

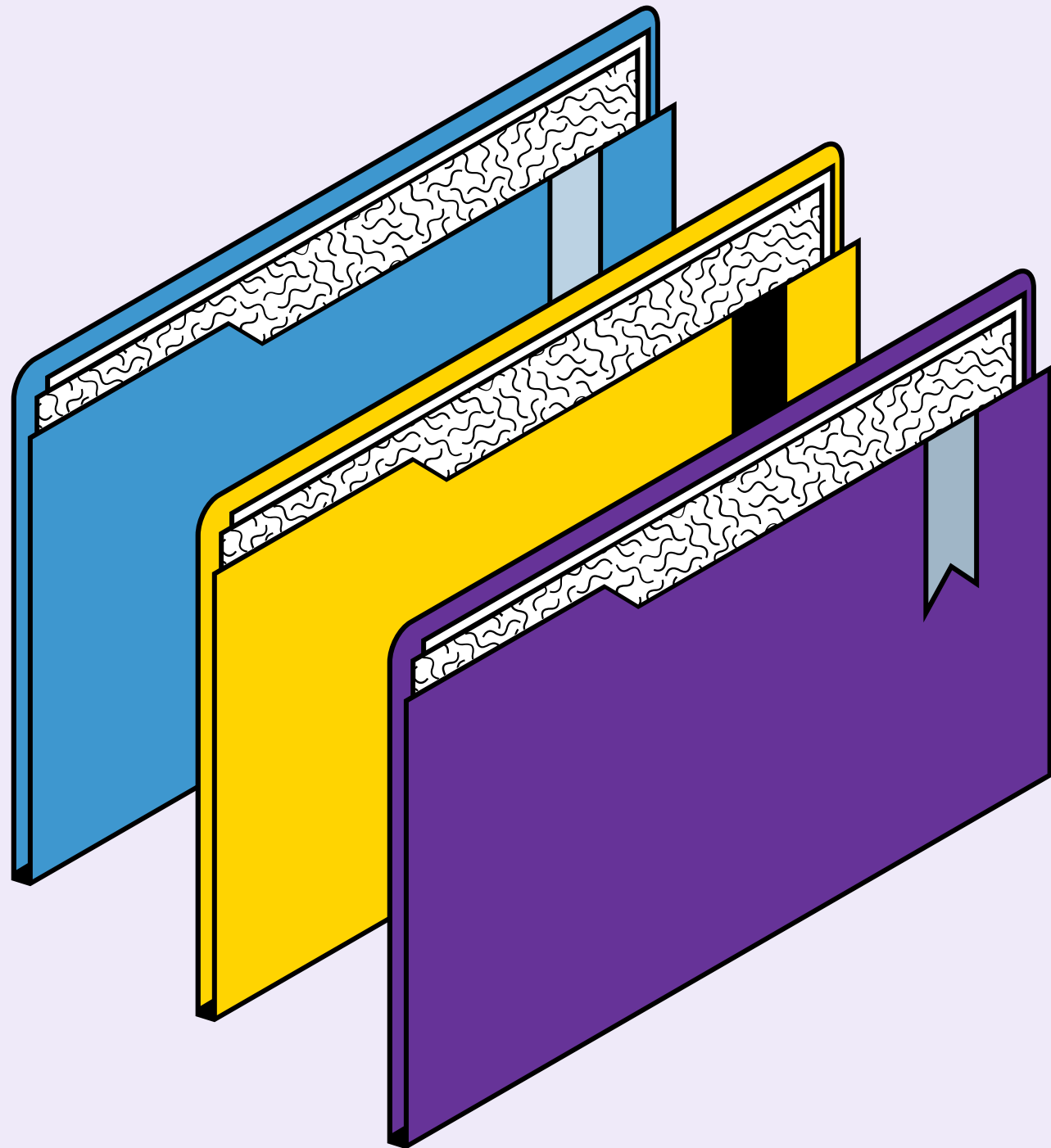


*IRC Meeting*  
*13 September 2023*



**The AEC ARTEMIS Digitisation  
Working Group presents:**

**The Digitisation  
Online Workshop**



# Agenda



- Welcome & Introduction
- Digital as a creative medium
- Digital Audiences

## Group Discussion

- Digital Skills for musicians
- Encouraging the development of Digital Skills and Culture in Conservatoire practice

## Group Discussion

# Introduction



## Digital as a creative medium

*new forms, new playground, new actor for artistic creation*

## Digital Audience

*relationship to the public, interaction, community*

## Pedagogy and Digital Skills

*new skills, new medium for learning and teaching process*

## Institutional Culture and Digital Mindset

*to understand by doing  
and to do by understanding*

**4 PILARS  
TO TALK ABOUT  
DIGITISATION**

# Digital as creative medium

**Enric Guaus, ESMUC, Spain**



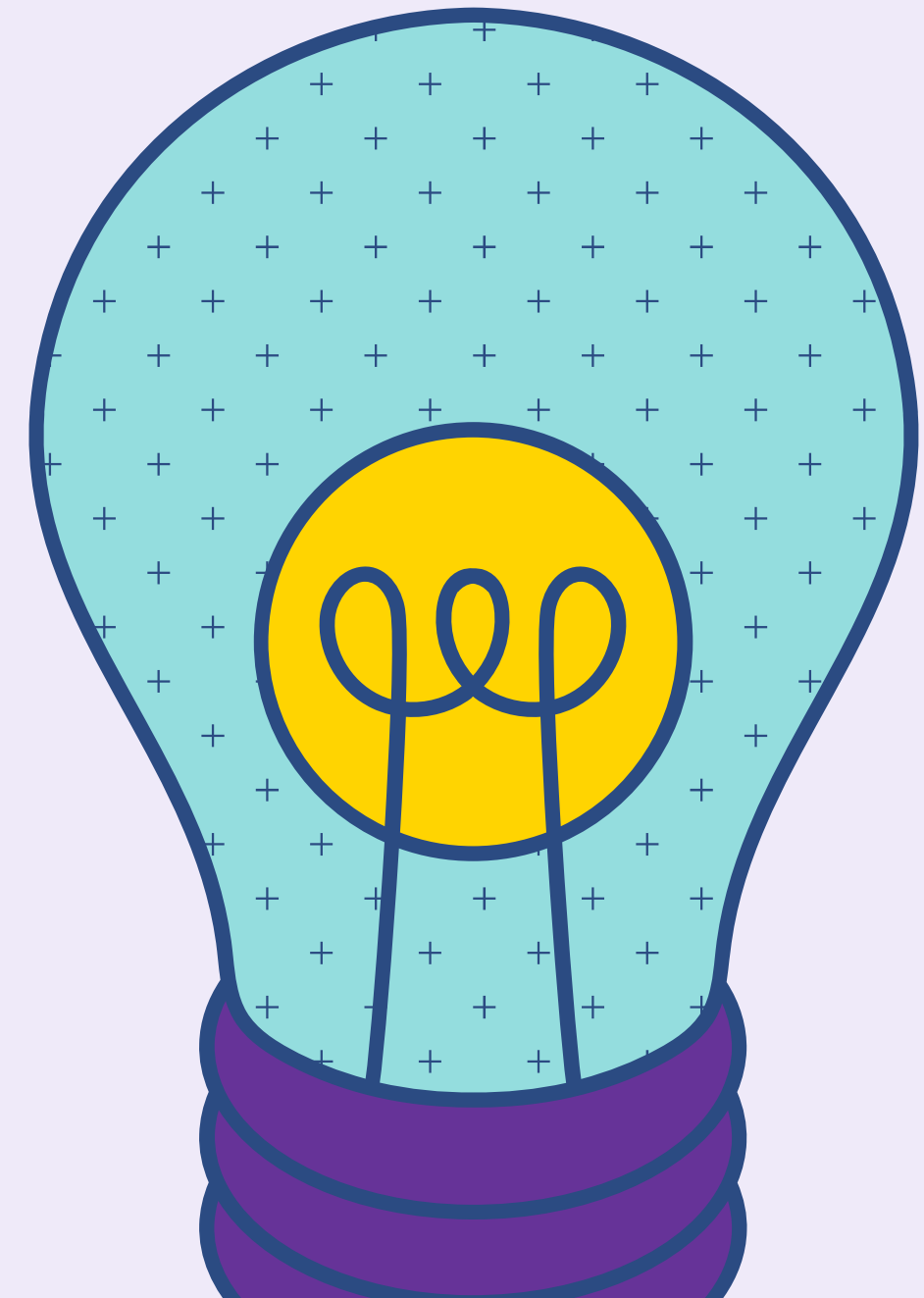
## **Network music**

- Context
- Previous work
- La Roda

## **Music and AI**

- Background
- Examples (ArInt, NaNAl, MAI)

## **Local conclusions**





# Network music - Context



Teaching	Same time (sync)	Different time (not sync)
Same place	Campus	Online forums
Different place	"Zoom"	Video lessons

Teaching models proposed by Satish Stromberg, IRC-AEC, Vigo, 2020.

Musical ensemble	Same time (sync)	Different time (not sync)
Same place	Campus Traditional setup	Online forums Online DAW, SoundCloud...
Different place	"Zoom""Jamtaba", etc. Experimental	Video lessons Youtube videos

Based on teaching models proposed by Satish Stromberg, 2020. Inspired by [Barbosa, 2003]

# Network music - Context



Teaching	Same time (sync)	Different time (not sync)
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Teaching models proposed by Satish Stromberg, IRC-AEC, Vigo, 2020.

Musical ensemble	Same time (sync)	Different time (not sync)
Same place		Online forums Online DAW, SoundCloud...
Different place		Video lessons Youtube videos

Based on teaching models proposed by Satish Stromberg, 2020. Inspired by [Barbosa, 2003]

# Digital as creative medium



## COVID-19 pandemic

- Classes became online (even music lessons)
  1. Adoption of LMS (Moodle, Classroom, Canvas, Blackboard, etc.)



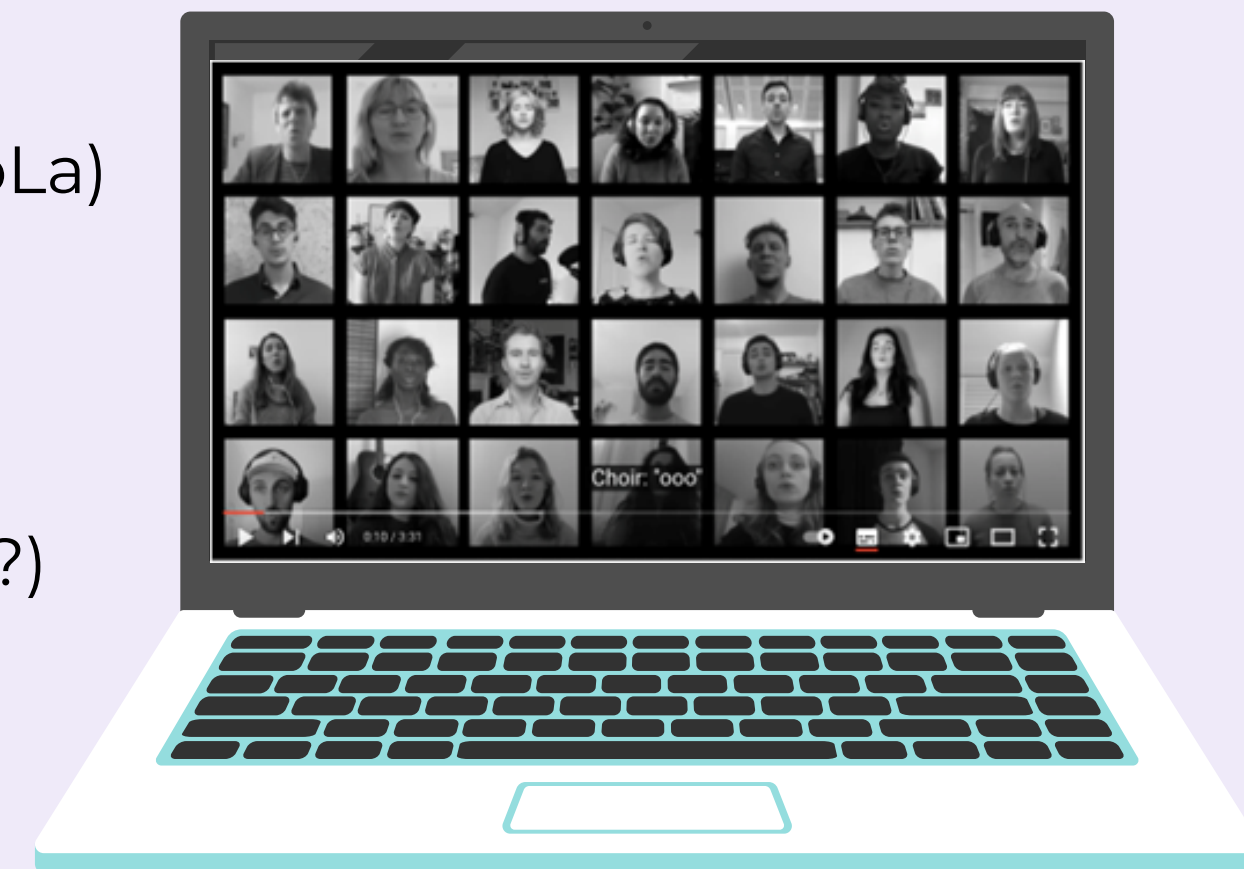
## Attempts playing together

- Virtual ensembles with video editing (usually shared on Youtube).
- Digital tools for playing online using internet connections
  1. Using meeting tools (Zoom, Jitsi, Meet, etc.)
  2. Using DAW or specific tools for musicians (Jamtaba, Sonobus, etc.)
- Institutional solutions for playing together were not available (i.e. LoLa)

## Traditional festivals and conferences with streaming

- Full/partial online conferences (Artificia, AI Music Festival)
- Full/partial online music festivals (Network Music Festival, TopLap ??)

