	Finding users, communities	<ul style="list-style-type: none"><li>• Digital Ethnography</li><li>• Benchmarking</li></ul>
<b>Where</b>	Pages, forums, conversations	<ul style="list-style-type: none"><li>• Digital Ethnography</li><li>• Scraping on Social media</li><li>• Scraping on forums/blogs</li></ul>
<b>Why</b>	Motivations, values, needs	<ul style="list-style-type: none"><li>• Semi-structured Interviews</li><li>• Digital ethnography</li><li>• Literature review</li><li>• Scraping on digital environments</li></ul>

# Desk research

## SOURCES

Novice-AI Music Co-Creation via AI-Steering Tools for Deep Generative Models

<https://dl.acm.org/doi/abs/10.1145/3313831.3376739>

The Analysis of Generative Music Programs

<https://www.cambridge.org/core/journals/organised-sound/article/abs/analysis-of-generative-music-programs/6DC3240C1B1961E4553B9914CB71EC10>

Approaches in Intelligent Music Production

<https://www.mdpi.com/2076-0752/8/4/125>

A Demand-Driven Perspective on Generative Audio AI

<https://arxiv.org/pdf/2307.04292.pdf>

Will we see prompt-based music generation?

<https://thisisimportant.net/posts/prompt-based-music-generation/>

Deep learning for music generation: challenges and directions

<https://hal.sorbonne-universite.fr/hal-01840937/document>

## INSIGHTS

Generative AI methods for music production can frustrate people because of their uncontrollable outcome. This makes collaboration with it difficult.

Systems vary their outcome with each run, users and composers may wish for deeper insight into these program's ontological status, mechanism, and creative potential.

We can think about different level of AI presence during the production process in order to offer more freedom to people that already know how to produce and a more automatic way to amateur songwriters.

Two questions taken from a case study in which we can observe the difficulties present in sound generation today and what are the preferred methods for conditioning the generation of music.

While it's possible to use a diffusion model to build a music generator without extensive music metadata, a prompt-based music generator would need to use more curated datasets instead of audio files scraped off the internet in order to make the semantic connections between the text of a prompt and the expected audio features.

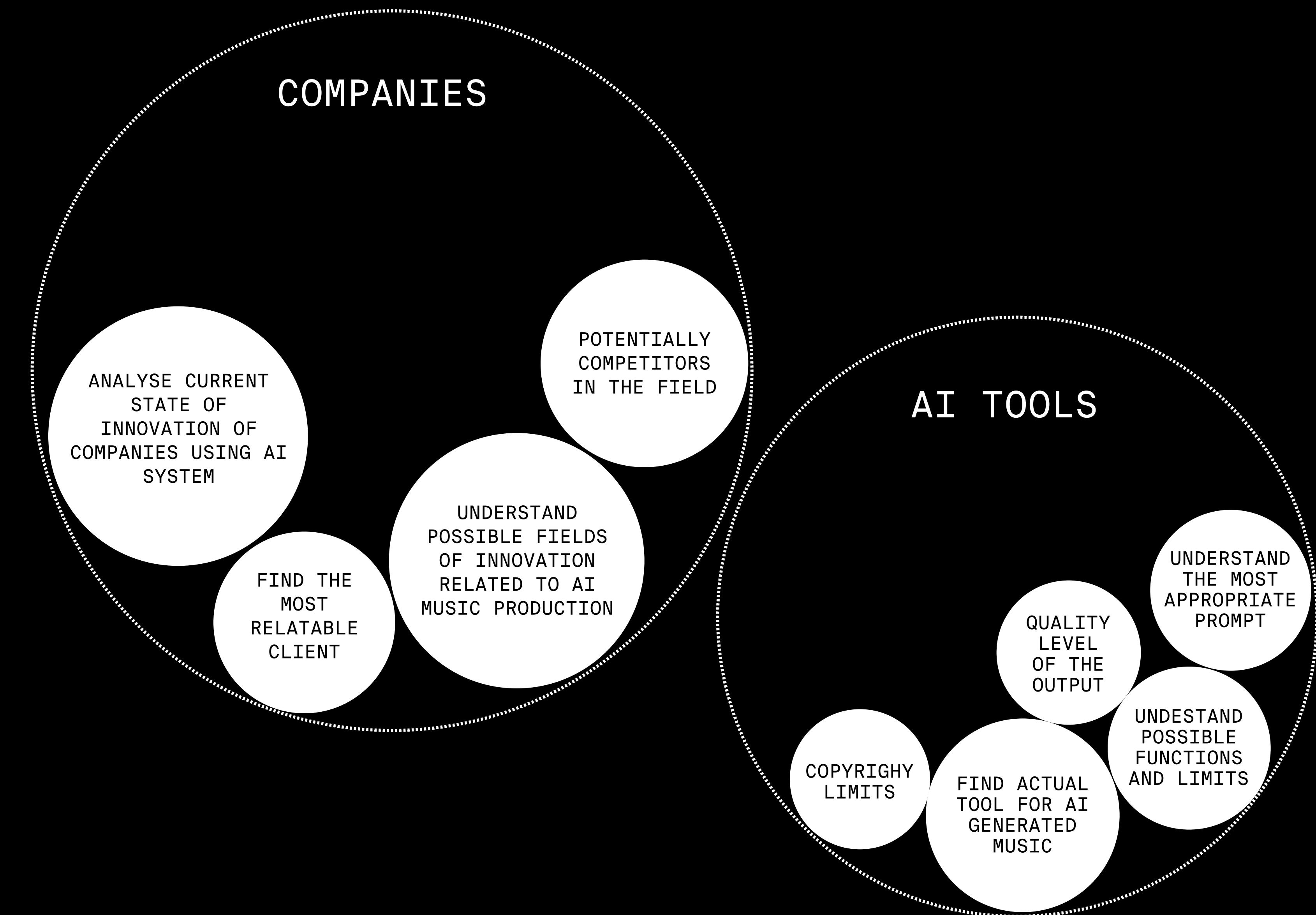
Deep learning for music generation is a burgeoning research field, but it faces challenges in control, structure, creativity, and interactivity. This article explores these challenges, proposes strategies to tackle them, and showcases real architecture examples. By analyzing these issues and potential solutions, this research aims to advance deep learning-based music generation.

# Benchmarking

The benchmarking process reveals its usefulness in identifying the target customer. We conducted an analysis of the leading companies in the technology and music streaming services, as well as the most popular artificial intelligence (AI) tools accessible to users today.

The objective of the benchmarking was to carefully examine the different companies in order to identify a potential customer that fits our research needs, as well as to compare existing AI tools in order to highlight the most interesting features.

The result of this process was the choice of Apple as a benchmarking customer and its music streaming service Apple Music. This choice was motivated by the fact that Apple is a large technology company that already offers a music streaming service, but has not yet implemented AI within its business music service.



# Companies

## ACTORS

### Streaming companies:

- Spotify (most common)
- Soundcloud (most amateur)
- Qobuz (niche service)

### Streaming services:

- Apple Music (Apple)
- Amazon Music (Amazon)
- YouTube Music (Google)

### Potential companies

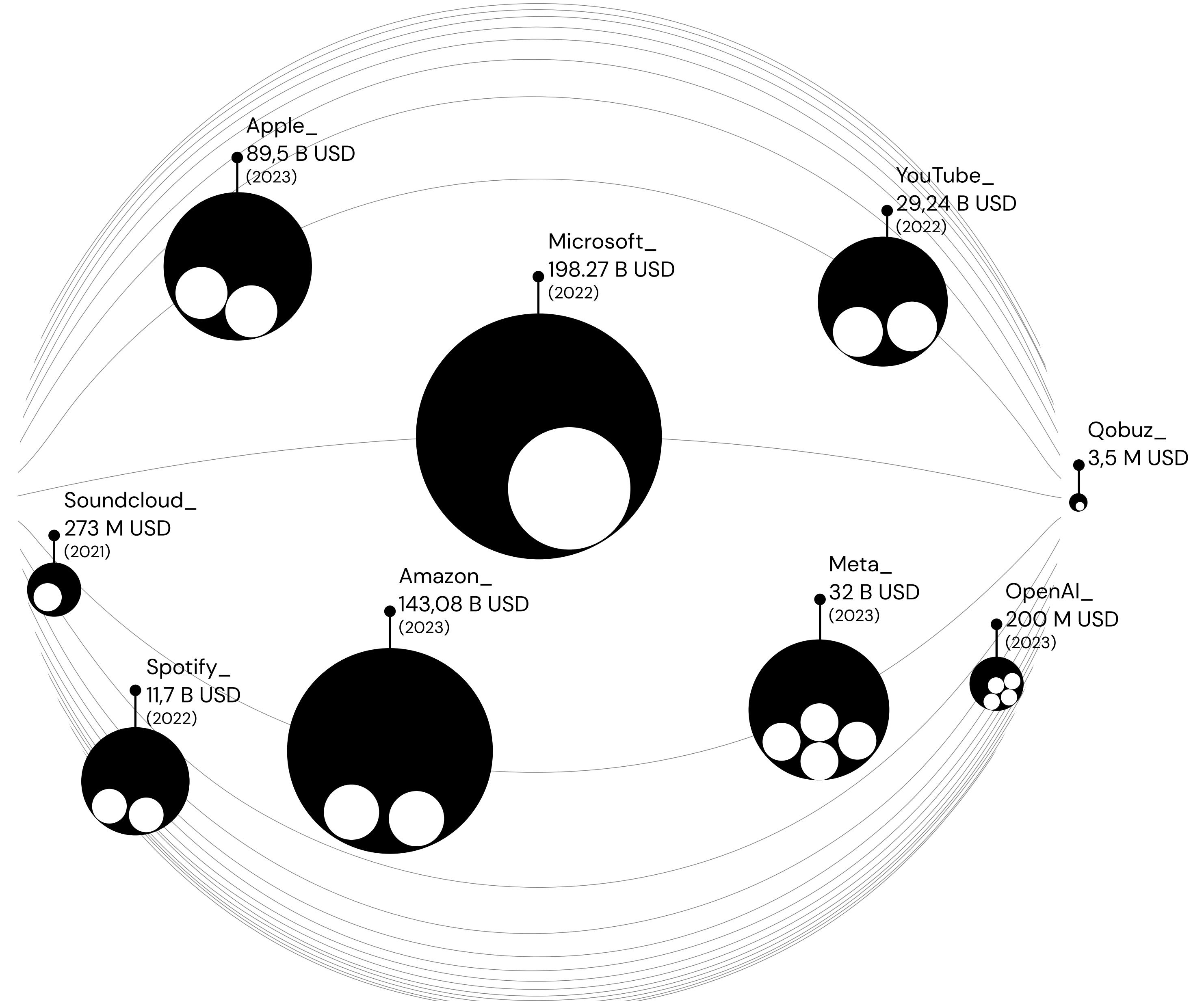
- Meta (music AI integration)
- Microsoft (interest in AI)
- OpenAI (AI integration)

