MUSIC IN THE DIGITAL AGE

INTERNATIONAL CONFERENCE | DIGITAL TECHNOLOGIES AND ARTISTS' RIGHTS

ATHENS, OCTOBER 22-24, STAVROS NIARCHOS FOUNDATION CULTURAL CENTER

KEYNOTES

Music in the Digital Age: Streaming & Artificial Intelligence has been a three-day international forum organized by APOLLON (Greek CMO for musicians' neighboring rights) and FIM (International Federation of Musicians). Against the backdrop of **AI-generated content and the dominance of streaming platforms**, the conference examined how **revenue models, legal frameworks and artistic labor are being reshaped** in a digital economy that prioritizes scale over sustainability.

Bringing together artists, journalists, industry professionals, legal experts, academics, policy makers and technologists, the event focused on three core questions:

- How to build **sustainable and equitable compensation** models in a saturated streaming market?
- How to protect creators' rights when **AI is trained on and competes with their work?**
- What role should legislation play in **securing ethical AI and fairer digital markets** without stifling innovation?

Dr. Anastasia Georgaki (Athens University) uses powerful mythological metaphors to map the existential risks of AI in music. From the "Chimeras" (hybrid deepfakes), the stolen "Golden Apples of the Hesperides" (intellectual property) to "Plato's Cave" (the shadow world of synthetic creativity), she argues that we are shifting from an era of "prominent artists" to one of "prompt artists."

KEYNOTES | ANASTASIA GEORGAKI

GenAI: Opportunities & Benefits for Music Creators

Athens, October 23, 2025
Stavros Niarchos Foundation Cultural Center

Ladies and Gentlemen

First of all, as a former head of the music department at the National and Kapodistrian University of Athens for six years, I would like to thank Dinnos Georgountzos and Vasilis Ginos for this kind invitation to this special event. Thank you for inviting me. I also thank my former student, Yiorgos Mizalis, who works with CMO EDEM and who introduced me to these music industry conferences. My name is Anastasia Georgaki, and I am a professor of music technology. In our department, we engage with many different topics that also concern the music industry, albeit from a different perspective.

We teach a course on the music industry in the second semester, and we always begin with Adorno. I mention this because here, we speak a lot about money, and we will explore what the music industry is. For the past 100 years, the music industry has been primarily focused on audio. We have the history of phonography, from the first phonograph to the gramophone, the magnetophon, the compact disc, and then to the cloud. Networking, distribution, and broadcasting are all facets of the music industry. Live performances are also part of the music industry. However, we now face an enemy or a friend: AI.

Now, the music industry itself has begun to function as a creator and co-creator. Until now, the conversation was always about how to perfect sound. Now, the conversation is shifting to how we can create a perfect song. Today, I will borrow some stories from ancient Greek mythology to illustrate where we are heading, what the ethical dilemmas are, and how we can address the rise of AI. As a music technology researcher, I often go to conferences like the International Computer Music Conference and the Sound and Music Computing conference. There is also ISMIR, and in ISMIR, the scientists developing AI-generated music, are now focusing on the expressivity of the singing voice and of instruments for AI-generated music.

The synopsis is that the music industry in the era of digital media is no longer just a question of phonographic audio, distribution, and networking, but of GenAI. Everything started in universities and research centers, with the first generative

music being introduced in the United States by Lejaren Hiller, and later in Europe with figures like Xenakis.

What are the domains of application? There are many, but the most prominent are Suno and Udio. Next, I will speak about ethical issues: how we are creating Chimeras of AI-generated music by blending styles, artists, and even human and machine. I will also address how the hidden, precious, and almost divine knowledge of human creation is being stolen every day.

I will start with a reference to Georgina Born and Andrew Barry, concerning music mediation theories and actor-network theory. Nowadays, the concept of mediation in relation to music has a rich history and varied meanings. Its most famous proponent, Theodor Adorno, drew his theory of mediation from a Hegelian interpretation of Marx, filtered through Lukács. Building on Marx's account of the antagonisms constitutive of the social totality, he depicts music as a fractured whole, the locus of a dialectic between history and nature, subject and object, human consciousness, and musical materials. In the future, we will be discussing AI consciousness.

Adorno analyzes mediation by industrial capitalism and the institutions of mass entertainment and concert life. His main concern was with how mediation diagnoses not only the actual condition of music but its potential transformation. Here, we can see the transformation from 2001 to 2020. We could also visualize the amazing transformation of the music industry from 1920 to 2020 with graphics. You can see here that the blue color represents streaming music, while the other is performance.

To provide a brief overview of algorithmic composition, I would like to state that when we speak of generative AI, we inherently link music and mathematics. We teach music and mathematics at universities, starting from Pythagoras and progressing to Mozart's musical dice game. This figure illustrates the evolution of AI generative music. We then speak about Lejaren Hiller and the mid-20th century avant-garde with figures like Xenakis and John Cage, leading to the emergence of computer-based generative music. After these models were developed within the framework of computer music research in universities in the States, Europe, and later Japan, the technology emerged with computer-based generative music in the '60s through the '90s at Stanford University, involving algorithmic and AI-driven generative systems and neural networks. Today, we have generative music in our mobile apps like Endless, Bloom etc. We have Suno and Udio. I am astonished by the

sophistication of this software. We also use generative music extensively at the university in meditation and wellness, video games, virtual and augmented reality, ambient AI soundscapes, live coding, and algoraves.