## Can the network be part of the creative process?



# Network music – Previous work



- Gresham-Lancaster, Scot. "The Aesthetics and History of the Hub: The Effects of Changing Technology on Network Computer Music." *Leonardo Music Journal* 8 (1998): 39-44. [Muse.jhu.edu/article/585412](https://www.muse.jhu.edu/article/585412).
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- Barbosa, Álvaro. 2003. "Displaced Soundscapes: A Survey of Network Systems for Music and Sonic Art Creation." *Leonardo Music Journal* 13 (December 2003): 53–59. <https://doi.org/10.1162/096112104322750791>.
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- Ramsay, David B, and Joseph A Paradiso. 2015. "GroupLoop: A Collaborative , Network-Enabled Audio Feedback Instrument." In *Proceedings of the International Conference on New Interfaces for Musical Expression*, 251–54. [http://www.nime.org/proceedings/2015/nime2015\\_119.pdf](http://www.nime.org/proceedings/2015/nime2015_119.pdf).
- Mohammad, Zakaria, and Kun Setyaning Astuti. 2021. "Hyperreality of Virtual Music Ensemble." *Proceedings of the 4th International Conference on Arts and Arts Education (ICAAE 2020)* 552 (Icaae 2020): 192–96. <https://doi.org/10.2991/assehr.k.210602.038>.
- Fasciani, Stefano. 2020. *Network-Based Collaborative Music Making*. University of Oslo. <https://youtu.be/GZCueJeg168>.
- Jordà, Sergi. 2002. "FMOL: Toward User-Friendly, Sophisticated New Musical Instruments". *Computer Music Journal*, 26 (3), 23-39. <https://doi.org/10.1162/014892602320582954>



# Network music – Previous work



Some interesting works:

## The Hub (1986)

- From the League of Automatic Music Composers
- Include a Hub in their performances

## Tanaka (1999)

- "So, then an essential quality of the network becomes a problem. I would prefer to respect this character of the net, and conceive of a type of music that uses the delay to advantage. After all, no one ever complained about the long reverberation time of a cathedral. It is not a problem, it is acoustic. So, I propose: can we think of IP packet delays as a network acoustic that defines this new space in which we play? "

## Jordà (2002)

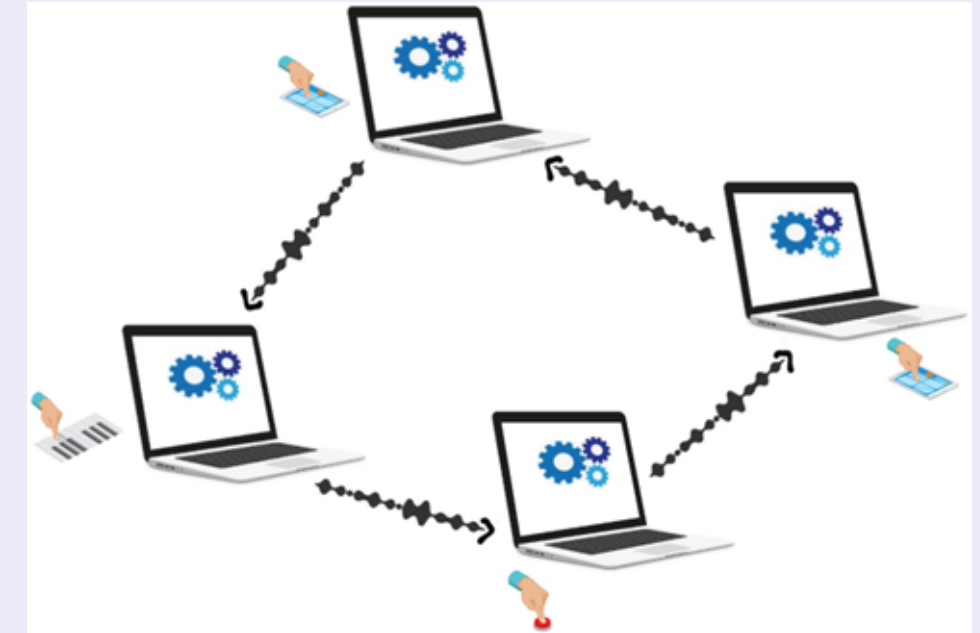
- F@ust Music On-Line (FMOL)
- Instrument used on the Internet.



# Network music – La Roda



- Based on The Telephone Game
- Individual connections in a loop
- Peer2Peer connections with different latencies
- Creates an accumulative distortion of audio signal
- Result is collaborative and unpredictable
- Flexible configuration (software, participants...)
- The LATENCY is crucial
  - Sum of all the individual latencies = tempo of the piece
  - Allowing the audio result being stable





# Network music – La Roda



# Music and AI – Background



In the last years, AI has provided numerous breakthroughs within the music industries:

- automatic music recommendation (p.ex. [Spotify](#))
- copyright management companies using AI (p.ex. [BMAT](#))
- Free online text to speech applications (p.ex. [Murf](#))
- Noise removal plugins (p.ex. [LALAL.AI](#))

Nowadays, with the emergence of generative artificial intelligence ([wikipedia](#)) part of the research in music applications is focused on:

- the automatic creation of melodies given a list of tags (p.ex. [Mubert](#))
- a short textual description (p.ex. [Riffusion](#))
- detailed textual description (p.ex. [MusicML](#)).

These stunning products are the result of many years of research carried out by universities and institutions sharing their results through

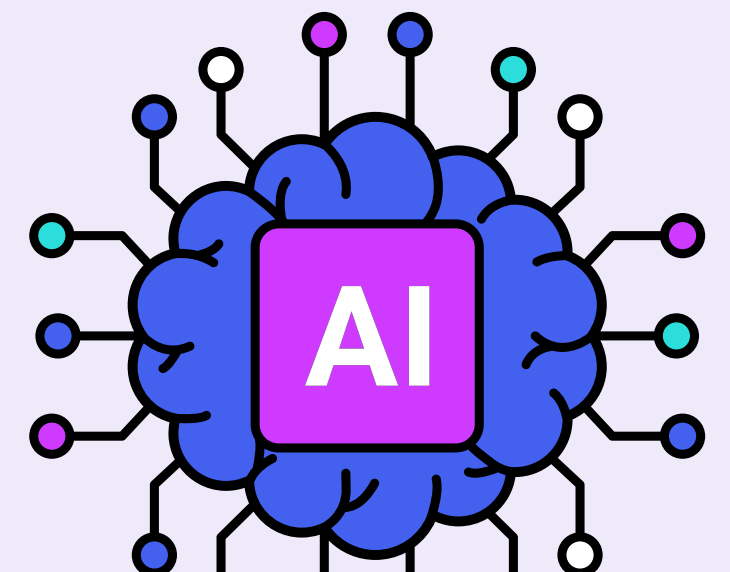
- research papers in journals and conferences (p.ex. [ISMIR](#))
- code (p.ex. [Tensorflow](#))
- datasets (p.ex. [MusicBrainz](#))



# Music and AI – Background



- Composers who have used AI models in their compositions in:
  - contemporary music (p.ex. Quayola & Seta)
  - jazz (p.ex. Marco Mezquida)
  - electronic music (p.ex. Mouse on Mars).
- In these cases, the models used on stage have been created thanks to external collaboration or extensive in-house **knowledge in computer science and data mining**.
- According to Born (2021), this division of tasks between the composer and scientist may become a “**subordination-service**” in which science is brought in apparently as subordinate discipline to ‘serve’ what are assumed to be the pre-existing, autonomous creative ‘visions’ or ‘needs’ of composers.
- Include the “**co-creation**” concept in music creation.



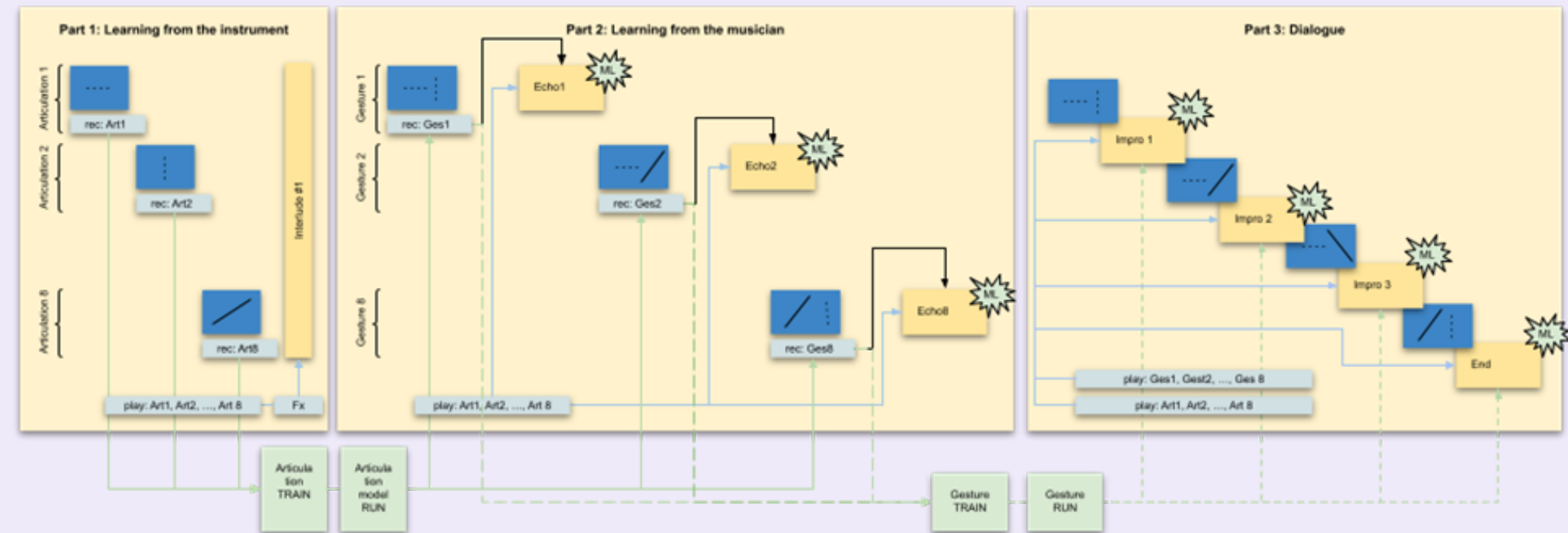
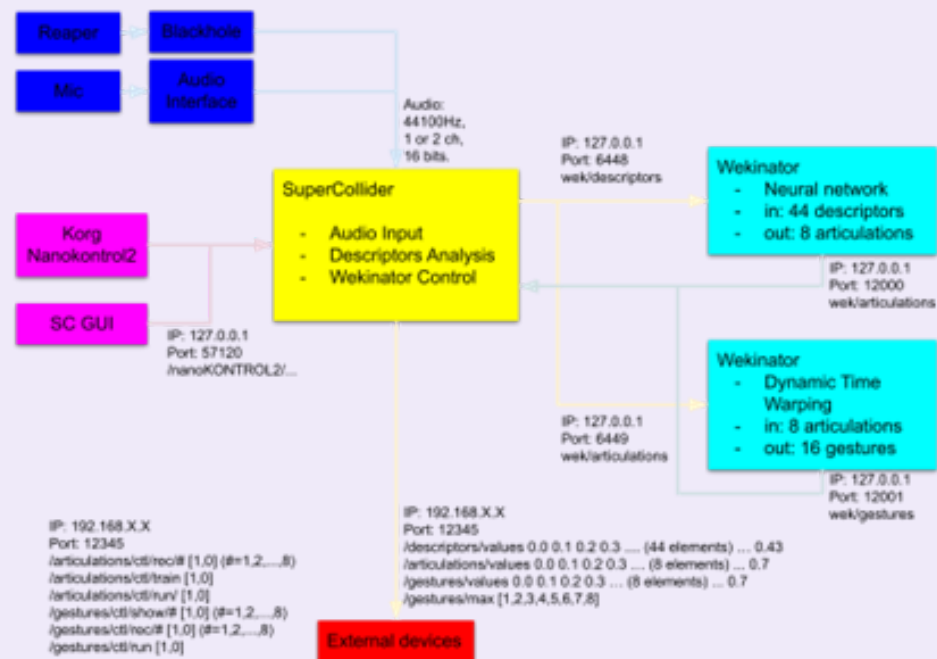
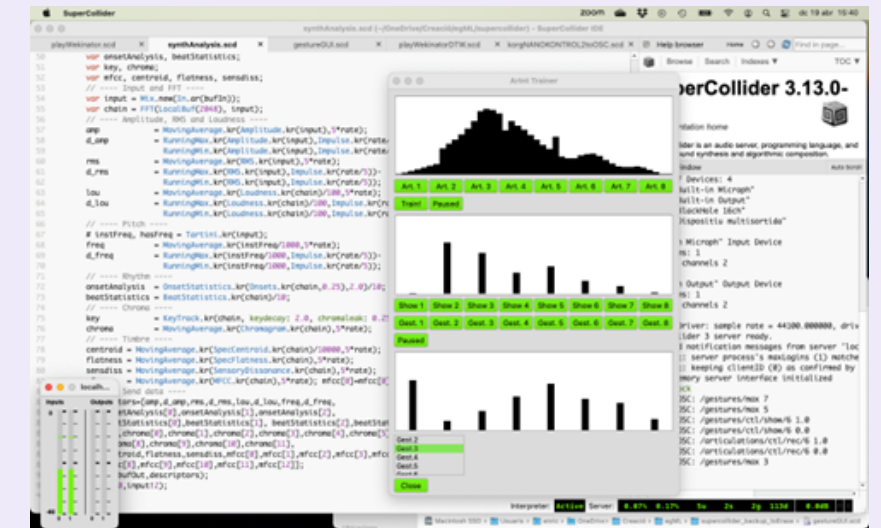
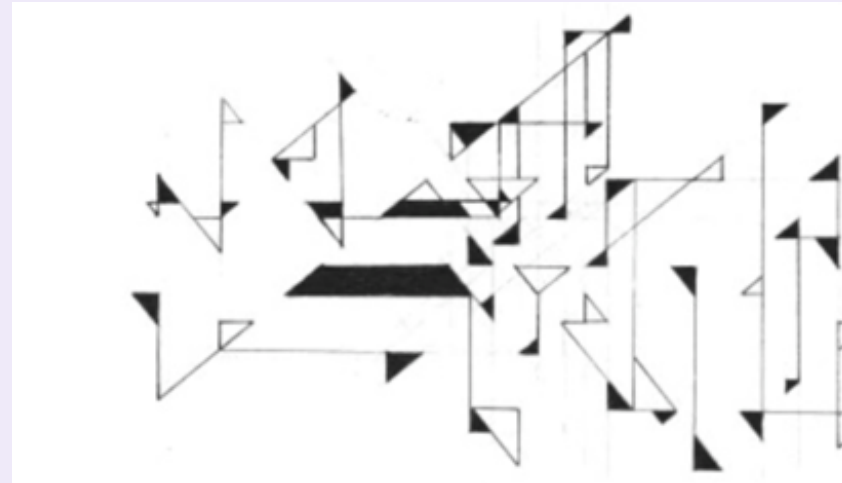


# Music and AI - Examples



## ArInt

- Too complex for a specific instrument and repertoire



# Music and AI – Examples

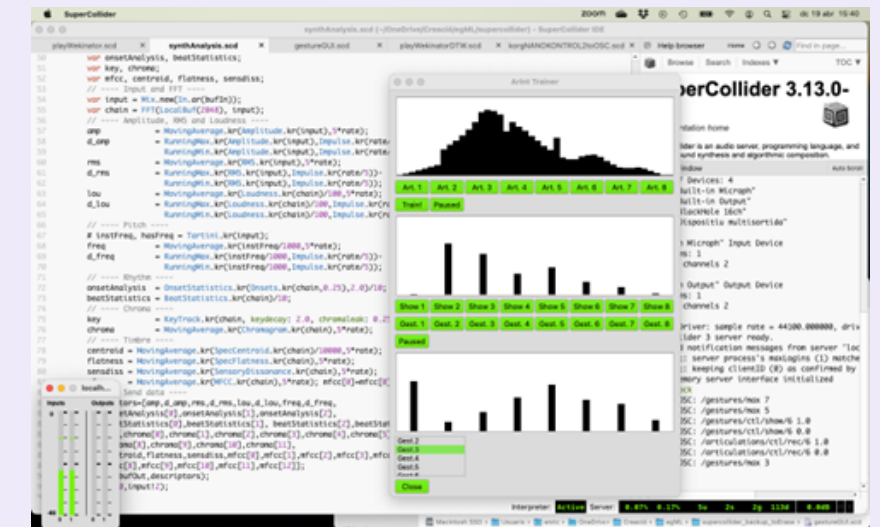


## Arlnt

- Too complex for a specific instrument and repertoire

## NaNAI

- Moderate complexity for any instrument and repertoire. [Video Link here.](#)