## DESCRIPTORS

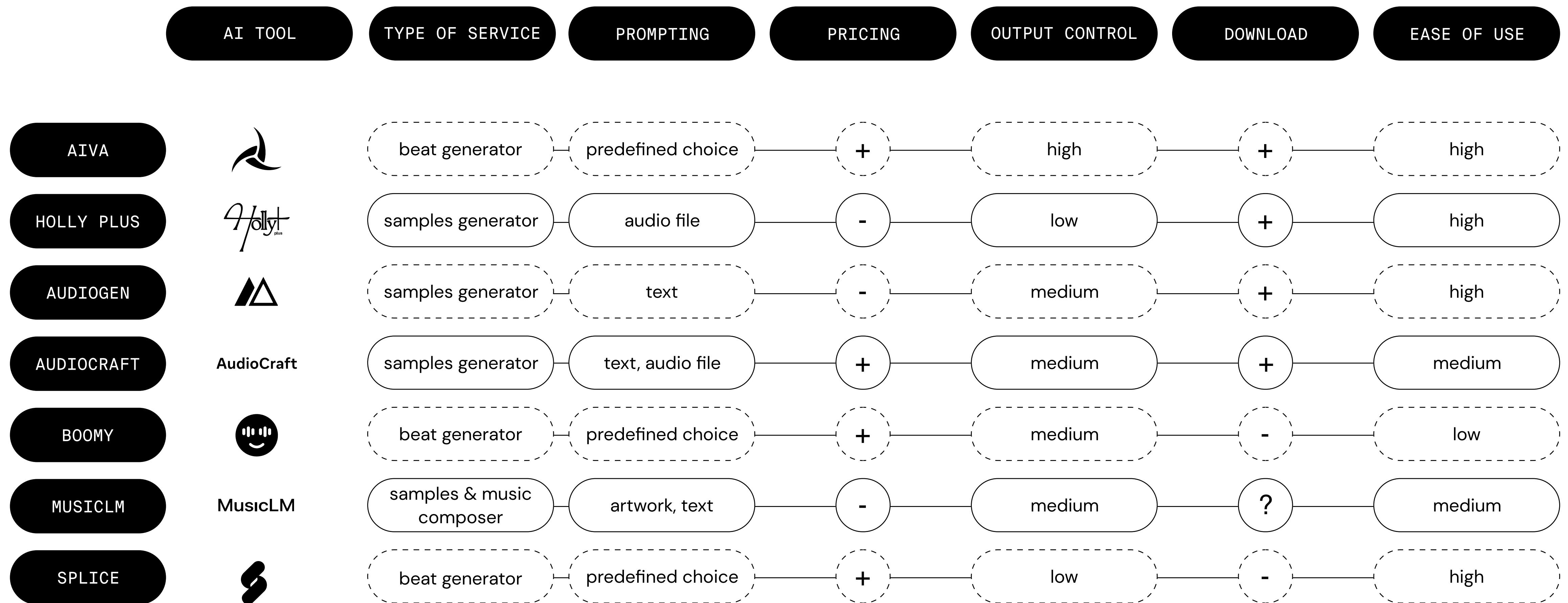
The total **REVENUE** of the companies, which refers to the total income generated from their operational activities, has been considered to provide an overview of their economic power.

The **USE OF AI** within the companies is considered in a general manner and does not specifically pertain to the music streaming service. The level of AI implementation is represented here according to the following categories:

Low	● ○ ○ ○
Medium	● ● ○ ○
High	● ● ● ○
Very high	● ● ● ●



# AI tools



# Digital ethnography

## – Channels, communities, users

Within the realm of digital ethnography, an analysis was conducted to identify the channels, communities, and users who actively participate in the discourse surrounding music generation with AI.

This analytical process facilitated a meticulous selection of platforms where valuable insights and information relevant to this research could be found.



REDDIT

MP r/musicproduction ✘

### Music Production

A community for hobbyists, professional musicians, and enthusiasts to discuss music production-related topics, ask questions, collaborate, and share tips and tricks. Music creators from all walks of life are welcome here.

367.465 Top 1%

481 ●

Classifica in base alla grandezza ↗  
Membr Onlin  
bri e

r/ r/AI\_Music ✘

### AI\_Music

Feel free to share the latest about AI and music.

2849.25 Top 11%

Membr

● Classifica in base alla grandezza ↗  
i Online

MP r/WeAreTheMusicMakers ✘

### We Are The Music Makers

WATMM is a place for music makers to discuss the music-making process (and a few closely related endeavors)

2,7 690 Top 1%

Mln ●

Classifica in base alla grandezza ↗  
Membr Onlin  
bri e

MP r/singularity ✘

### Singularity

Everything pertaining to the technological singularity and related topics, e.g. AI, human enhancement, etc.

1,6 316 Top 1%

Mln 4 ●

Classifica in base alla grandezza ↗  
Membr ●  
bri Onlin  
e



YOUTUBE



Oversampled ✎

@Oversampled · 166.000 iscritti · 325 video

Oversampled brings you fresh music production tutorials, sample packs, presets & other to... >  
oversampled.us e 2 altri link

Iscriviti



Rick Beato ✎

@RickBeato · 3,78 Mio di iscritti · 1286 video

Everything Music >

Iscriviti



Mic The Snare ✎

@MicTheSnare · 268.000 iscritti · 214 video

Videos about music history and commentary. >

micthesnare.com e 3 altri link

Iscriviti

# Digital ethnography – Shadowing: Conversations, Motivation, Value, Needs

Some of the most interesting conversations at the level of engagement generated in the identified channels were then observed and analyzed whithin their natural context, proceeding towards a more qualitative analysis.

The objective was to understand the general mood of the communities of music producers interested in the topic. The keywords extracted help interpret the discussions to gain a deeper understanding of the community's interests, concerns, and opinions.

The screenshot shows a Reddit thread on the r/singularity subreddit. The first post, titled "The current state of: AI Music Generation", discusses the new development in AI-based music production, specifically Google's MusicLM and the AI Test Kitchen. The post includes a SoundCloud link featuring several beats generated by AI. A poll below the post asks if users have tried AI music tools and if they are interested in using them for their own music. The poll results are as follows:

Response	Count
Tried and found them useful	105
Tried and found them disappointing	124
Haven't tried but would be interested	290
Not interested in using AI music tools	299

Below the main post, there are three replies:

- [eliminato]** I haven't checked out MusicLM yet. But every other AI music generator sounds like electronic garbage. I still prefer to pay Pond5 for legit music.
- Unicorns\_in\_space** I feel the opposite. It's disappointing. Audio quality aside it's a fun toy but doesn't seem to have a good handle on style or nuance. On a recent thread someone was saying how much detail they go to to get a good out put, having to write a hundred words to generate something usable which kinda defeats the purpose for me. (I could have written the loop by then 😊). It still feels to me like it is assembling sounds with no great sense of what it's output sounds like and even obvious prompts are occasionally wide of the mark: it can't make a 303, I asked for string quartet and it failed, same for vocal polyphony. I'm guessing it's trained on a fairly narrow selection??
- Cherlokoms** Music is my hobby. I don't want my hobby to become asking IA to do things. I'm sure that people are gonna make incredible things with that but that's just not how I want to do it.

At the bottom of the screenshot, two large text boxes summarize the main themes of the conversation:

**BAD QUALITY  
DIFFICULT TO HANDLE  
NO SENSE OF OUTPUT**

**MUSIC IS MY HOBBY, AI IS NOT  
HELP WITH ORGANIZATIONAL TASKS  
UNREGULATED**

# Digital ethnography – Shadowing: Conversations, Motivation, Value, Needs

The same methodology was applied in the comments section of four videos with an highly interaction from users discussing the topic of generative AI in the musical domain.



@Designed1 5 mesi fa  
On one hand it's disgusting how labels are basically using AI to raise dead artists from the grave and cash in on their fame once again, basically disrespecting not only their family but also their fans  
but on the other hand it's absolutely hilarious to hear the cast of Spongebob Squarepants cover Off the Grid by Kanye West so idk

530 Rispondi  
3 risposte

@avedic 5 mesi fa  
But you DO know.  
The fact such feats can be rendered at ALL...means they will happen. In a huge way.  
Any time people are saying "this is scary...but also, WOW, look at THIS!"  
Then you know that thing is the new...thing. I'm SO ambivalent about all of it. I'm not for or against. I'm curious and weirded out and watching...

20 Rispondi

@Designed1 5 mesi fa  
@avedic actually you probably described my stance the best. i'm not in it, just standing afar watching it unfold

12 Rispondi

@enderjezd2523 5 mesi fa  
As a musician, I'm definitely scared of AI when it's being used to replace the human.  
When it's being used for memes though, I have no reason to be scared, as it's just comedy.

9 Rispondi

@thelastchannelonyoutube 5 mesi fa  
While I understand the fear of AI generated replications of artist's music, I feel like it's one lawsuit away of being forced into obscurity, even with some artists ecstastically giving permission.

319 Rispondi  
18 risposte

@LynnHermione 5 mesi fa  
it should. stealing a person's identity is a violation of human rights. we have a right to our image and voice and it shouldn't be used without our consent

68 Rispondi

@avedic 5 mesi fa  
Sure.  
For maybe a year or two.  
And then what?

7 Rispondi

@alicect1539 5 mesi fa  
I am much more scared of the threat to creativity a legal precedent would create re: intellectual property, than I am of the threat of AI to creativity.

7 Rispondi

@Forcocy 5 mesi fa  
@LynnHermione That would also mean that "The beach that makes you old" is now illegal.

What is wrong with you.

4 Rispondi

@sebastiancarreiras832 5 mesi fa  
People also said we were one lawsuit away from internet distributed music dying. Ask Lars Ulrich how his lawsuit went.

19 Rispondi

@agonzalez7095 5 mesi fa  
wasn't there a US supreme court case that argued that you can't profit off art made by an AI or smth?

1 Rispondi

@thelastchannelonyoutube 5 mesi fa  
@agonzalez7095 That was for generative AI, I'm referring to voice imitators.

6 Rispondi

@shinji1264 5 mesi fa  
Yea the internet doesn't really follow laws

G @lamarobot69k 5 mesi fa  
Although streaming has given us access to waaaay more music than ever before waaaay easier, it has created a ridiculous expectation that we are supposed to be fed content 24/7. And that has a disastrous effect on us as a society. It means that people are often rewarded handsomely for churning out predictable, safe slop. Chasing trends and feeding algorithms is far far far more lucrative than quietly and carefully crafting a unique product. AI simply accelerates all of these issues and rewards the music industry for their worst and greediest impulses. Unless there are clear and enforceable regulations, I don't see this getting better.

41 Rispondi  
1 risposta

@happyendings\_15 5 mesi fa (modificato)  
This was honestly fascinating! (As is consistent with all your work but I digress.)  
Some related thoughts: I thought I couldn't stand to be around anyone who doesn't keep up with current music, but then I realized that's both of my parents. And I guess it's not that sad of a life, but it is hard to imagine. Also circling back around to the whole "we like things we already know" was soooo good. I mean, it's .. Leggi tutto

25 Rispondi  
1 risposta

M @diferentbutsimilar7893 5 mesi fa (modificato)  
I still hope never to be someone who's not keeping up with current music. I never wanna see myself losing touch with culture. As an artist I could never let myself lose sight of that sense of discovery, the horizon of another new sea. I think that eventually, people just look out over one such sea and decide it would be one sea too many. I never want it to be too many, because with that curiosity, goes your sense of creative inspiration. What good is a lifetime on an instrument you can never truly fully master if you stop and resign yourself to the same old in the end? Personally, the only reason I ever took an interest in Leggi tutto

7 Rispondi

DESIRE TO INCREASE THE QUALITY OF CONTENT WITHOUT LOOSING THE HUMAN TOUCH

FEAR OF THE POSSIBILITY OF A HUMAN REPLACEMENT BY AI

# Digital ethnography – Shadowing: Conversations, Motivation, Value, Needs



YOUTUBE

@milesroth8732 5 mesi fa  
Honestly if we're gonna be living in a world where actual musicians with emotion, passion, talent and hard work are replaced by something artificial with no meaning, and people even accept that, I won't want to live in it.  
178 Rispondi  
11 risposte  
@lcpPhixis2000 5 mesi fa  
agree  
3 Rispondi  
@odessarepresentative 4 mesi fa  
music = the soul made manifest.  
we are almost to the point of having a soul-less culture that doesn't value originality or authenticity and this seems like the nail in the coffin.  
15 Rispondi  
@J-Real 4 mesi fa  
The thing is.. are those "talented" artists you talking about have charisma at all? Because to be really famous you don't need to be really amazing.. its what sells and what people relate to and sing with easily not something extra or overdramatic.. What the collective conscious agree with one another everyday.  
1 Rispondi  
@mylemcleod2270 4 mesi fa  
Well having just worked the 'Bodyguard' at the Theatre today, I can say that people value an artist, their story and their life. Fandom is not just about music is it? It goes beyond that. It's a very powerful thing and the number one reason people go and see their favourite bands live. It's because they can actually get to connect with them in the flesh. Sure, there's a lot of trash out there musically, but even those trashy songs, mainstream stuff is consumed by the listener who then wants to learn more about its creator. I don't know anybody who cannot tell me a single fact about their favourite ...  
Leggi tutto  
9 Rispondi  
@vanimapermal 3 mesi fa (modificato)  
This will never happen whilst sure it's a neat trick to be able to switch out artists using the "AI"  
And sure we can bring back some dead artists using this tech someone has already produced a new Michael Jackson track it's called bluemenu  
But all these have something in common they need a base vocal track that was sung by a human  
But at the end of the day it will never replace humans and emulating people's voices with AI might even be made illegal...  
Leggi tutto  
2 Rispondi  
@orellonnebeck 3 mesi fa  
agree, many people work their asses off to become masters at their craft, just to get replaced by technology. If artist become irrelevant what kind of meaning does the world still have?  
2 Rispondi

PEOPLE DON'T WANT AI TO REPLACE  
HUMAN TOUCH, ORIGINALITY AND  
AUTHENTICITY

@FunnySongGuy 6 mesi fa  
I think that another effect of this is that a minority of people will value small local bands playing live even more. It's the human connection that will matter. They'll be the people who care.  
3369 Rispondi  
229 risposte  
@matmarket5642 6 mesi fa  
True, and many artists will be using AI live in real time, which is already possible. AI will touch everything like computers did.  
81 Rispondi  
@czwimer 6 mesi fa  
Lets hope  
99 Rispondi  
@markgiles313 6 mesi fa  
Yes. That's my feeling too. People will search out the real from the fake, especially for live music.  
And soon there will be live vocal filters so that anyone can sound like anyone. But enough of us will still crave the human connections of playing live instruments together.  
115 Rispondi  
@martin-1965 6 mesi fa  
Hey man, you know what? I think - or at least hope fervently - that you are right. I jumped ship from the music business in 2012 after 20 years as musician, songwriter, running an indie label, tour managing and then managing a top 5 album/single band. It was like someone flipped a switch and nothing made any sense unless you were a major label chewing on every piece of the artists income from streaming, through merch and into tour income (the final straw for me). With this AI development, the world - and music - is flipping over again BUT, while I agree with Rick that recorded music may not ...  
Leggi tutto  
147 Rispondi  
@aaronkandlik 6 mesi fa  
And even more so - I believe people will seek out acts that are demonstratively live and playing real instruments and singing. The "raw" aesthetic will be in.  
49 Rispondi  
@junitemerson7827 6 mesi fa  
@martin-1965 Love this comment. Totally agree. I have no fear for the future of real music. There will always be enough of us humans who listen to real artists on VINYL and go to live gigs big and small our whole lives. Absolutely.. rock n roll will never die! (Off to The Boss in Dublin tomorrow) 🎉🔥😎  
Keep on rockin man!  
25 Rispondi  
@SRMoore1178 6 mesi fa  
Why even use real singers? It would be entertaining to hear songs sung by Arnold or Stallone. Joe Pesci could sound great singing on a tune, who knows?  
16 Rispondi