# Music and AI – Examples



## Arlnt

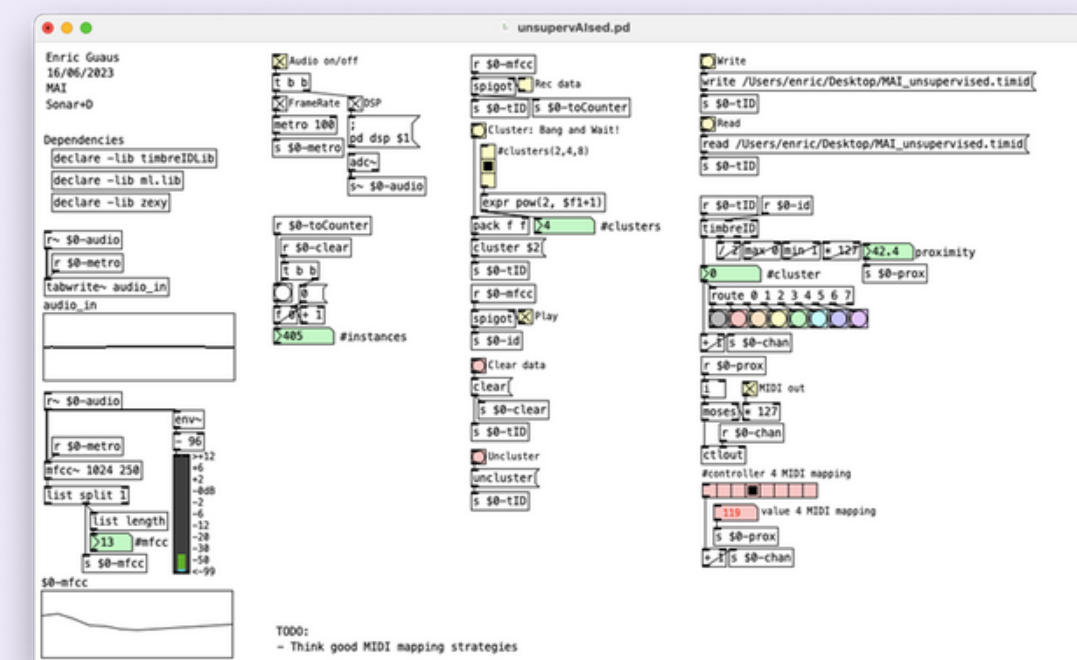
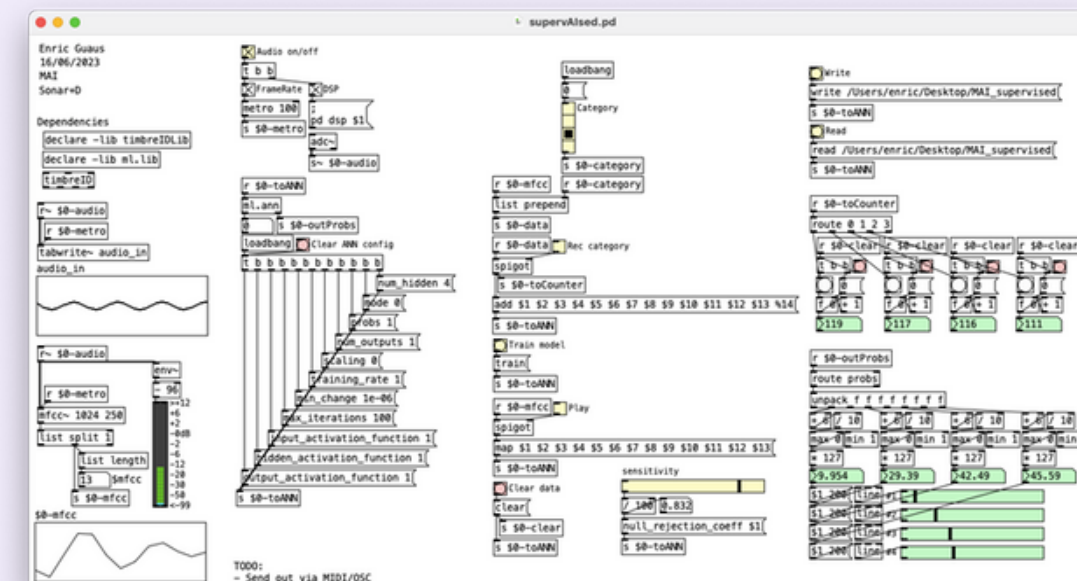
- Too complex for a specific instrument and repertoire

## NaNAI

- Moderate complexity for any instrument and repertoire. [Video Link here.](#)

## MAI

- Easy complexity for any instrument and repertoire
- [Video Link here](#)





# Local conclusions



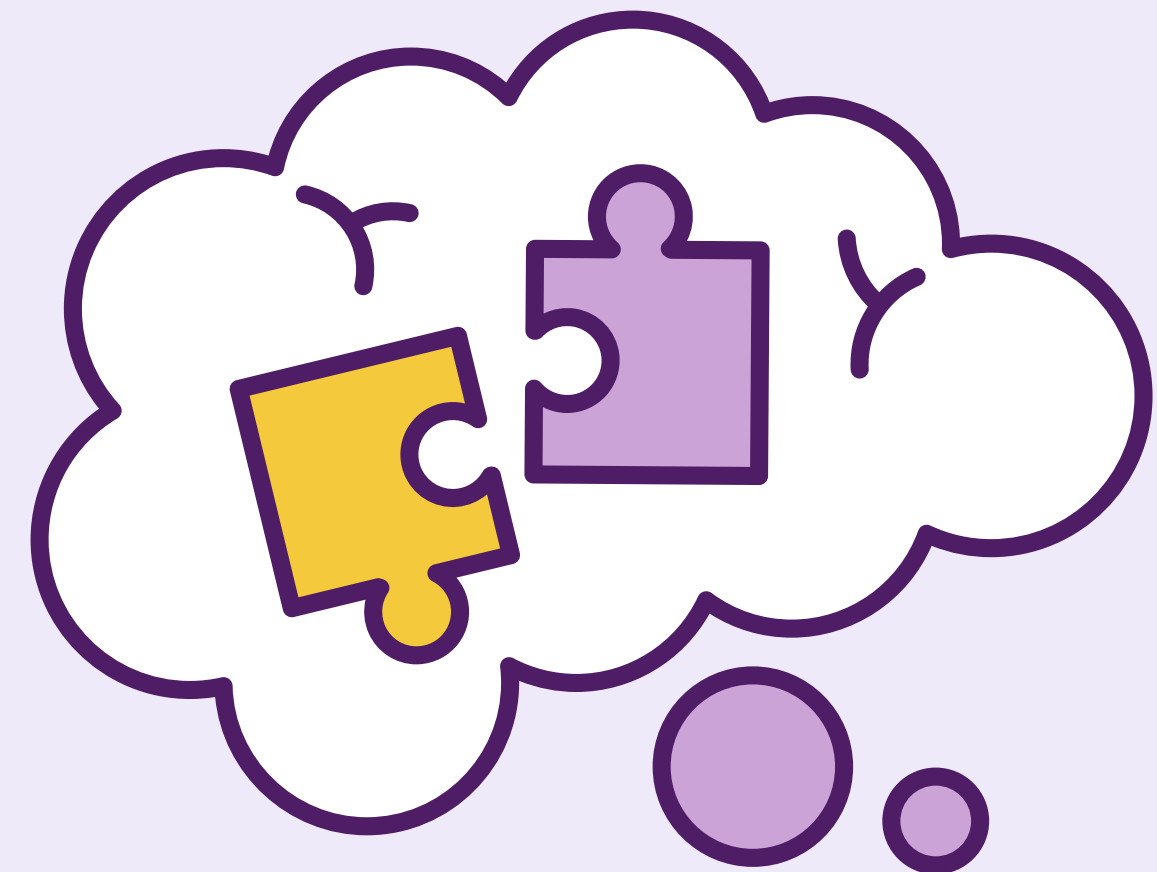
These projects / benchmarks are the basis for exploration, not a final product /piece /instrument/ technique by itself.

In our institutions, we need to provide spaces for creating music

- Seminar, practices, workshop, Erasmus...
- Not for developing technologies

## Key points

- On the stage
- Co-create
- Provide the right environment





# Digital audiences

Sandrine Desmurs  
CEFEDM, France



# Current audience understanding



- Humans want **experiences**
- Humans want **interaction**

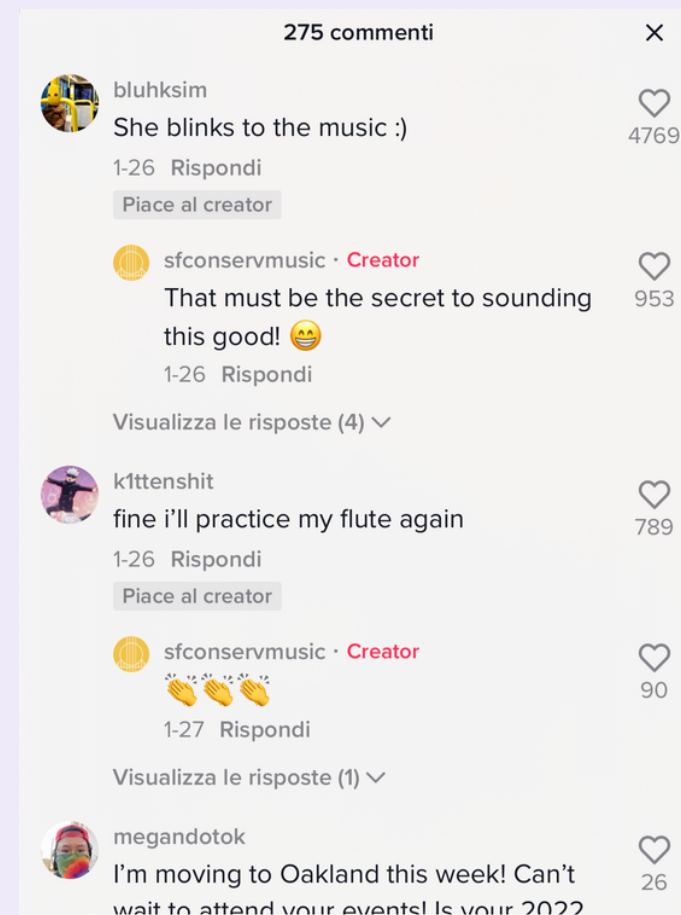
yesterday: a small number of transmitters  
addressed silent audiences

today: numerous transmitters, innumerable  
subjects and an enlarged, responsive audience



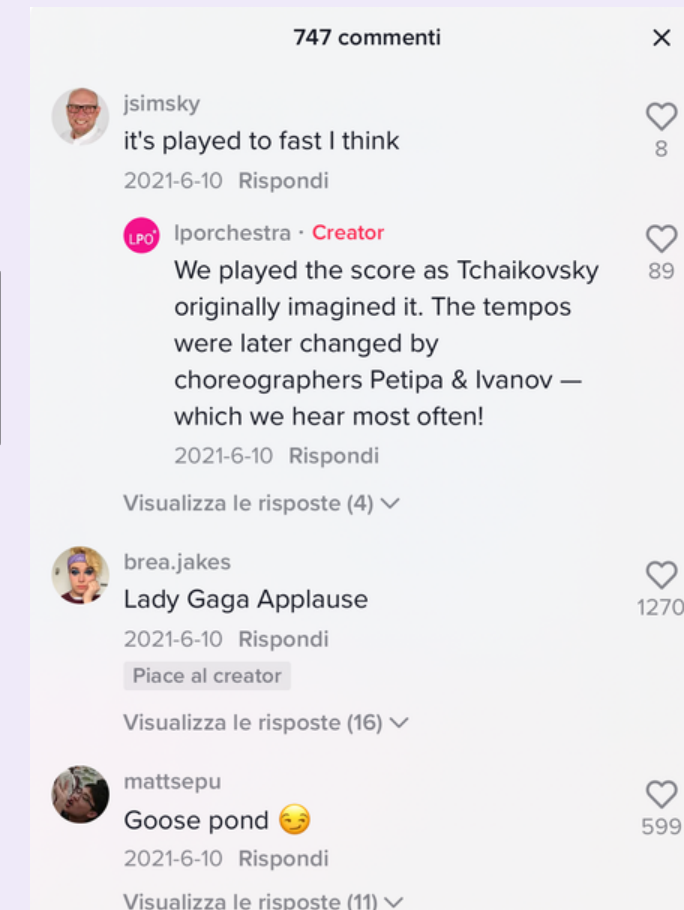
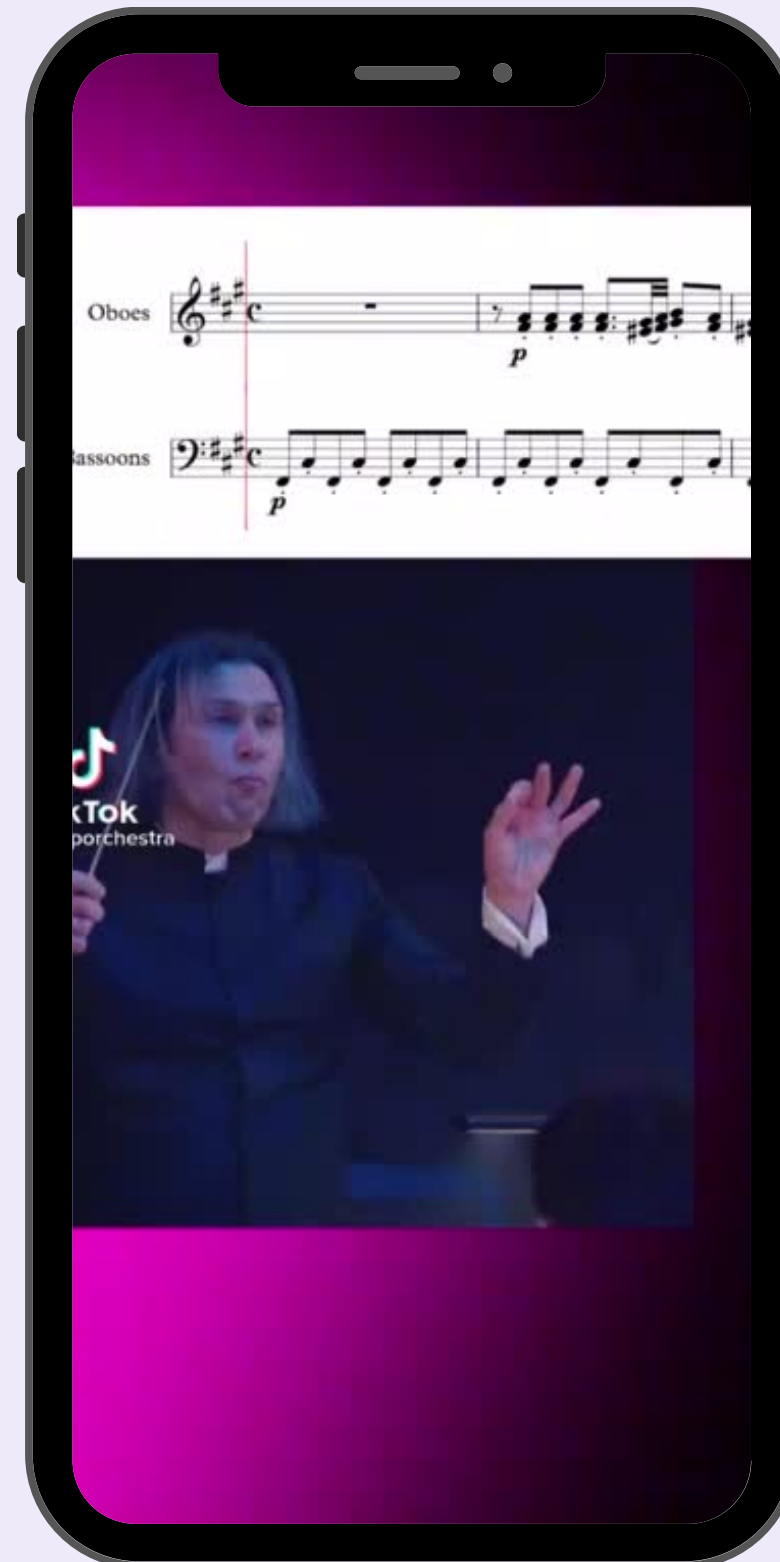
—————> What? Where? Who? How?