HUMAN CONNECTION IN MUSIC,  
ESPECIALLY IN LIVE  
PERFORMANCES, WILL REMAIN THE  
MAIN FACTOR PEOPLE WILL VALUE

# Digital ethnography – Scraping, Query research

Q AI MUSIC GENERATOR

## SEARCH OVER TIME



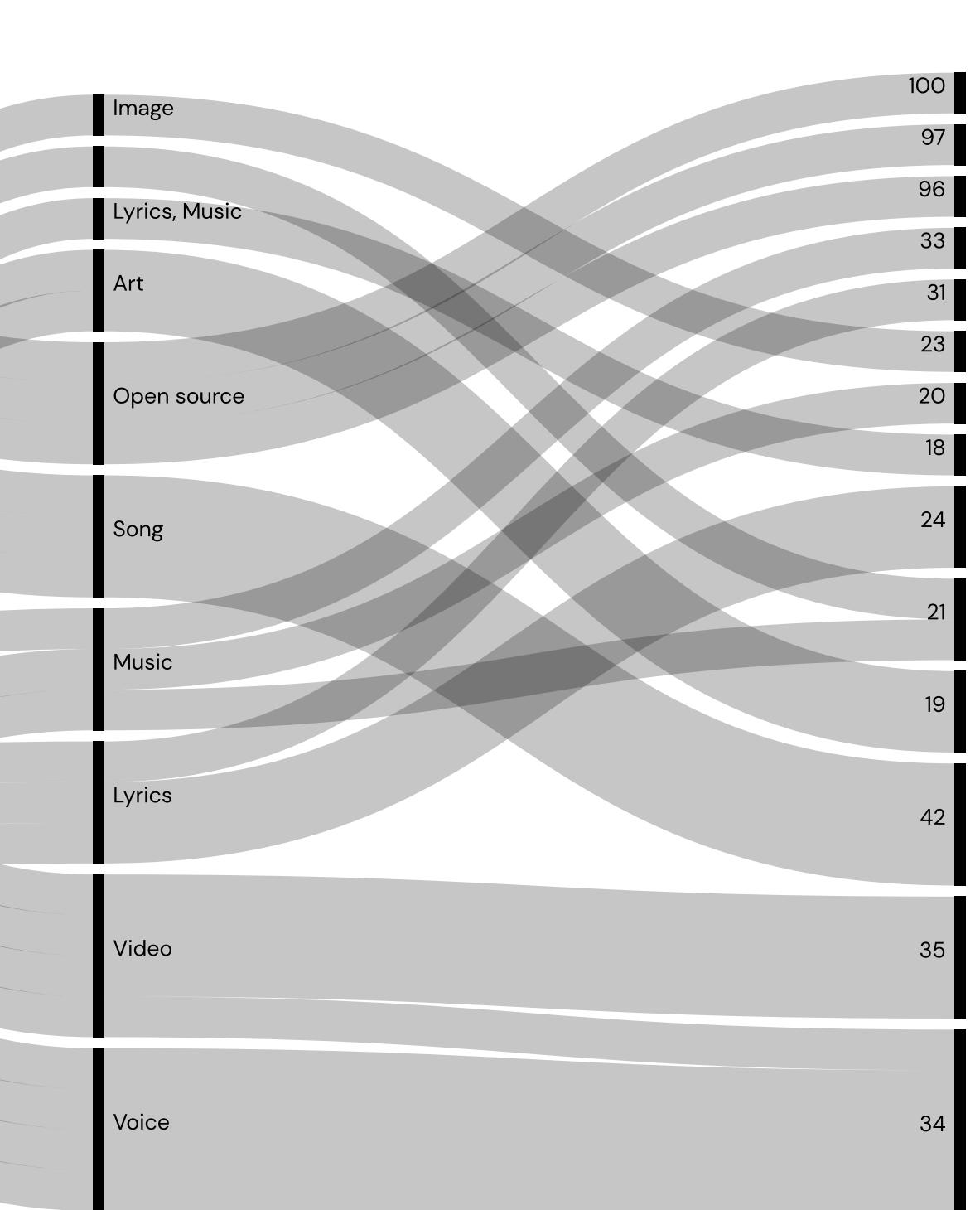
The use of AI for music generation has been analyzed over the course of the past 5 years. Subsequently, a more detailed analysis was conducted on the related queries to extract the associated fields.

This comprehensive examination provided valuable insights into the evolving landscape of AI-driven music generation and yielded a deeper understanding of the specific contexts and applications surrounding these queries.

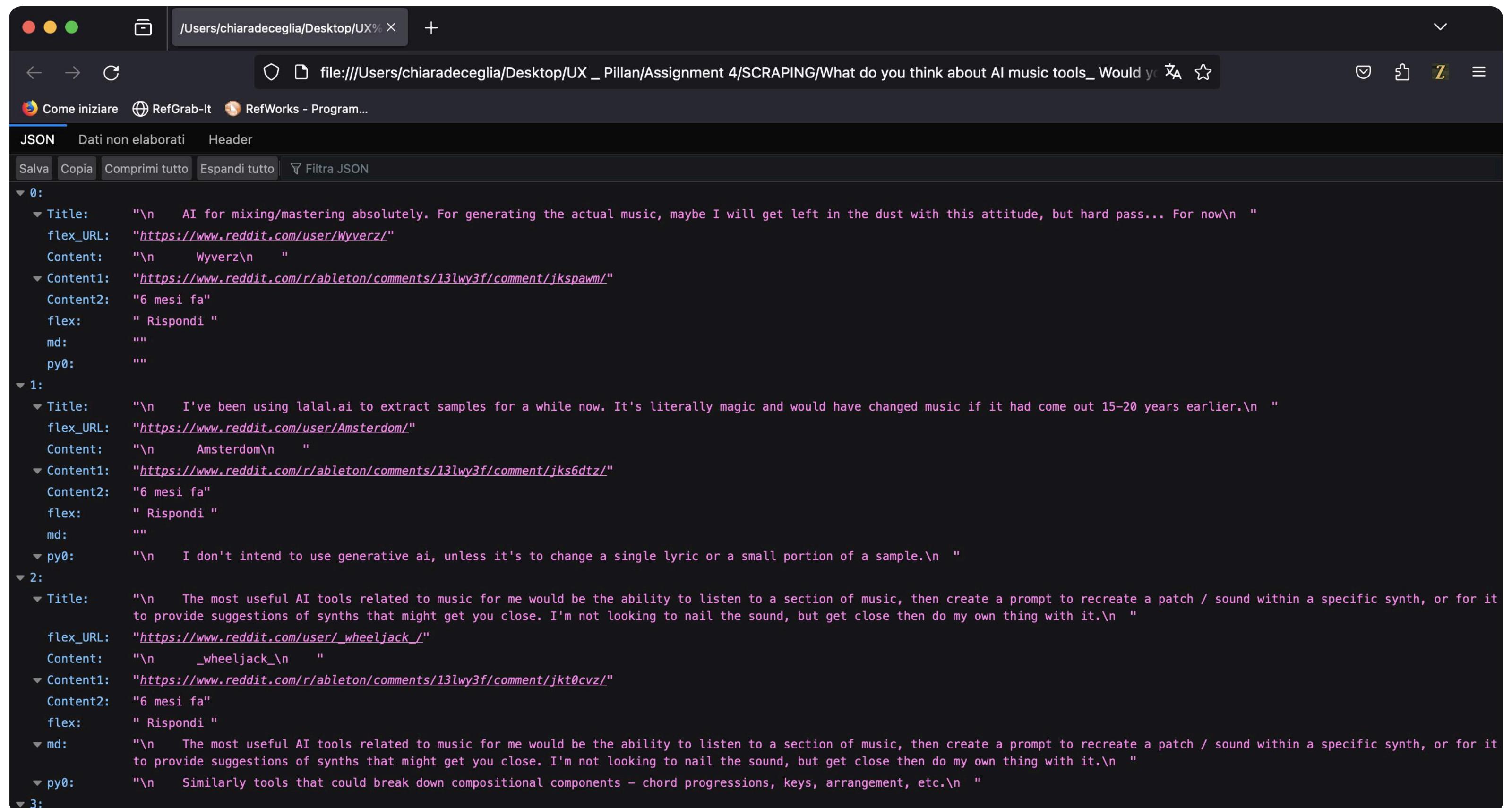
## ASSOCIATED QUERY

ai music generator free  
free music generator  
free music  
song ai generator  
song generator  
ai song  
music video generator  
music video ai generator  
ai music video  
video ai generator  
voice ai generator  
ai voice music  
ai voice music generator  
voice ai  
ai for music  
ai text generator  
ai lyrics generator  
lyrics generator  
ai image generator  
youtube music  
best ai music generator  
ai music generator online  
ai art generator  
ai art  
ai text to music generator

## FIELD



# Digital ethnography – Scraping, Data collection



The screenshot shows a dark-themed JSON viewer application window. The title bar reads '/Users/chiaradeceglia/Desktop/UX% X'. The address bar shows 'file:///Users/chiaradeceglia/Desktop/UX \_ Pillan/Assignment 4/SCRAPING/What do you think about AI music tools\_ Would yo XA ☆'. The main interface has tabs for 'JSON', 'Dati non elaborati', and 'Header', with 'JSON' selected. Below the tabs are buttons for 'Salva', 'Copia', 'Comprimi tutto', 'Espandi tutto', and 'Filtro JSON'. The JSON data is displayed in a hierarchical tree view:

```
▼ 0:
  ▼ Title: "\n    AI for mixing/mastering absolutely. For generating the actual music, maybe I will get left in the dust with this attitude, but hard pass... For now\n    "
  flex_URL: "https://www.reddit.com/user/Wyverz/"
  Content: "\n      Wyverz\n      "
  ▼ Content1: "https://www.reddit.com/r/ableton/comments/13lwy3f/comment/jkspawm/"
  Content2: "6 mesi fa"
  flex: "Rispondi"
  md: ""
  py0: ""

▼ 1:
  ▼ Title: "\n    I've been using lalal.ai to extract samples for a while now. It's literally magic and would have changed music if it had come out 15-20 years earlier.\n    "
  flex_URL: "https://www.reddit.com/user/Amsterdam/"
  Content: "\n      Amsterdam\n      "
  ▼ Content1: "https://www.reddit.com/r/ableton/comments/13lwy3f/comment/jks6dtz/"
  Content2: "6 mesi fa"
  flex: "Rispondi"
  md: ""
  ▼ py0: "\n      I don't intend to use generative ai, unless it's to change a single lyric or a small portion of a sample.\n      "

▼ 2:
  ▼ Title: "\n    The most useful AI tools related to music for me would be the ability to listen to a section of music, then create a prompt to recreate a patch / sound within a specific synth, or for it to provide suggestions of synths that might get you close. I'm not looking to nail the sound, but get close then do my own thing with it.\n    "
  flex_URL: "https://www.reddit.com/user/_wheeljack_/"
  Content: "\n      _wheeljack_\n      "
  ▼ Content1: "https://www.reddit.com/r/ableton/comments/13lwy3f/comment/jkt0cvz/"
  Content2: "6 mesi fa"
  flex: "Rispondi"
  ▼ md: "\n    The most useful AI tools related to music for me would be the ability to listen to a section of music, then create a prompt to recreate a patch / sound within a specific synth, or for it to provide suggestions of synths that might get you close. I'm not looking to nail the sound, but get close then do my own thing with it.\n    "
  ▼ py0: "\n      Similarly tools that could break down compositional components - chord progressions, keys, arrangement, etc.\n      "

▼ 3:
```

The first step in proceeding towards the quantitative analysis of the phenomenon was data collection. Several conversations were selected, and data was gathered using data collection software. Subsequently, the obtained file was converted into CSV format to ensure a greater readability and data management.