# Short-Form: Performance & Educational



👁️ 363k

👍 72k



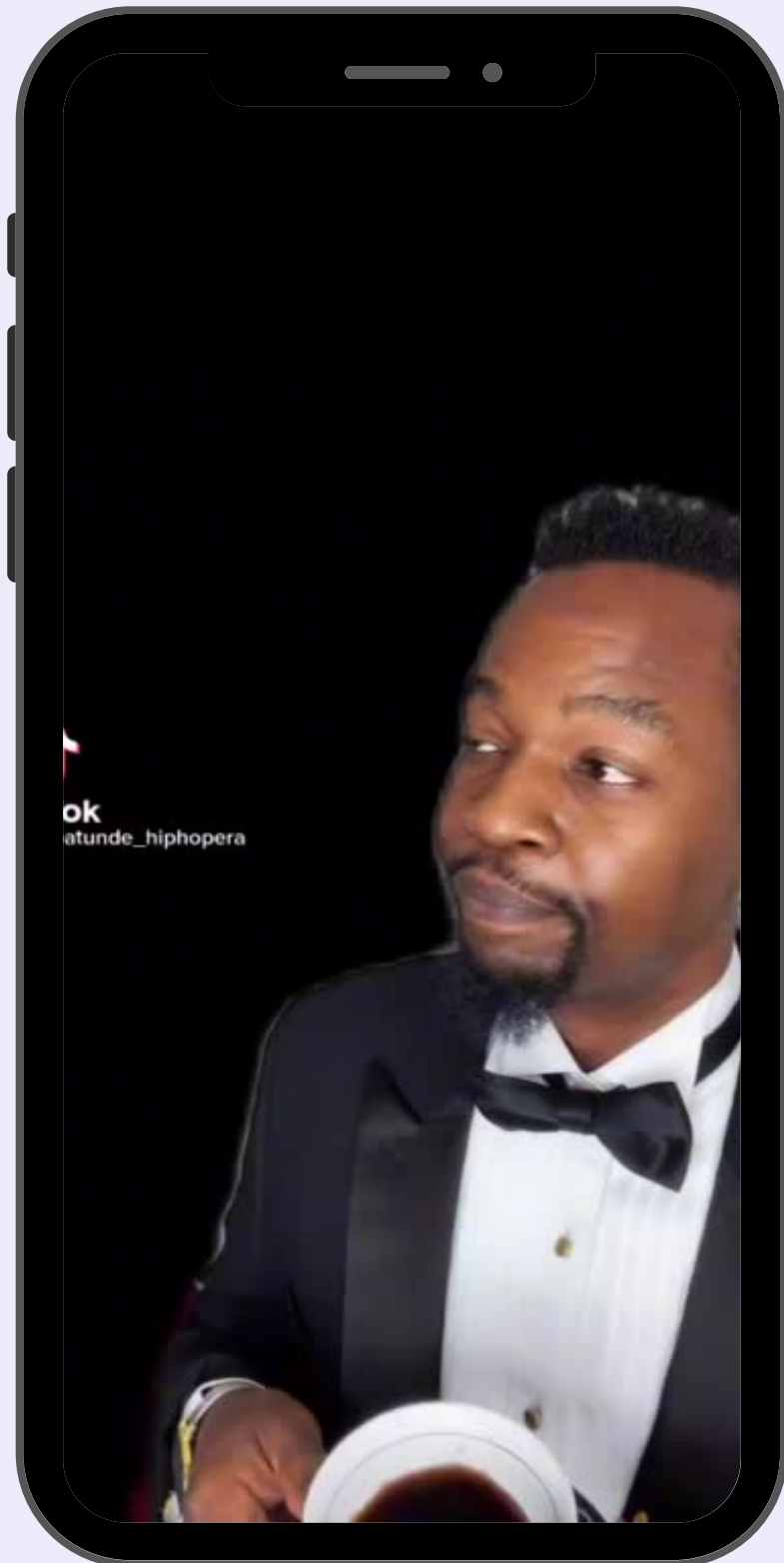
👁️ 580k

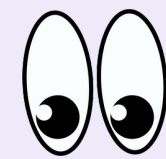

👍 56k

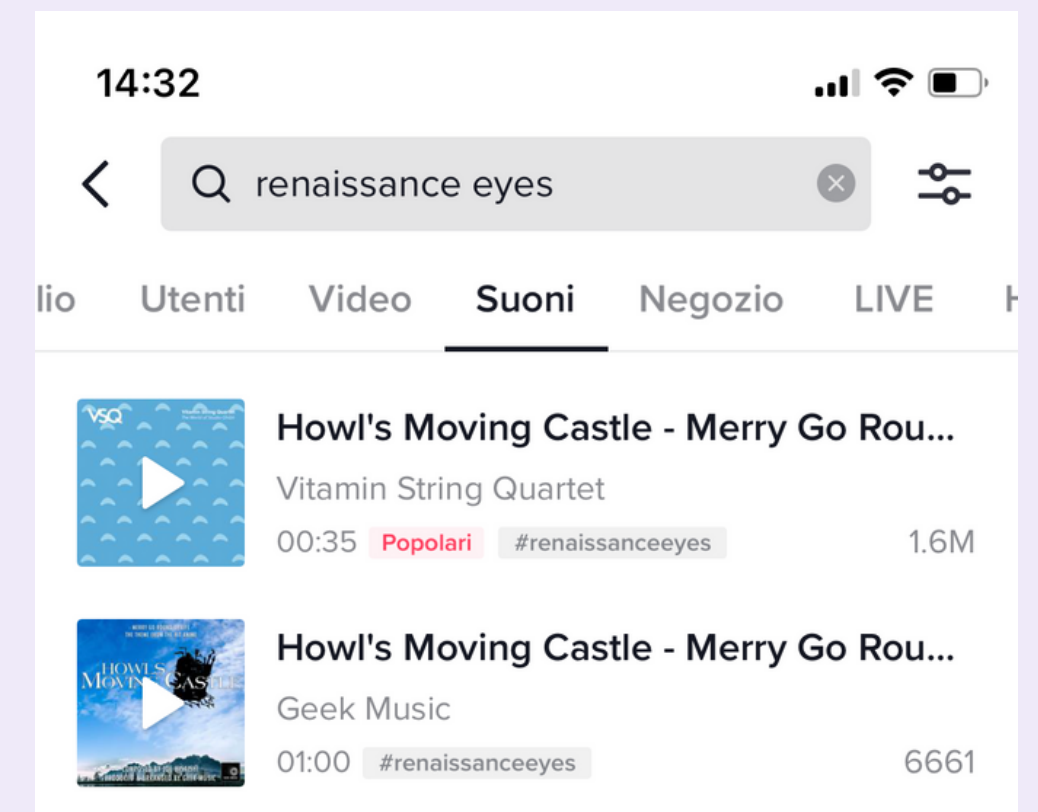
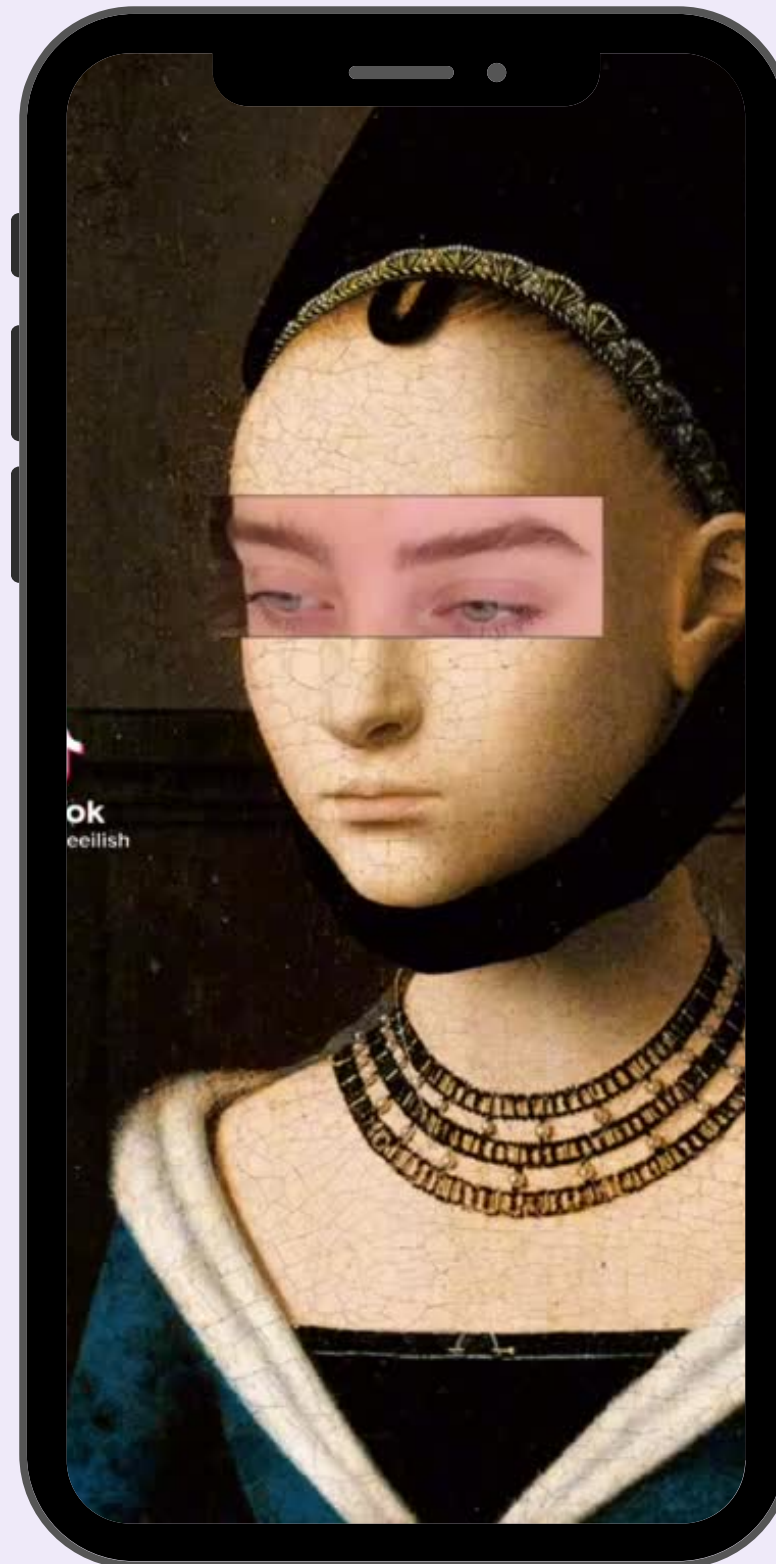




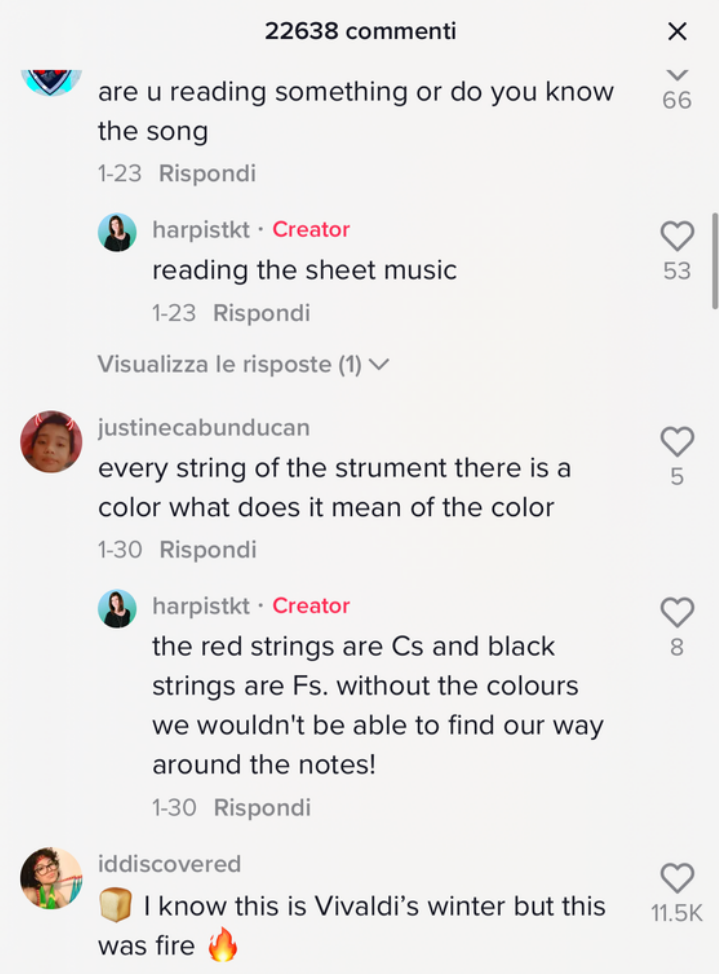
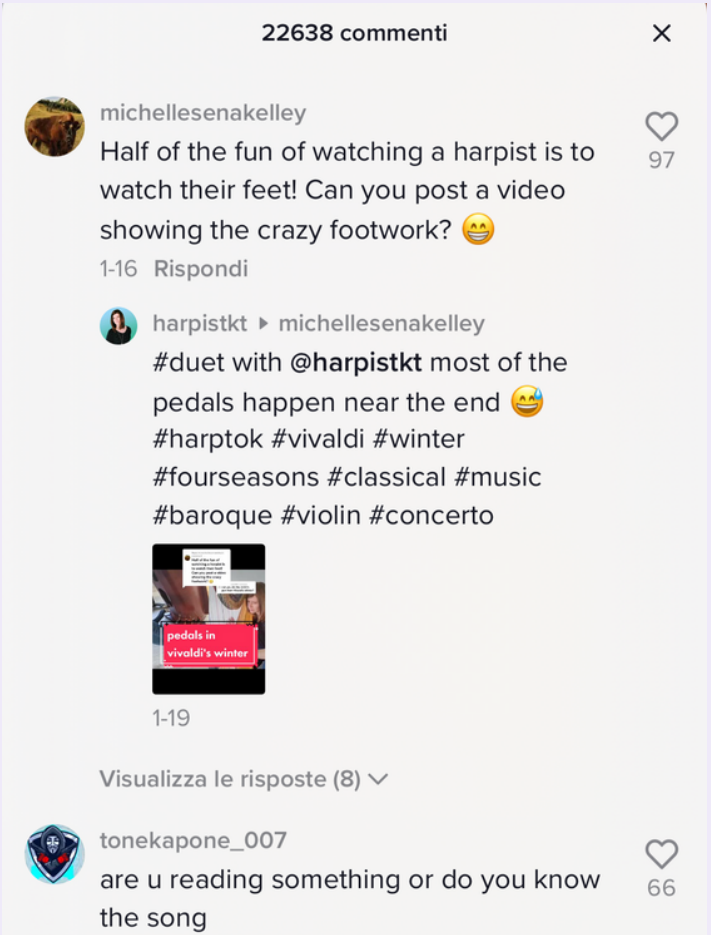
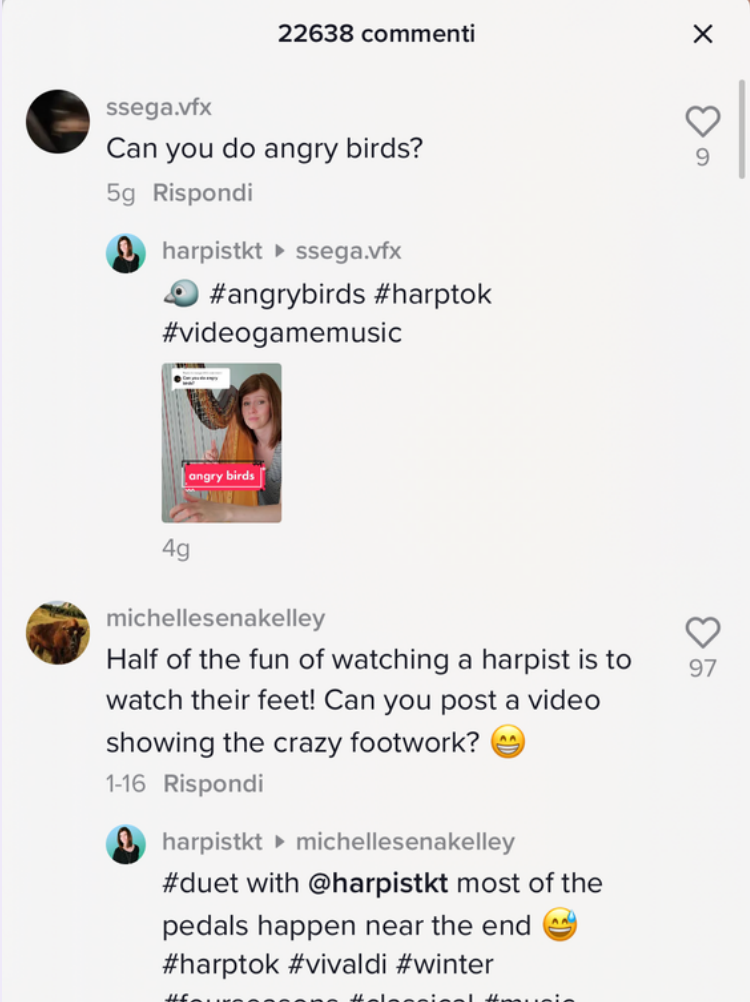
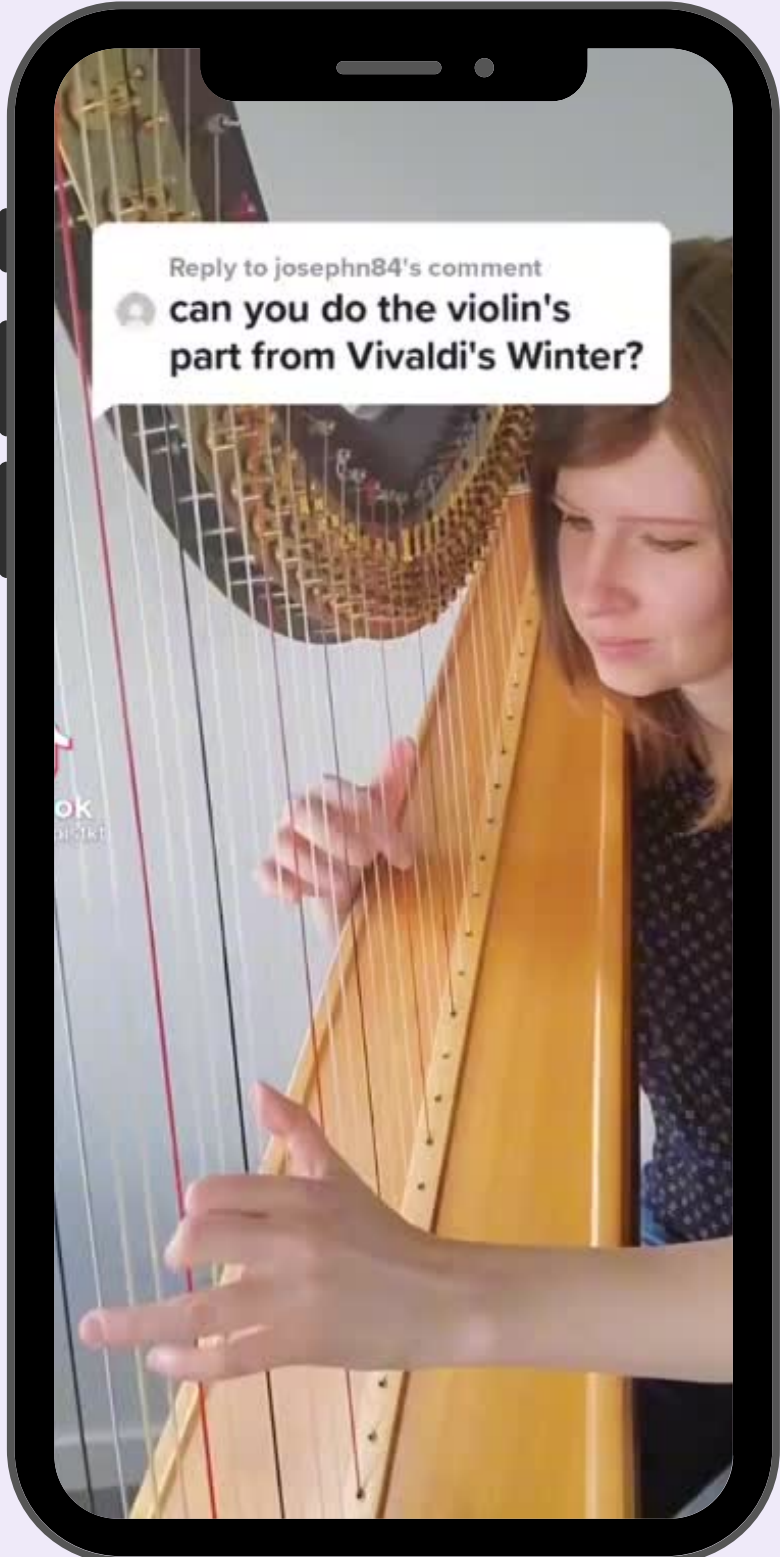
# Short-Form: Trending / Meme



 **3.8m**  
 **1.1m**



# Online community

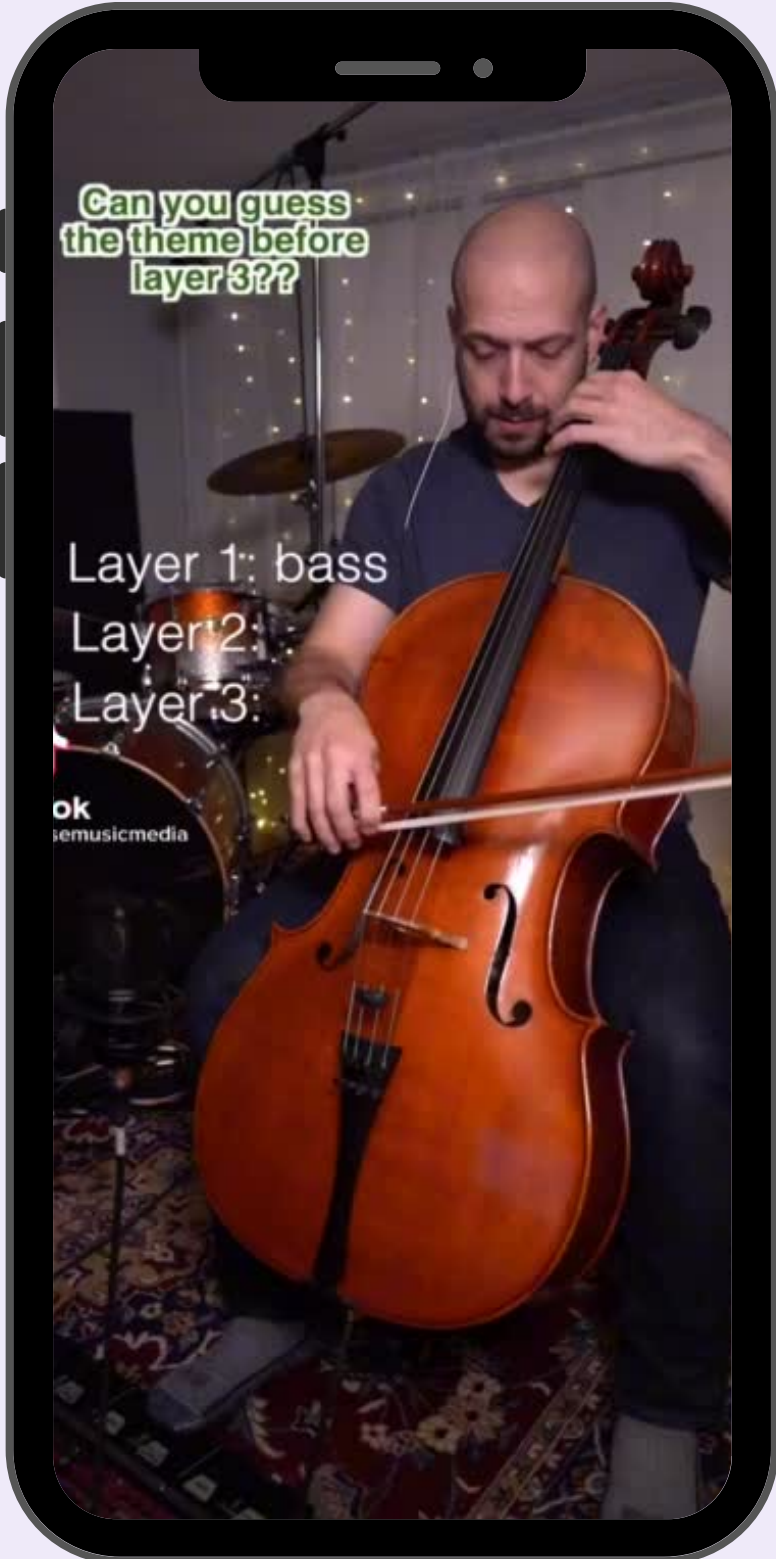


2.6m

515k



# Community-building



- 1392 commenti
- peshir** 2122

Screamed "Shire" to me well before the first layer was complete. Lovely... 🥰

2021-11-20 Rispondi

Piace al creator

Visualizza le risposte (14) ▾
  - whitefoxspace** 1351

IMMEDIATELY recognized the Hobbit theme ain't getting this one by me, nope

2021-11-20 Rispondi

Piace al creator

Visualizza le risposte (24) ▾
  - l3x1con** 551

CONCERNING HOBBITS BABY I'D KNOW THIS ONE ANYWHERE

2021-11-20 Rispondi

Piace al creator
  - kfromsixfeetaway** 319

Layer 1: Oh! We're in the Shire. Layer 2: ... I think? Layer 3: Hehehe 😄 Shire.

👁️ 292k

👍 45k



- 1140 commenti
- baileypickles · Creator** 17

**Fissato** Hey guys! If you liked this, check out my Instagram @bailey\_pickles\_music thank you! 🥰👏

2021-12-28 Rispondi
  - tamaram81** 2559

I feel that your future in music and composing will be bright indeed! Keep doing what you you do....so gifted!

2021-12-1 Rispondi

Piace al creator
  - baileypickles · Creator** 535

Thank you for your support :))