# Digital ethnography – Scraping, Data cleaning

whatdoyouthink.numbers

This screenshot shows a Numbers spreadsheet titled "whatdoyouthink.numbers" containing data scraped from a Reddit thread. The spreadsheet has a dark theme and includes a toolbar with various icons for file operations and data analysis.

The data is organized into columns:

- A:** Discussion (containing the original post content)
- B:** List comments (containing the URLs of the comments being analyzed)
- C:** flex\_URL (containing the URLs of the comments)
- D:** Users\_Level1 (containing user names like Wyverz, Amsterdam, \_wheeljack\_, etc.)
- E:** Link\_User (containing the URLs of the comments)
- F:** Date (containing the date of the comments)
- G:** flex (containing the type of AI used)
- H:** Comment\_Level1 (containing the first-level comment text)
- I:** Users\_Level2 (containing user names like SlantedFrame, vitorbalzano, NovaNewChorus, etc.)
- J:** Comment\_Level2 (containing the second-level reply text)
- K:** Users\_Level3 (containing user names like spirit\_goaat, etc.)
- L:** Comment\_Level3 (containing the third-level reply text)
- M:** Comments\_Level3 (containing the fourth-level reply text)

The data rows represent individual comments from the Reddit thread, with each row corresponding to a specific comment ID (e.g., 1, 2, 3, 4, 5, 6) and its replies.

	Discussion	List comments	flex_URL	Users_Level1	Link_User	Date	flex	Comment_Level1	Users_Level2	Comment_Level2	Users_Level3	Comments_Level3
1	What do you think about AI music tools? Would you use them for your own music?		1 https://www.reddit.com/user/Wyverz/	Wyverz	https://www.reddit.com/r/ableton/comments/13iwv3f/comment/jkspawn/	6 mesi fa	Rispondi	AI for mixing/mastering absolutely. For generating the actual music, maybe I will get left in the dust with this attitude, but hard pass... For now	SlantedFrame	Agreed. I'm here to make my music. And I'm a damn machine learning researcher (with degrees and shit). (Ok, more a synthetic cognition researcher or whatever but you get it)		
2	I'm an AI researcher working on generative music algorithms, which I guess has gotten a lot less attention recently compared to generative art applications. They may not be as well known as Midjourny and Stable Diffusion for images but there are several platforms/tools that already for generating music with AI such as AIVA, Beethoven, Loudly, Mubert, Soundraw, Boomly, Riffusion, and probably many more currently in development. Have you heard any of these similar tools already? What was your impression? Are they something you would be interested in using as part of your production workflow? Or some future improved version of them?								vitorbalzano	ETA gonna wrt. mixing/mastering. I might look at that but, really, CTZ works pretty great, is dead simple (mostly), and gets you 65% (71% maybe?) of the way there	spirit_goaat	do you have any examples of AI based plugins/tools for mixing and mastering?
3			2 https://www.reddit.com/user/Amsterdam/	Amsterdam	https://www.reddit.com/r/ableton/comments/13iwv3f/comment/jks8dtz/	6 mesi fa	Rispondi	I've been using lalal.ai to extract samples for a while now. It's literally magic and would have changed music if it had come out 15-20 years earlier.	NovaNewChorus	Mixing IDK, it feels really complex. Mastering, I feel like I get a better job than I could do on my own out of Ableton. I sound good, but I also feel that if I learned more I could kind of crush it		
4			3 https://www.reddit.com/user/_wheeljack_	_wheeljack_	https://www.reddit.com/r/ableton/comments/13iwv3f/comment/jkt0cvz/	6 mesi fa	Rispondi	I don't intend to use generative ai, unless it's to change a single lyric or a small portion of a sample.	NovaNewChorus	serato stems does the same thing and it's free in serato dj lite	Amsterdam	I've tried all of them, and they don't compare to lalal.ai, which is the most lossless. I'm sure they still have their benefits, but for what I'm doing, lalal.ai is the best
5												
6												

The next step involved cleaning and selecting the relevant data contained within the file.

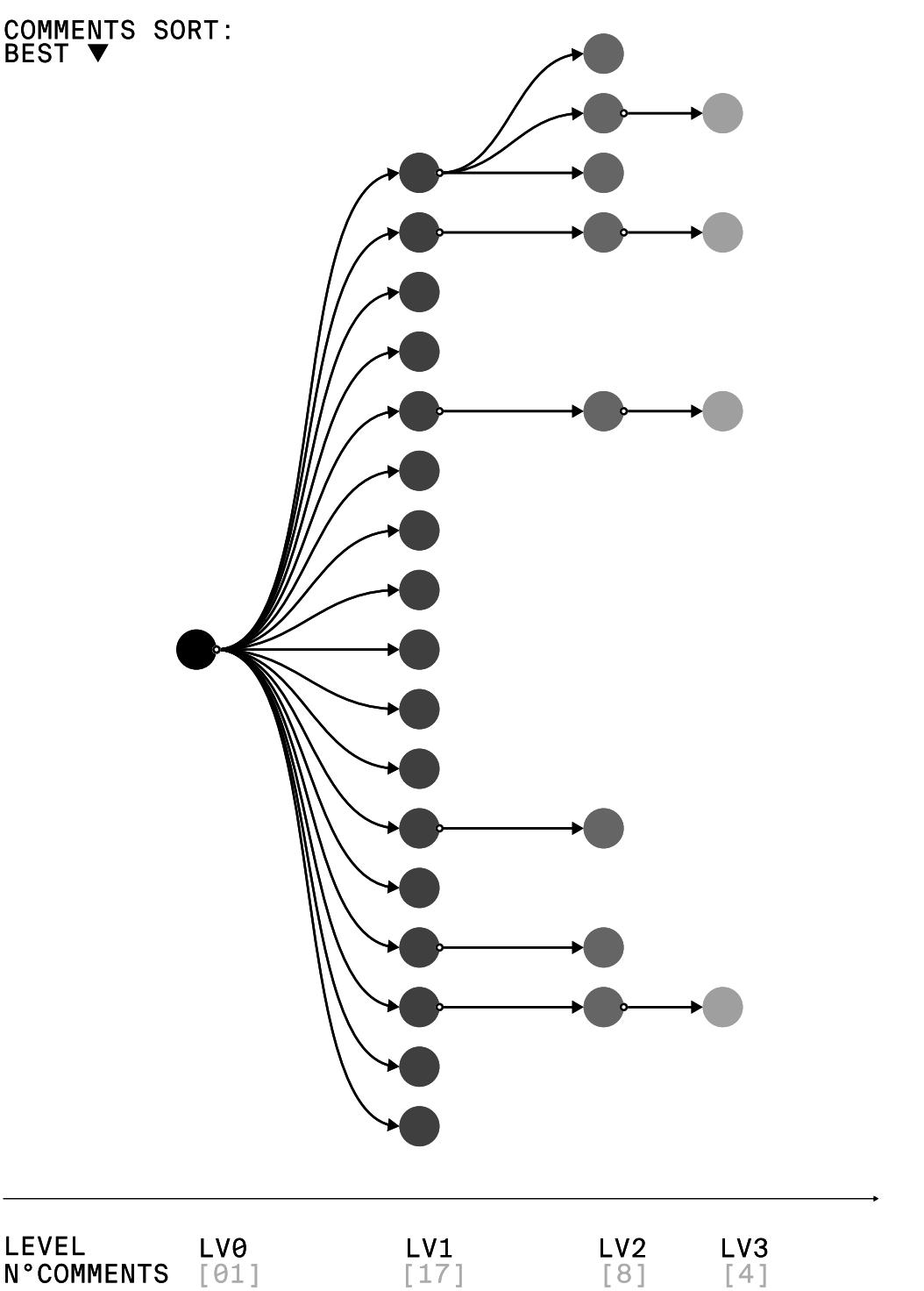
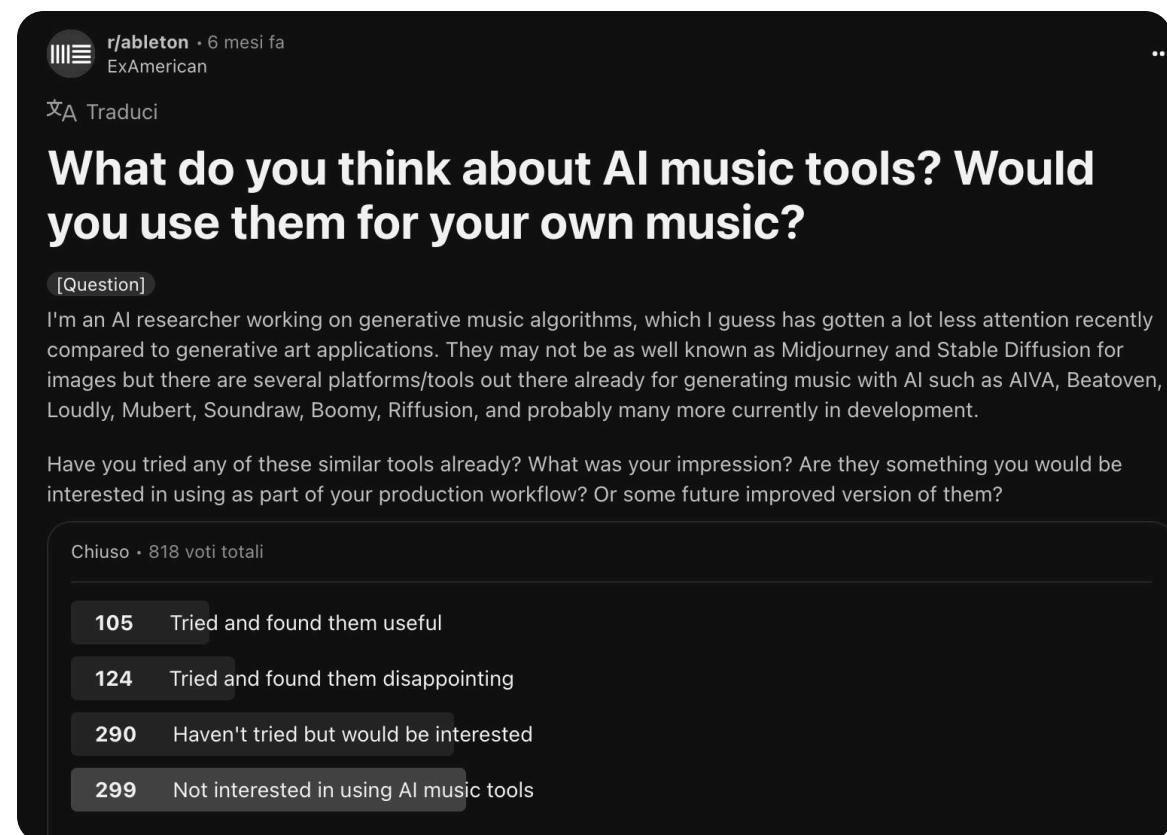
# Digital ethnography – Scraping, Data visualization

# DIGITAL ENVIRONMENT: YOUTUBE

# STRUCTURE OF THE COMMENTS OF THE CONVERSATION

# WORD ANALYSIS

# CONVERSATION 01



# Digital ethnography – Scraping, Data visualization

## DIGITAL ENVIRONMENT: YOUTUBE

VIDEO 01



VIDEO 02



## WORD ANALYSIS COMPARISON

WORD 01

word analysis comparison for Video 01. The most frequent words are:

- people
- music
- video
- musician
- artist
- song
- work
- art
- years
- years

The words "people", "music", and "video" are the most prominent, indicating a focus on the music industry and its creators.

WORD 02

word analysis comparison for Video 02. The most frequent words are:

- music
- musician
- artist
- song
- work
- art
- years
- years

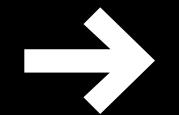
The words "music", "musician", and "artist" are the most prominent, reflecting the theme of the video about the impact of AI on the music industry.

# Interviews methodology

GOAL



INTERVIEW'S STRUCTURE



QUALITATIVE DATAS

Through web scraping, we obtained quantitative data. It seemed appropriate to expand this investigation from the digital world to the real world, considering some potential users, different from each other but related with the research topic.

The goal is to understand the creative process involved in composing a song, in its various stages, and to investigate the actual use of AI in music production, along with any potential weaknesses in the production process that could be improved through the use of AI.

We interviewed four users, categorizable as "singers-producers" and "industry experts", in order to analyze the theme of music production through AI from two different perspectives: one more practical and one more theoretical.

## PART 01 - THE CREATIVE PROCESS

Questions related to the creative process and the steps taken in the generation of a song.

## PART 02 - WEAKNESSES

Questions concerning the weaknesses of the creative process and the implementation of AI to solve the problem.

## PART 03 - FUTURE SCENARIOS

Questions related to the use of AI in music production and possible future scenarios, useful for the interviewed user.

# Interviews

Practical perspective



VALCO

SINGER - PRODUCER

"Where do you get your samples from?"  
"Mainly from Splice."  
  
"What is the most challenging part in your creative journey?"  
"Not knowing how to play an instrument, when I want to build melodies, I have to rely on what I find and what's available. That's the hassle."

"Have you ever used AI to generate a sample based on the entered prompt? If yes, where?"

"Yes, I have, but I don't remember its name. I didn't like it because the output was almost a complete beat when I needed, for example, only a sample."

"In this case, would you use AI to compensate for that?"

"Yes, I would, of course. It would be nice to generate samples based on a scenario, a mood. Without copying what already exists, though; in that case, it would become very commercial (for amateurs)."

"What are the potential of AI in the musical field."

"To allow everyone to make music, even for those who know nothing about it."

"What tool could be useful for you in production through AI?"  
  
"For example, once I have the beat fairly complete, I can click a button like 're-choose,' and it shows me a version of the beat with other sounds taken from my PC/Splice/FL Cloud that the AI deems more fitting to the genre/sound I'm looking for. Or if I want to make a top 10 trap piece, then the AI will be based on the drums and the general sound of those pieces."

"How does your creative process work for making a song?"

"I start with the beat. I look for a sample, and as soon as I find it, everything starts falling into place, so to speak. I look for other samples and start structuring everything, create a rough mix, and then write over it."

"What could be the most suitable prompt for sample generation?"

"In my opinion, a mix of textual and auditory input: I ask for what I want, giving it a set of notes. I want a guitar 'like this, this, and this,' creating this melody..."



44MOCA

SINGER - PRODUCER - GUITARIST

"How does your creative process work when making a song?"  
  
"Basically, I pick up the guitar and start playing randomly until something cool comes out; otherwise, I look for a sample... Basically, I play the guitar and then enrich it with samples and arrange the whole thing."

"What is the most challenging part of the creative process?"

"Well, for example, if I can't come up with a nice guitar part, it gets me down a bit."

"Do you use AI during your creative process? If yes, how?"

"No, I don't use it because I don't have the means. I would be the first. But how could I use it? I would be the first to integrate it, but if I haven't done it, it means that an effective way to integrate it hasn't come out yet."

"How do you search for samples on Splice?"

"I filter the samples. There are various categories: vocals, strings, brass... you choose the macro category and then further filter the samples by BPM, genre, and key."

"What are the potential benefits of AI integration?"

"It simplifies your work in terms of time. If I tell it to generate 10 samples the way I want them, with those scales, those BPM... in a few seconds, I have 10 samples that can be useful, whereas if I play or search for them, it takes much longer."

"Which prompt do you think is most effective in questioning AI in the musical context?"

"I don't know. It would be nice to upload a track or a melody and play it with other instruments... a kind of converter."

"And where should the use of AI in music production be limited?"

"It should be limited in such a way that the output is not too similar to what already exists. It shouldn't get too close to plagiarism."

"And how would you use this hypothetical 'perfect' AI integration program?"

"I would use it to find or create melodies, but also just to experiment, to have fun."

# Interviews

Industry expert



BEATRICE

AUDIO ENGINEER

*Do you use samples?*

"Yes, I sometimes use samples, to which I typically add effects or manipulate by cutting, copying, and pasting in various ways."

*Do you use AI? Have you ever integrated AI into your production/creation?*

"I do not use AI by integrating it into production or mixing because I have never found the need, and also because I want to leverage my creative skills and potential without relying on it. The only occasional use I make of AI is to clean up certain audio using the RX plugin by iZotope."

"I typically create tracks in the studio, the process often begins with someone's idea, and we experiment with various instruments, effects, and opinions until the basic structure of the song emerges."

*In your opinion, what are the potentialities of AI?*

"The potential of AI is certainly to streamline processes that can be challenging and time-consuming, but it limits creativity and the beauty of achieving excellent results independently. It also hinders both technical and musical learning, consequently leading to mental inertia."

"My creative process is based on two approaches: finding inspiration in everyday life and personal experiences, capturing specific emotions, and drawing influence from films, art exhibitions, and books. In the studio, I mentally recreate these experiences to translate them into sound. Collaborating with other producers and artists is crucial, where ideas take shape through experimentation and the sharing of opinions."

"The programs I mostly use are Logic Pro, Pro Tools, and Ableton."



MANUEL

SOUND DESIGNER – AUDIO ENGINEER

*Why did you integrate AI into production? What were the reasons behind this decision?*

"Always look to the future; otherwise, there's no progress. It's pointless to keep producing things that have already been seen in different ways, so always aim to experiment with something new."

*Have you used AI in your creative process?*

"Yes, especially in sampling using text-to-music technology. This allows me to describe a sound, and AI generates a corresponding composition. It's a powerful tool for creating unique and surreal compositions, like a choir of whales and monkeys in a bathroom. However, there are artistic limitations, such as short and monophonic samples, requiring additional work for the human. AI serves as a valuable input, offering a starting point and an additional creative tool."

*So, do you see AI as an extension of ourselves, enhancing our abilities without entirely replacing human functions?*

"I'm unsure; I'm conflicted. It might replace us entirely—imagine an intelligence like yours, but with infinite memory, operating ten times faster, performing calculations billions of times quicker, and never forgetting what it learns."

*Which software/websites have you used for sound generation?*

"In addition to the most well-known ones like Audiocraft and Audiogen, for sound generation, I can think of Synplant, which is a plugin. Its training is based on genetic models of how plants develop, and it uses them to generate melodies, rhythms, and sounds based on the input you provide."

*Do you use AI?*

"Let's say that from a musical perspective, they are still emerging, so I've used them very little for now. However, I believe they have untapped potential."

"The musical features are still lacking, especially in terms of timbre and dynamics. However, interesting results can be achieved, particularly from a semantic perspective: through words, you can convey what you desire and create truly innovative combinations."