2021-12-1 Rispondi

Visualizza le risposte (3) ▾
  - nick\_wh1tley** 2270

I need an orchestra behind this and I could fall asleep to this

2021-12-1 Rispondi

Piace al creator

👁️ 292k

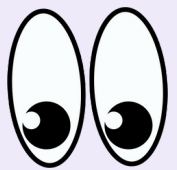
👍 74k



# Long form video



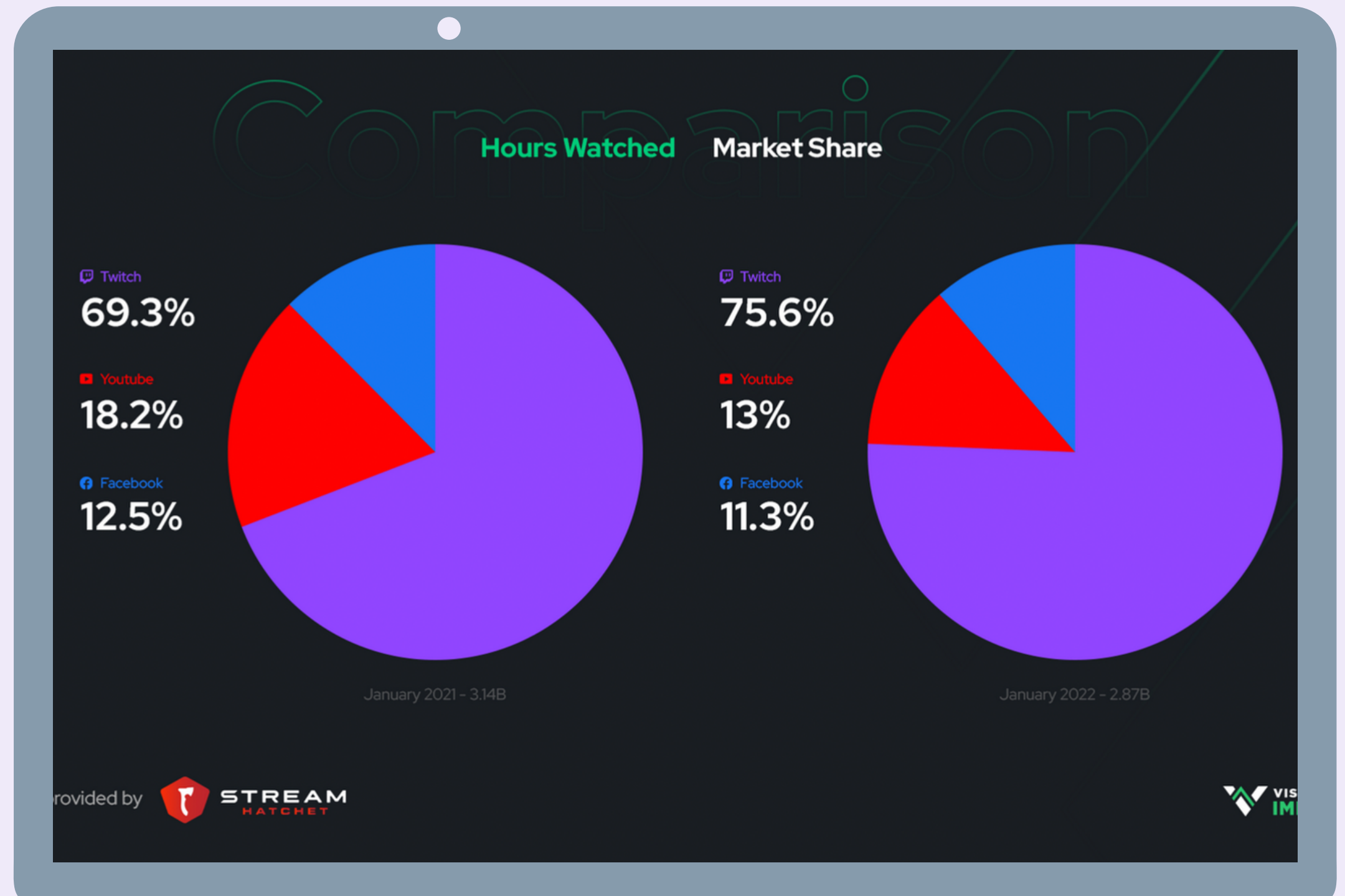
**32% in 2y**



**95m**



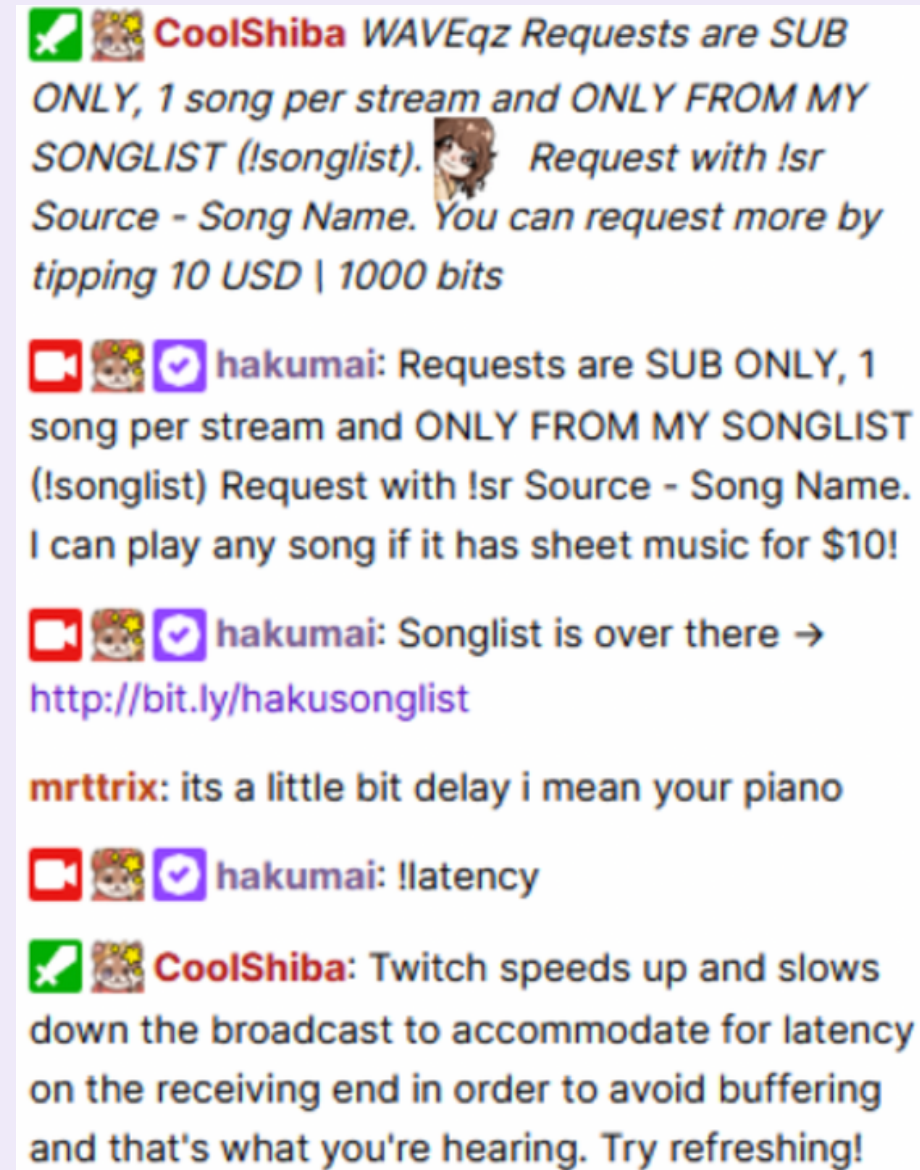
**31m**

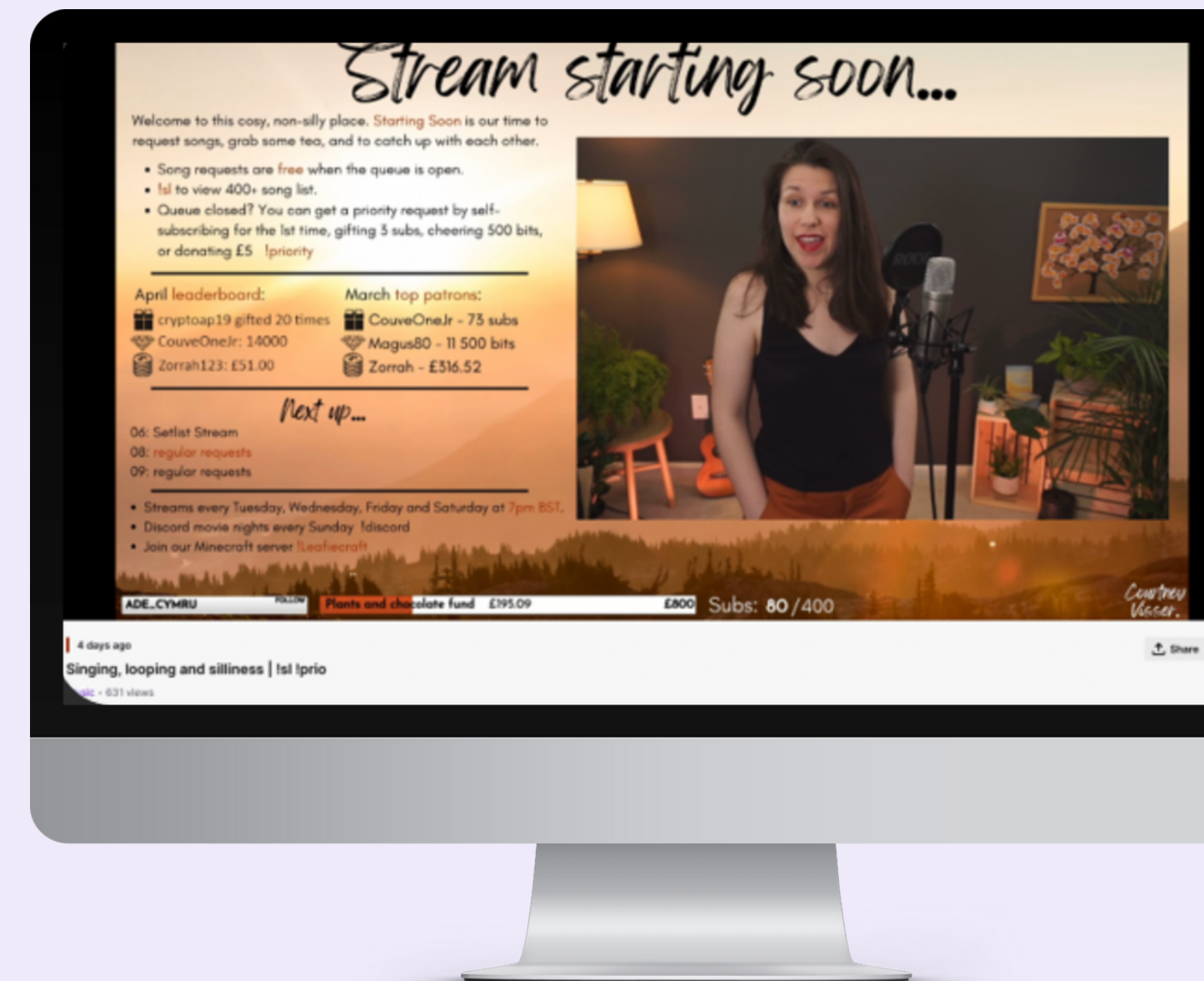
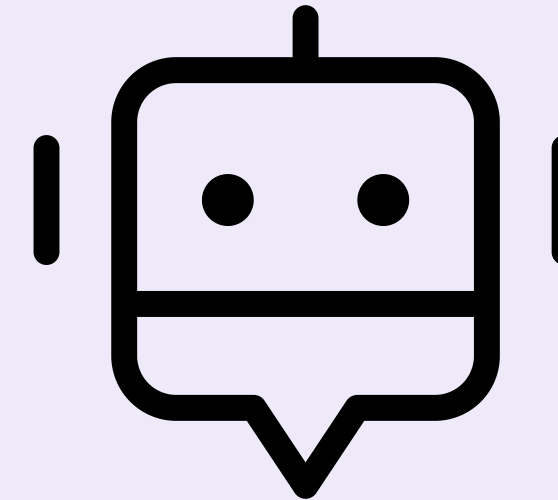




# Building relationships

- Chat function - automation
- Individual connection
- UX
- Raids
- Audience invest time in the creator
- Audience want to support!

A screenshot of a Twitch chat window showing several messages. The first message is from user 'CoolShiba' with a green checkmark icon, stating: 'WAVEqz Requests are SUB ONLY, 1 song per stream and ONLY FROM MY SONGLIST (Isonglist). Request with !sr Source - Song Name. You can request more by tipping 10 USD | 1000 bits'. The second message is from 'hakumai' with a Twitch icon, saying: 'Requests are SUB ONLY, 1 song per stream and ONLY FROM MY SONGLIST (Isonglist) Request with !sr Source - Song Name. I can play any song if it has sheet music for \$10!'. The third message is also from 'hakumai', saying: 'Songlist is over there -> http://bit.ly/hakusonglist'. The fourth message is from 'mrttrix', saying: 'its a little bit delay i mean your piano'. The fifth message is from 'hakumai', saying: '!latency'. The sixth message is from 'CoolShiba' with a green checkmark icon, saying: 'Twitch speeds up and slows down the broadcast to accommodate for latency on the receiving end in order to avoid buffering and that's what you're hearing. Try refreshing!'.



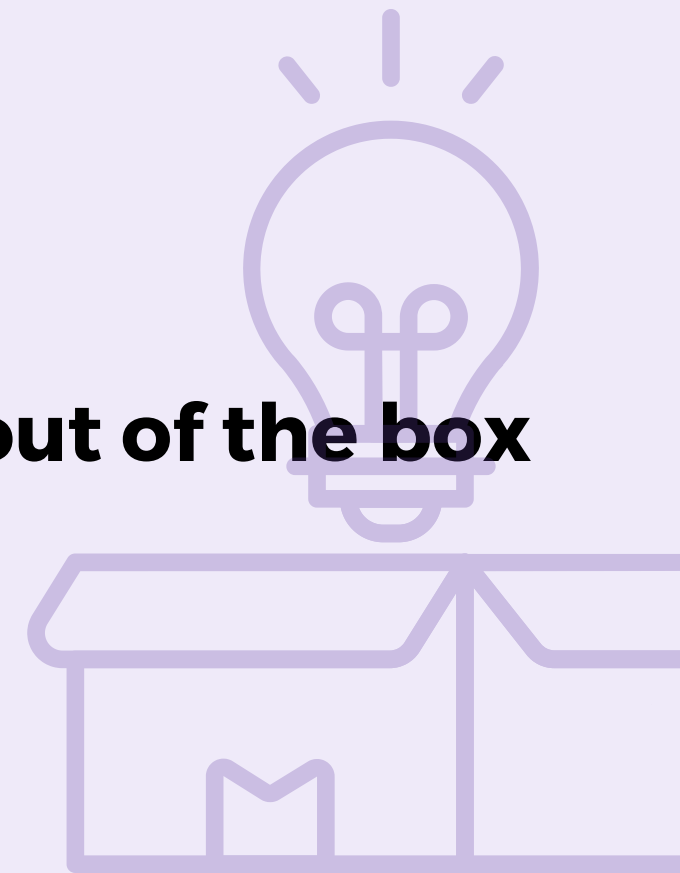


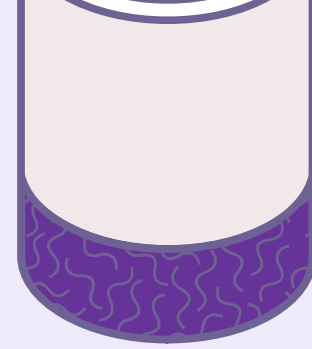
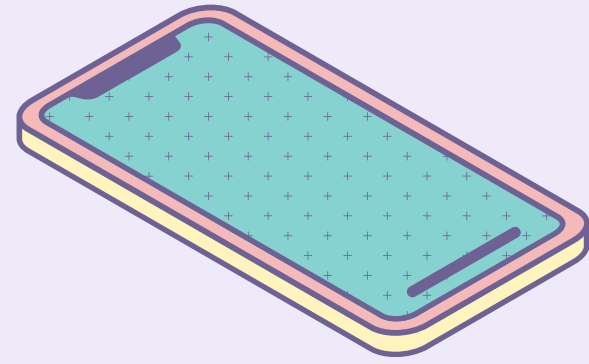
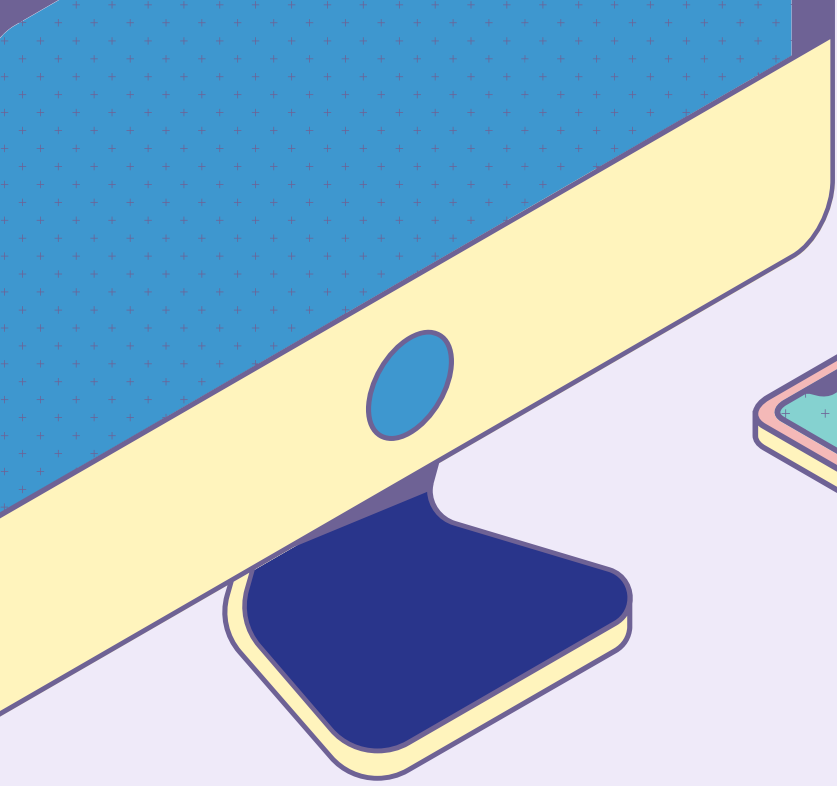


# Takeaways



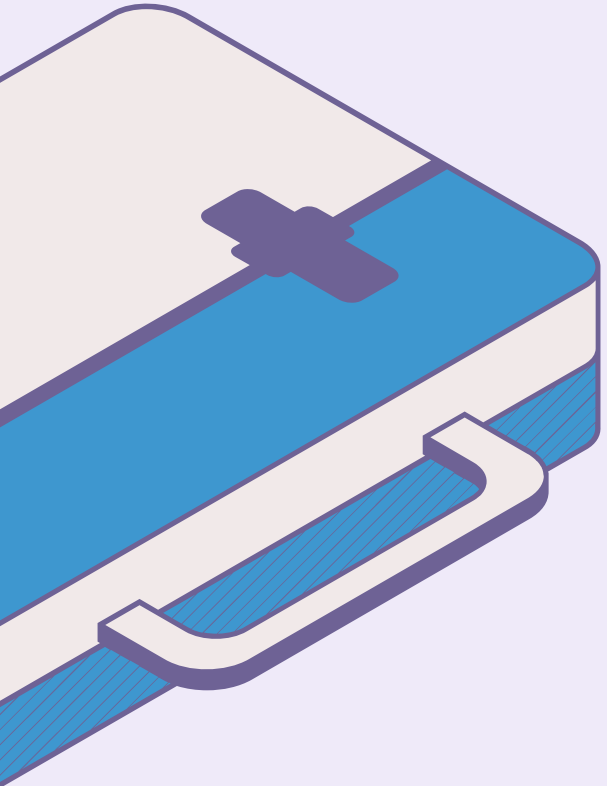
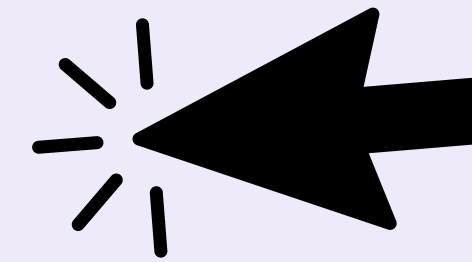
- Long and short form
- Arts and cultural content has a place.
- Build interaction and community with the audience
- User led
- Be authentic
- **Offline concerts - do something out of the box to create traction online!**