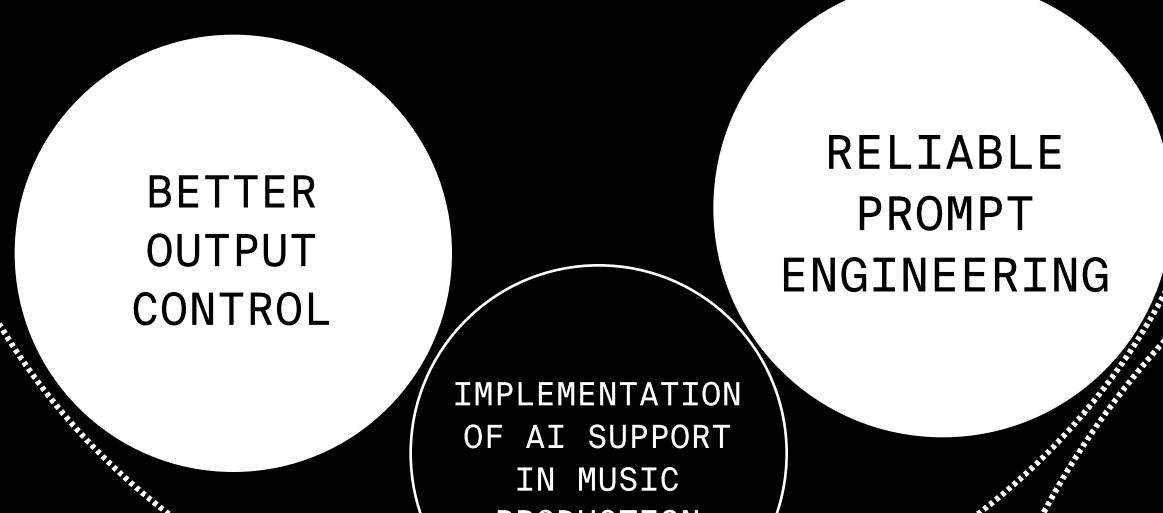
"I think the realm of AI sampling is kind of old-fashioned. AI should be employed in a "wrong" way: for instance, glitches arise because the equipment was malfunctioning, and someone innovatively decided to use that inherently flawed sound, born out of an error, to later discover a musical significance. So, we should break AI to get really interesting results, not use it in a simple or expected way."

"It's interesting to note that, despite the initial idea that art would be immune to replacement by machines, AI has already begun to influence language, content creation, and images. Speaking in the context of art and design, AI could lead to radical changes that are currently challenging to predict."

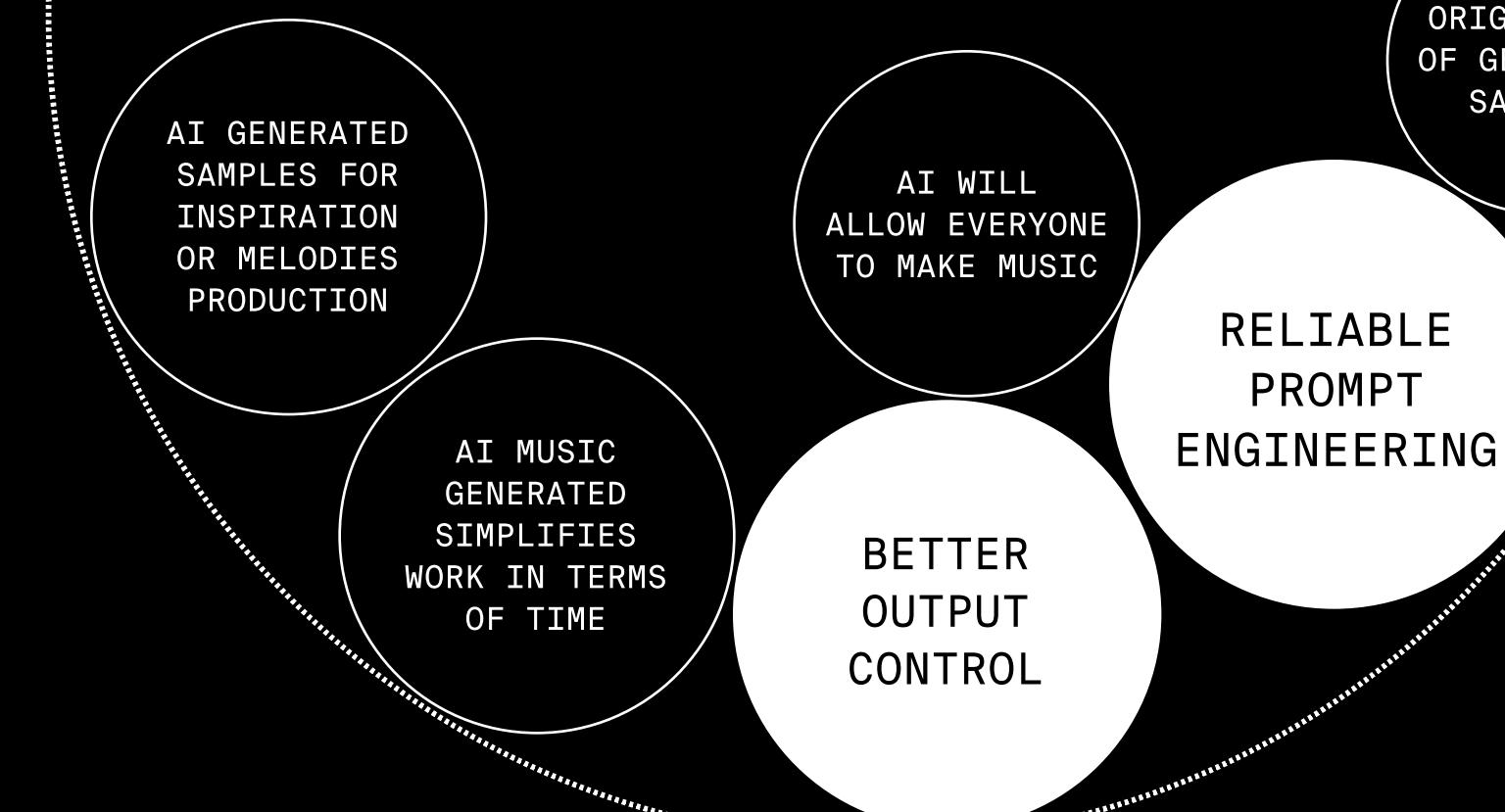
# Insights / Gathered informations

By observing and analyzing the conversations in their natural context, the research has sought to provide valuable insights into the general mood and mindset of the individuals or communities being studied. This chapter's findings will contribute to a deeper understanding of their thoughts, which can inform decision-making, strategies, and future research in the field.

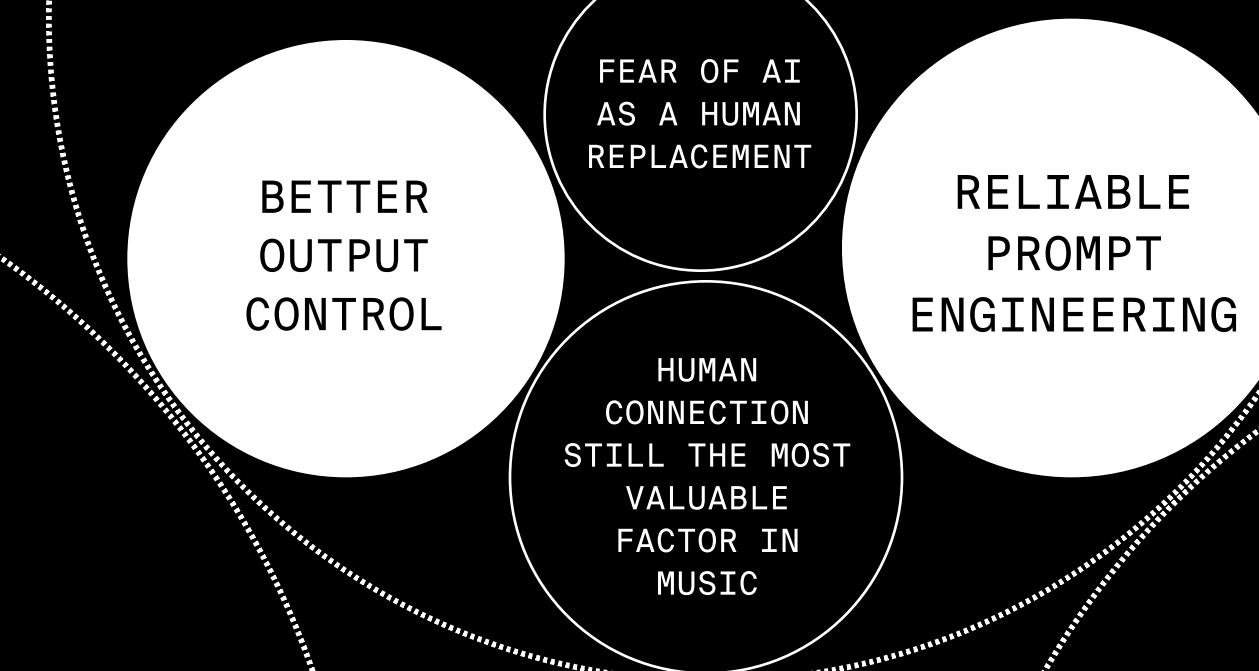
## DESK RESEARCH



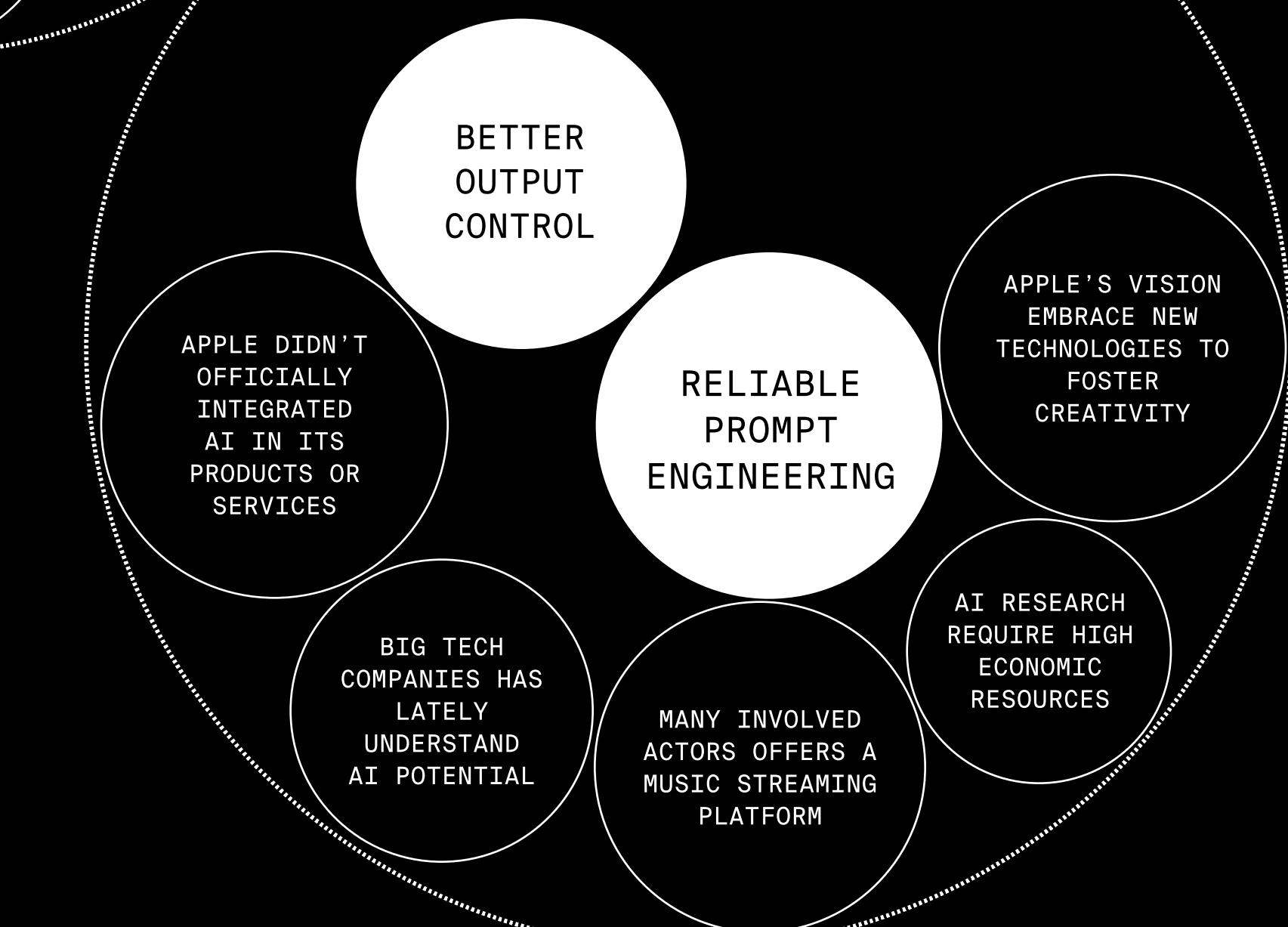
## INTERVIEW



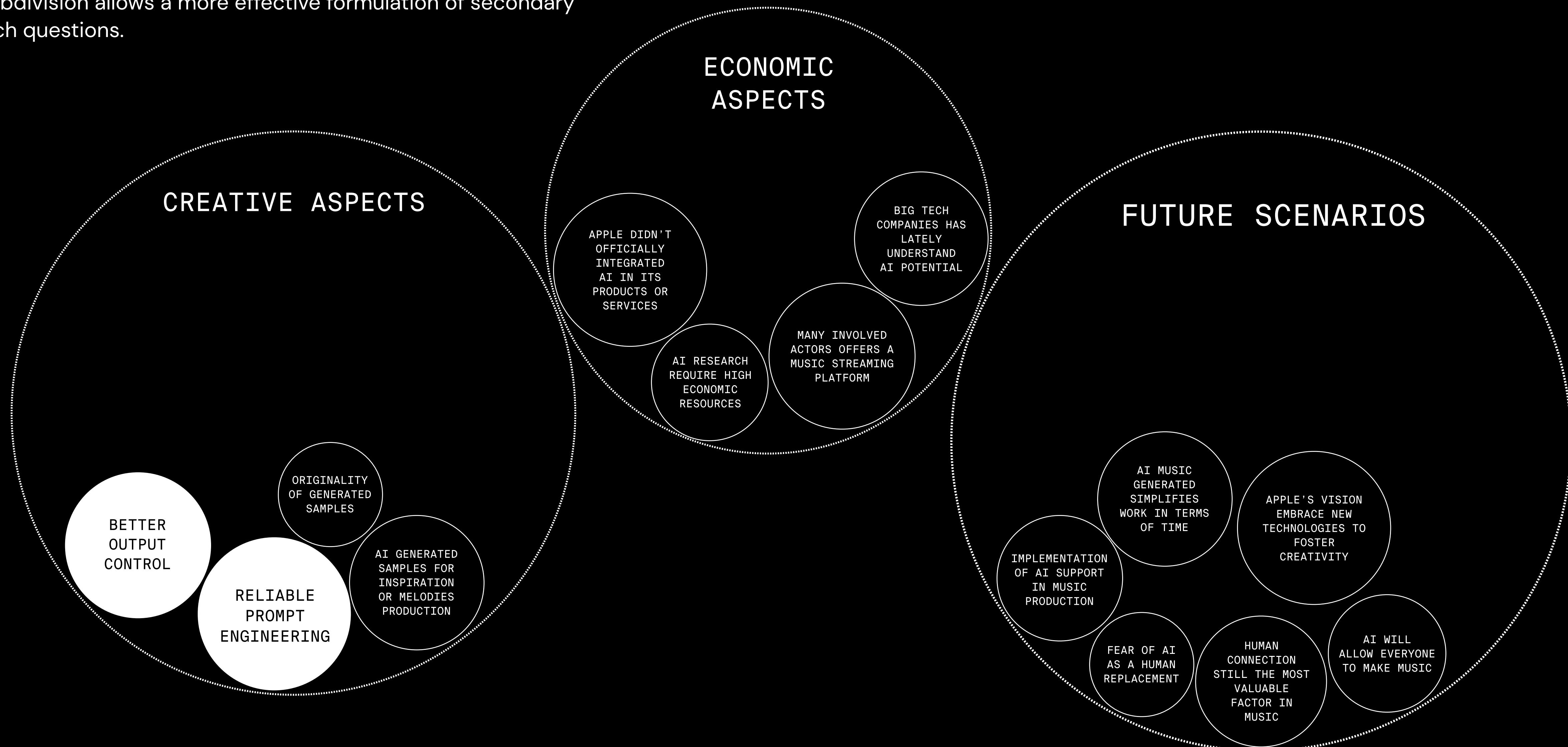
## DIGITAL ETHNOGRAPHY



## BENCHMARK



Division of insights into different domains (creative, economic, and future scenarios). The identified domains appeared to be the most suitable for guiding and structuring the subsequent research. This subdivision allows a more effective formulation of secondary research questions.



# New questions / creative and economic aspects, future scenarios

By delving into these new questions, the research seeks to understand better the dynamic interplay between creativity and economic factors, and their potential implications for future developments in the market. It investigates how creative industries and economic landscapes could intersect and shape innovative solutions in the face of changing trends, technologies, and society's mental models.

## CREATIVE ASPECT

**How can we take advantage of AI music while respecting artistic originality?**

How can AI assist artists in overcoming creative blocks and exploring new musical fields as a source of inspiration?

What is the threshold at which we consider AI responsible for music creation?  
Should the AI itself or the user who inputs the data be considered the 'creator' of the musical product?

What types of prompts are most effective in communicating ideas for music and sound generation to an AI computing system?

## ECONOMIC ASPECT

How can AI-generated music be seamlessly implemented into existing music streaming platforms?

How can AI-generated music production enhance user engagement and desirability for a music streaming platform?

**Which unique AI music production service could be developed on a music streaming platform?**

## FUTURE SCENARIOS

What specific tools or technologies could be developed to enable more effective collaboration between artists and AI?

**How technologies related to music production are evolving?**

How will AI impact the job market in the creative and technical music industry?

Which are potential new scenarios for interaction and communication between the human mind and AI in the context of artistic expression?

# Final Brief&Client /

CLIENT SELECTED

Apple

FINAL BRIEF

**What do I have to do to innovate in the context of AI generated music production?**

**Introducing within existing streaming platforms a system deeply rooted in the realm of generative music production.**

The system's aim is to engage users across varying levels of musical expertise, broadening the scope of individuals involved in music generation. It seeks to accompany individuals, offering support throughout their creative journey or serving as a wellspring of inspiration.

Central to the design process is the development of a tool focused on assisting users in their creative endeavors. This tool will enable them to explore and experiment with diverse prompts beyond traditional text-based ones.

The goal is to facilitate the generation of high-quality outputs that resonate closely with the diverse forms through which creative ideas manifest in the human mind.

Moreover, the design will prioritize the creation of a system that empowers users with precise and user-friendly control throughout the creative process and over the final output. This system will require no specialized technical knowledge in IT or musicology, ensuring accessibility and ease of use for all users.

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