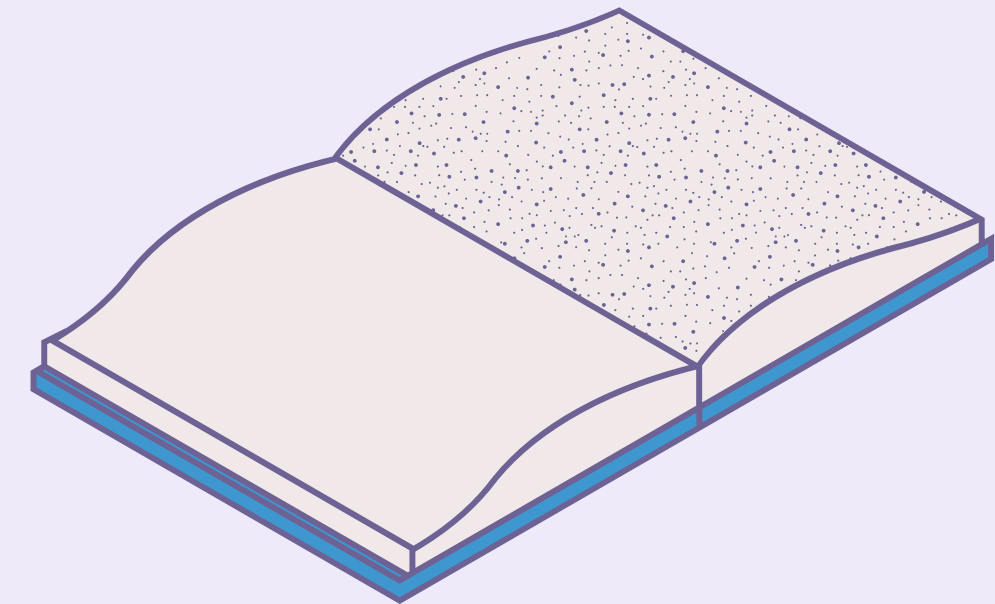


# MIRO BOARD

[CLICK HERE](#)



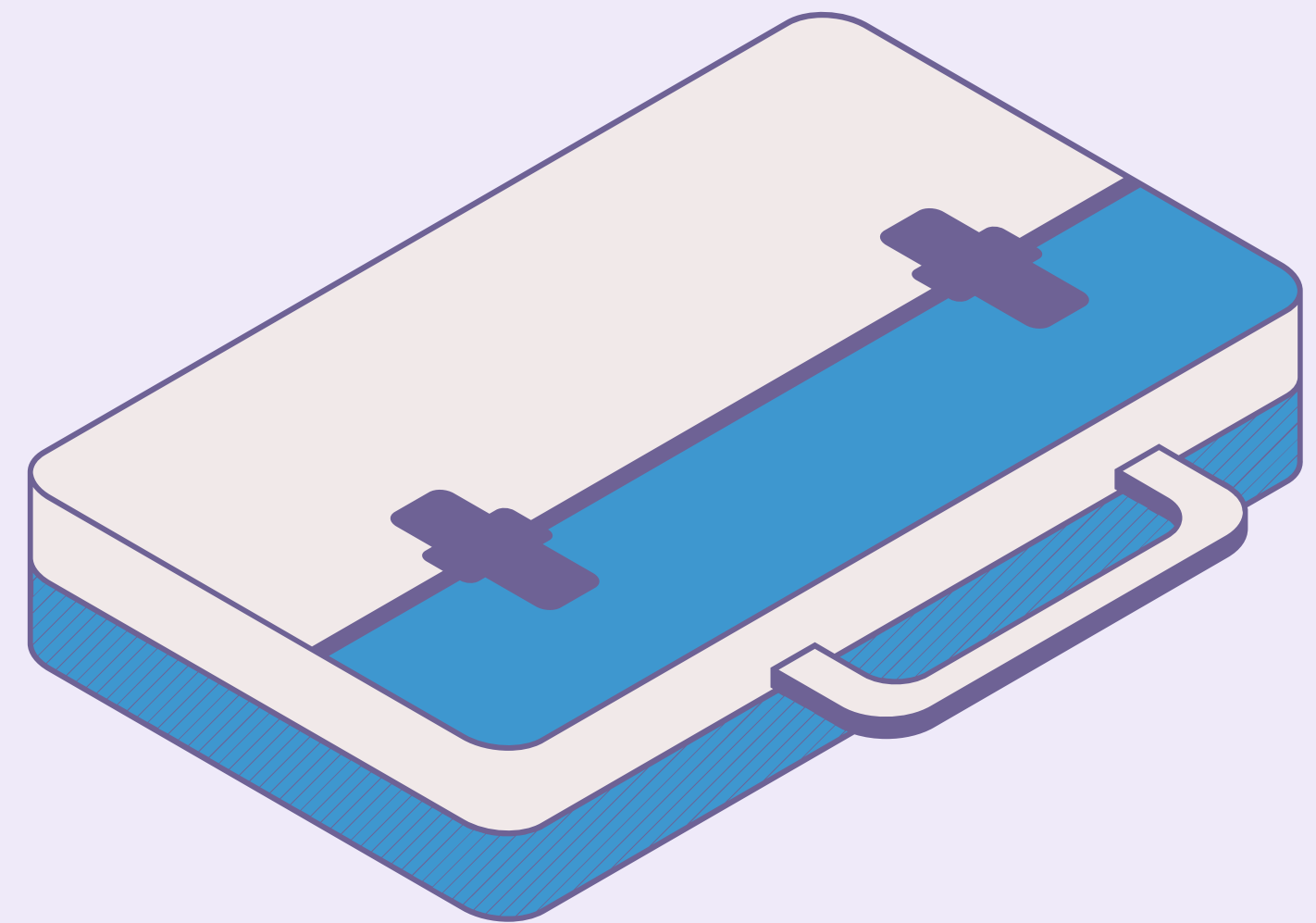
**PW: AECIRC2023**





# Digital skills for musicians

Håkon Kvidal  
Norwegian Academy of Music,  
Norway











A string quartet consisting of two violins, two violas, and two cellos is performing on a stage. The musicians are dressed in dark formal attire. The stage is set with a black backdrop and several music stands. In the foreground, a camera operator is visible, silhouetted against the stage lights, capturing the performance. The entire scene is overlaid with a semi-transparent purple filter. The text "Most music today is experienced through media" is centered over the image in a white, sans-serif font.

Most music today is  
experienced through media

MUSIC SCHOOL  
LUCAS M. ARNEY  
Nurturing  
excellence  
in the  
musicians  
of tomorrow





# The Medium is the Message

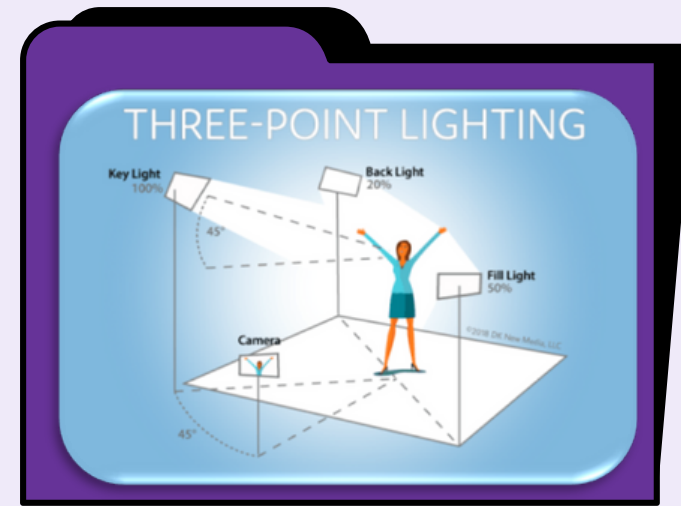
Marshall McLuhan



Convey Artistic Ideas through Media



Picture Composition



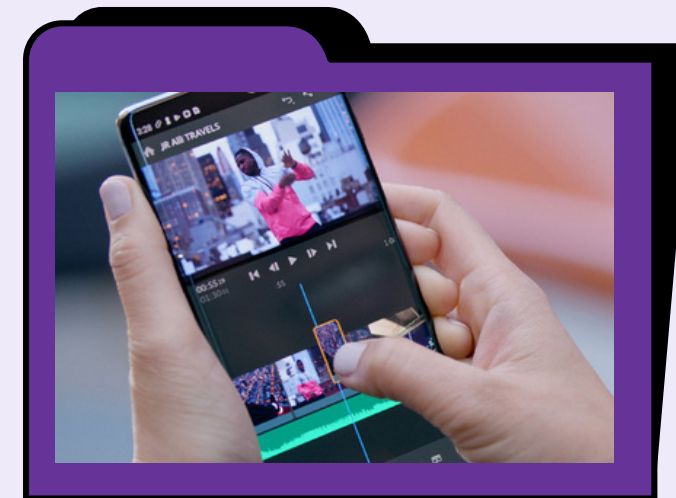
Three Point Lighting



Stereo Microphone Tech



Audio Interface



Video-Audio Recording/Editing App



File Formats

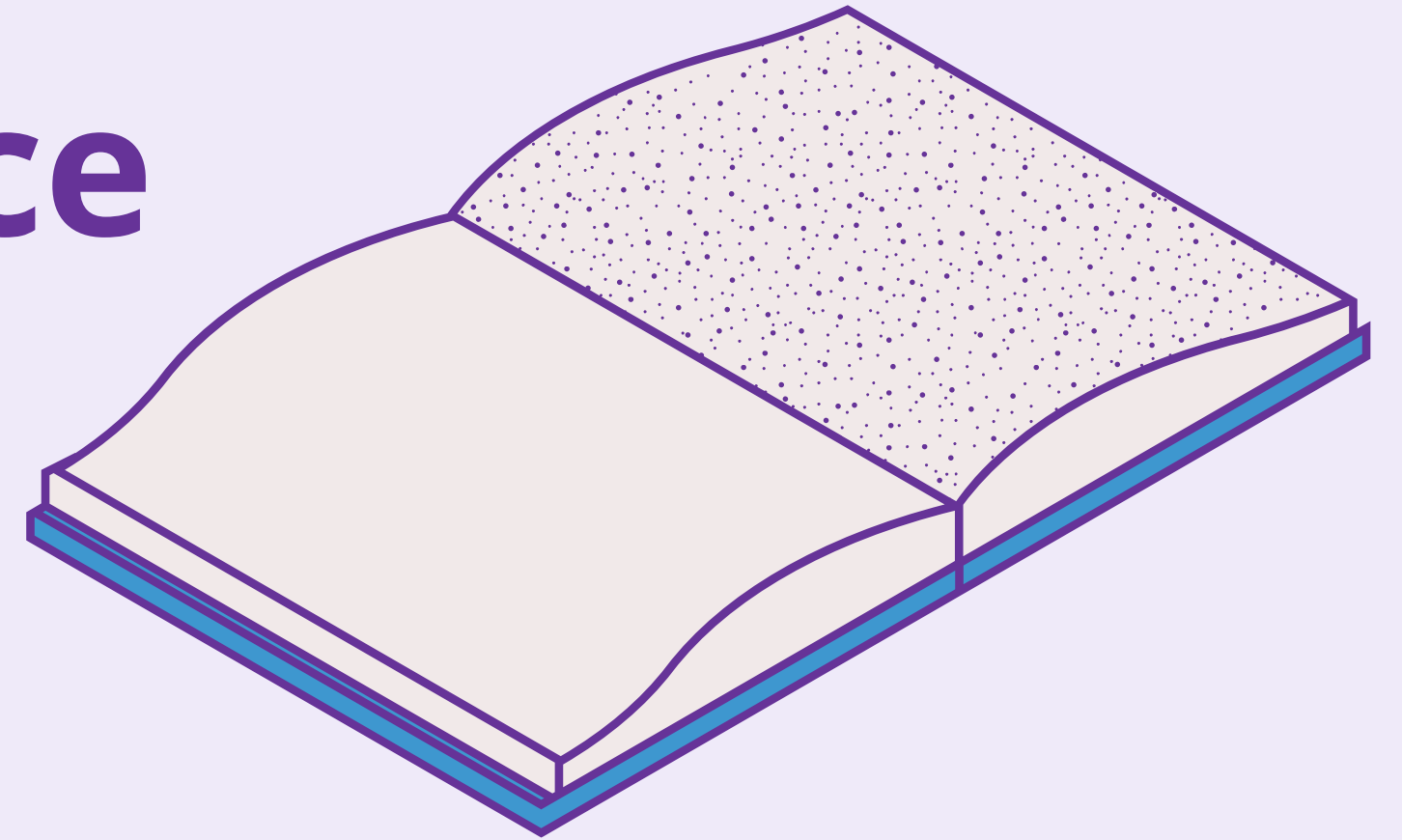


Copyright

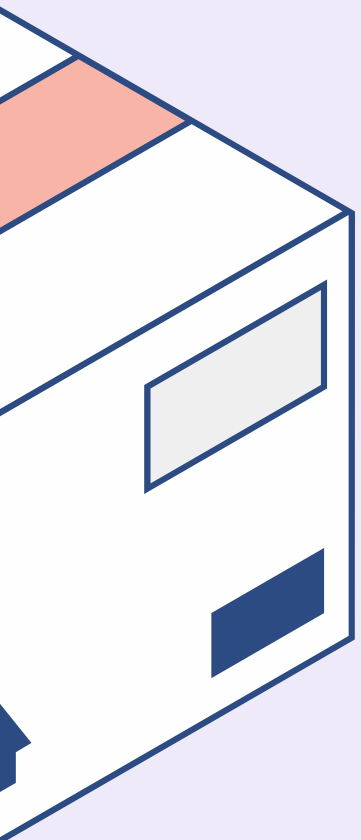
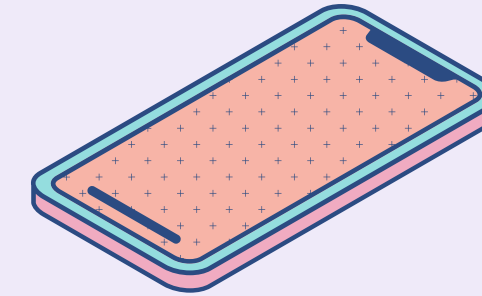
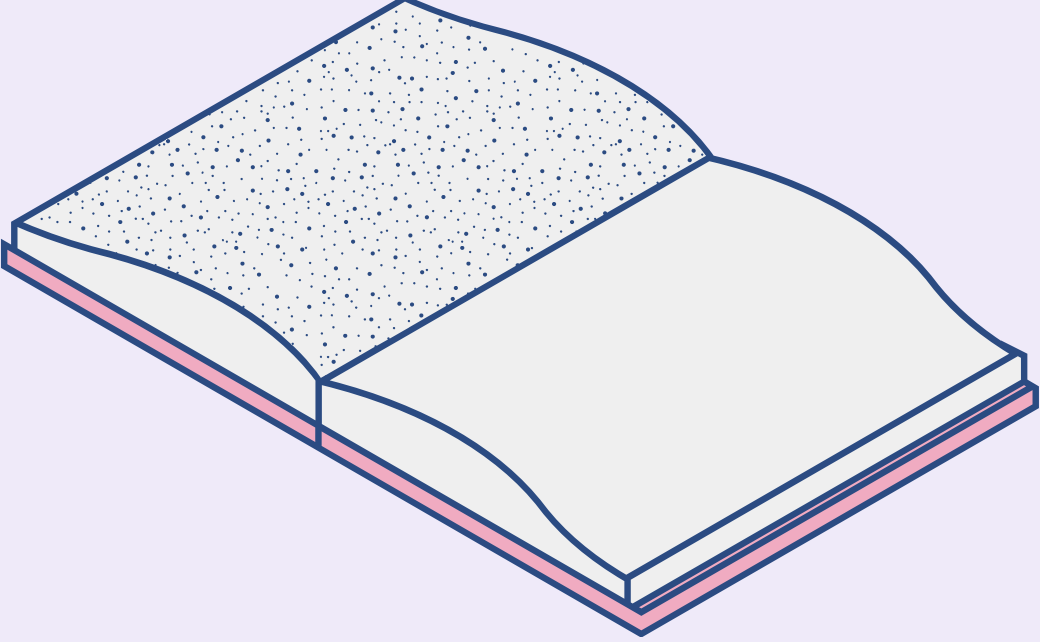
# Encouraging the development of Digital Skills and Culture in Conservatoire practice



**Thom Gilbert**  
**Digital Learning Manager**  
**Royal College of Music**  
**United Kingdom**







# Building Digital Skills through Assessment Design and Adapting existing Practices

Developing Digital Skills without teaching  
them explicitly or compromising core  
learning objectives

# Assessing performance via video submission



Presentation  
Due: multiple due dates - L5 Musician in the Digital Age 2122

9/10 Graded 66.78 / 100 (67%) Average 1/10

David Afzelius

approaching technology	Excellent
Capacity for self-reflection and critique	Very Good
Application to own practice	Excellent

Assignment comments

David (75)

Understanding of the technology.

This project shows an excellent understanding of the technologies covered in the course and of the different ways video production is used in both classical and pop genres. A Wide range of technologies are used very effectively in the production of the project, both hardware and software. The approach to the use of the technology is very well informed by the issues addressed in the course.

Some editing or scripting might have helped to reduce the length of the vlog entries, which could have been more concise, but the project video is very well produced and presented.

Creativity in approaching technology.

0:00 / 31:17



# Embracing online rehearsal (and its issues)





# Project Based Learning

## ... High Freedom, High Stakes



sway.office.com/n6ZuENVpnsLJF7eq?ref=Link

Facebook Spotify Web Playe... YouTube Rehearsals - Drop... Underhound Song... Plex Work at home co... Crowgrounds - Sy...

Share

## Musician in the Digital Age Project - Leo Glenister

My project is based around the creation of teaching materials - a series of short video guides on Horn audition excerpts from standard orchestral repertoire. All orchestral auditions require candidates to play set excerpts of which many are the same across the globe. In these videos I will briefly talk about the context of the excerpt, details to note/ common mistakes, and how I would practice them, before playing the excerpt with the sheet music shown onscreen. The future of musical education is a hybrid approach of online and in-person teaching and I would like to be the first to create a set of Horn videos for my students to view ahead of one-to-one lessons. In the future I aim to also create a paid online platform to make these videos available to musicians worldwide.

Some of the benefits I envisage for my students and myself from this project are below:

### Students

- By viewing these videos ahead of in-person one-to-one lessons, students can not only hear how excerpts are played, but also gain an understanding of the musical and technical challenges involved. Students can also see how I annotate the sheet music (displayed on screen) to best prepare to play each excerpt in an audition setting.
- While students will still be encouraged to listen to a range of recordings of the works from



**Openness to  
different  
submission  
formats**

**what knowledge  
should be  
demonstrated,  
not how.**

Video



Essay



Web Page

Journal

Podcast



# The Challenges of Culture and Practicalities



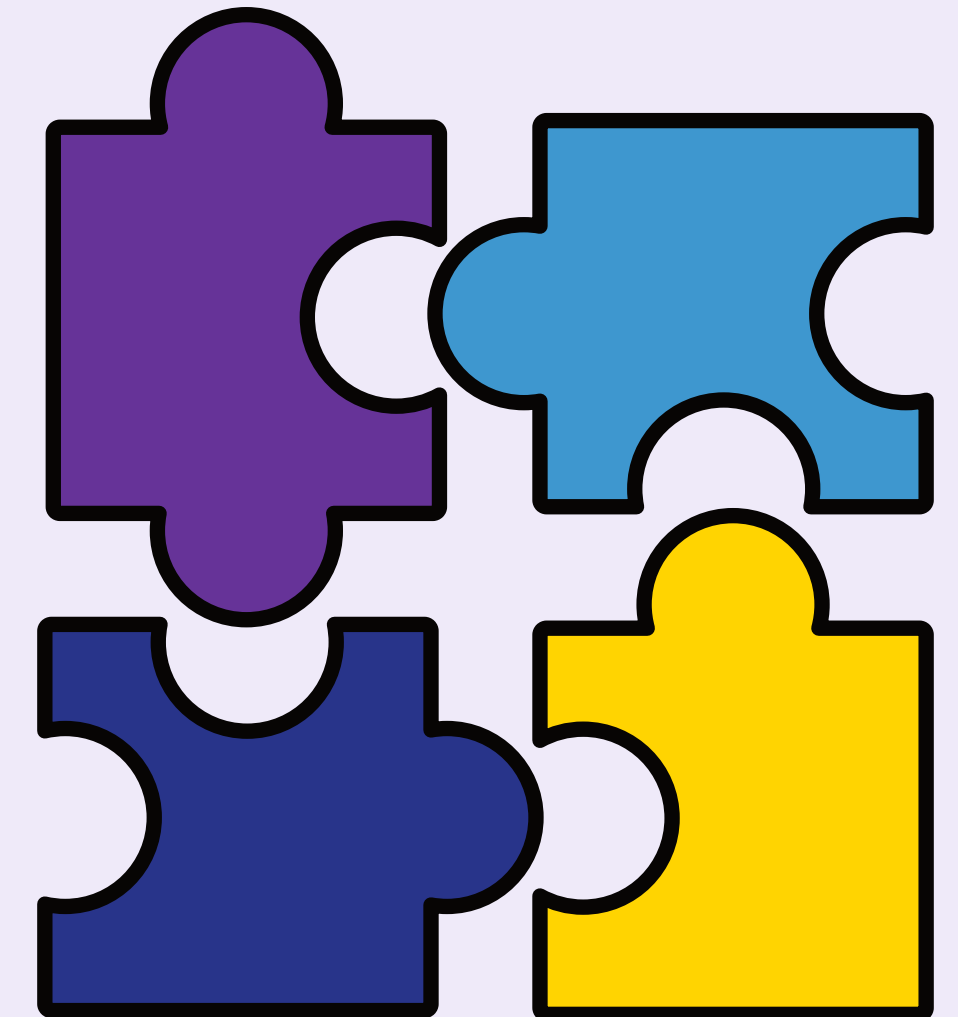
## **Cultural Issues**

Time and Available Resources

Freedom of practice (and Strength of Opinion),

Isolation, Fear of judgement, Privacy of the 1:1 model,

Parity of Experience and Accessibility of resources





# Suggestions for addressing these issues



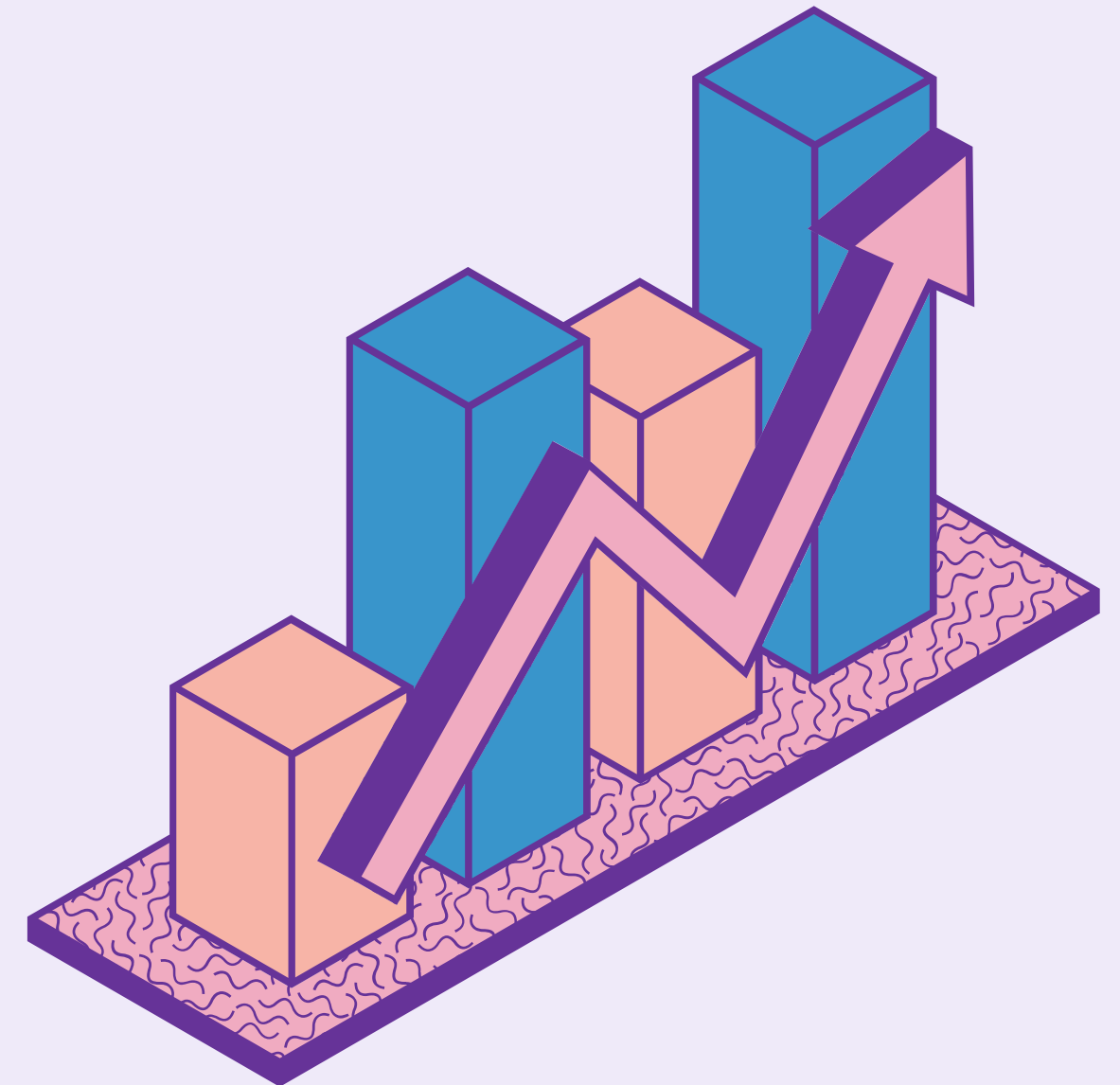
**Encourage sharing of practice and openness, wherever possible**

Lead by example

Set the vision and expectations and provide meaningful support to achieve them

Consistency and commitment

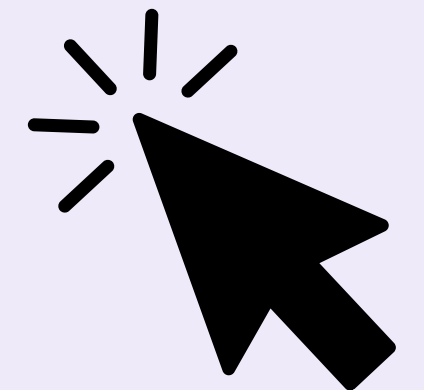
Use the student voice





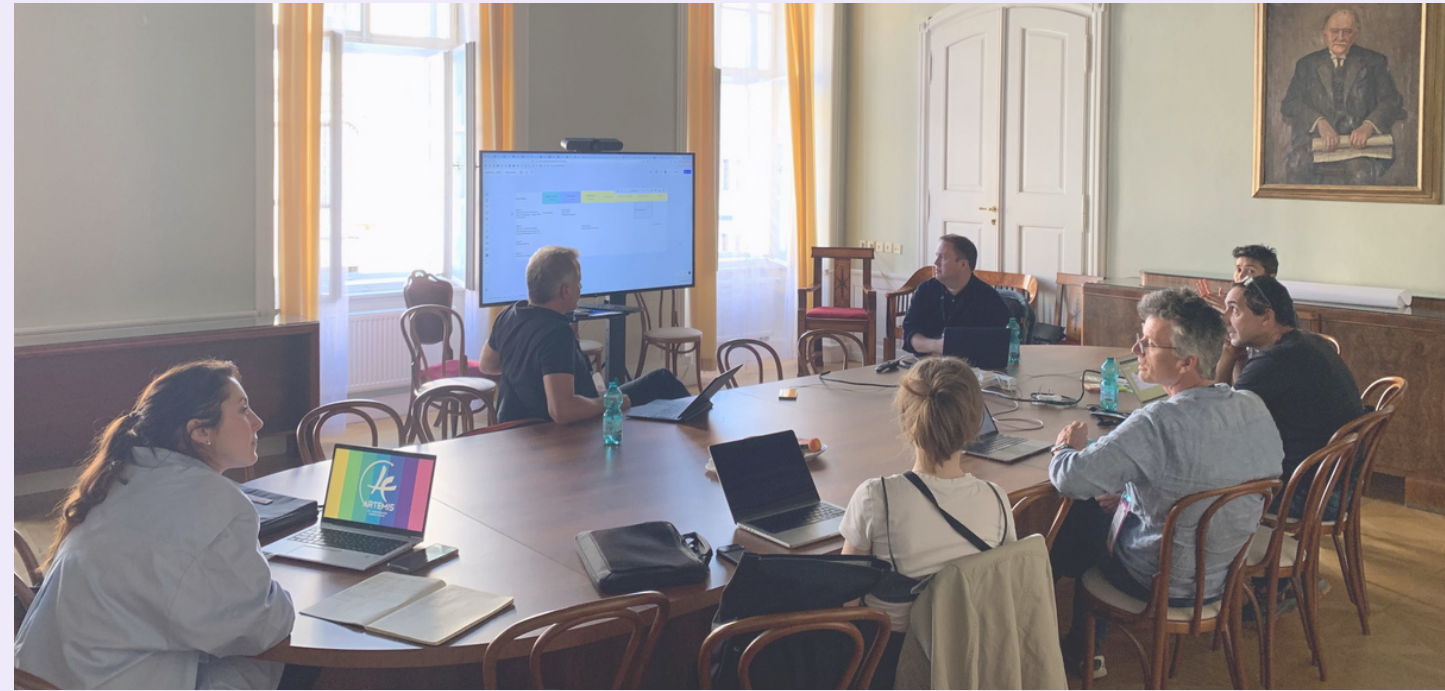
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**Thank you for your attention**