Here, we can see how generative AI models mimic artists, create new voices, and compose in seconds. We have Suno, Jukebox, and SoMax–which will be presented by Gerard. SoMax has nothing to do with this other commercial software, because it is a creative tool that improvises and orchestrates in real-time, always interacting with a musician. We see that today, we have many singing voice software applications.

In that vein, I conducted research to identify which music genres are most at risk from AI-generated music. You can see here the most popular music genres: hip-hop, pop, and then Latin. You see that the shares for jazz, classical, and other genres are very small. I asked an AI which genre of music is most at risk from AI-generated music, and it responded: lo-fi, chill-pop, ambient, background music, pop, instrumental, hip-hop, and trap beats.

This raises questions about the position of these genres within the music industry. For example, how much do jazz musicians earn from Spotify and other platforms? It is known that their earnings are not proportional to those of hip-hop and trap artists. It is perhaps easier to create hip-hop and trap, while it is significantly more difficult to create complex orchestrations, improvisations, and harmonies, as well as expressive singing voices.

This brings us to chimeric creations. A Chimera, as you know, is a monster with parts of a lion, goat, and serpent. Sometimes, in these Suno AI creations, one can find monstrous, chimera-like hybrid tracks featuring deepfake vocals and stylistic mashups. Here, we address voice expressivity, the new research domain in music information retrieval. The central question is: How are we going to make singing voices or musical performances more expressive? To make a musical performance more expressive, one must manipulate dynamics, rubato, tempo, portamento, and

attack. Similarly, expressive voices require playing with timing variations, articulation, expressive phrasing choices, and many other elements.

The second mythological parallel I will comment on is the Apples of the Hesperides. The apples are solid gold, beautiful, and grant immortality when eaten. They are an obvious symbol of immortality. Here, this human intellectual property represents the golden apples that are being stolen every day. What will happen to humanity if we replicate these golden apples? This could lead to a copyright collapse, the devaluation of human artistry, a loss of cultural content, and many other issues. This is why I say we are moving from prominent artists to “prompt artists”, such as Velvet Sundown, an AI-generated group that appeared last year on Spotify with one million listeners.

Of course, when you ask an AI which is the most popular music genre of 2025, it suggests hip-hop and rap. In such genres, melody and harmony are often minimized, orchestration is automatic, and there is a lack of dynamics, expression, and articulation. Here we see that in the future, we will face many ethical issues with AI-generated music. These include authorship and ownership, and AI's ability to replicate the style of established musicians, which raises concerns about plagiarism. There is also the inevitable increase in the artistic surplus population and a decrease in the cost of creative labor. As AI increasingly shapes the creation and dissemination of music, the significant underrepresentation of diverse music in research datasets presents a serious threat to global musical diversity. Someone yesterday mentioned cultural diversity, and we see that 18.6% of the total dataset hours are from Western or "Global North" musical cultures. We don't have representation from Asia, Africa, or Greece. For instance, music from Greece, which lies between East and West and features different styles, micro-intervals, tunings, and modes, is not represented. So, where is the cultural diversity in these platforms and in AI-generated music?

I will now refer to Plato's Cave in relation to future generations. If future generations listen increasingly to AI-generated music, they will be listening to shadows, like in Plato's Cave. They will never experience the true dimensions, colors, and soul of real music. I believe AI will become auto-referential in the future. What are we to do when it becomes auto-referential? Will it exclude other genres, like the masterworks of classical music, jazz, or even rock with its wonderfully expressive singing voices?

Another threat is the tacit acceptance of neo-colonial practices based on the exploitation of existing music and listeners' preferences. This presents another trap: playlists and recommendations are created based on listener preferences, reinforcing existing biases. There is also the loss of jobs for creators in advertising, television, and film, reducing the demand for human composers and producers.

Another point is that AI struggles to fully reproduce vocal and instrumental expressivity because it lacks emotion, intention, physicality, human experience, and presence - it produces bodiless voices. Musicians and singers adjust their expressiveness in real-time based on feedback, their own feelings, immediate reactions, and the room's acoustics. AI doesn't feel or react in the moment; it generates outputs based on probabilities, not emotions.

These are the major ethical questions about AI-generated music. I believe another significant problem is that of distribution, as you have all mentioned. To conclude, I would like to discuss with our panelists and with you where we go from here.

First, we must consider where and how to regulate AI-generated music, and the associated research into detecting the expressivity of voices and instruments. This is crucial because, in the future, it may become impossible to distinguish between a real band and an AI-generated one.

Second, many departments are conducting experiments on the human ability to distinguish between AI and natural creations. This falls within the domain of neuroscience. There, we begin to ask ourselves: what happens if the ears and brains of future generations cannot recognize the difference? If they are unable to attend a concert and experience the feelings that we had in their age, what will be the consequence? What will happen to the development of emotions through music, which is a major research area in music neuroscience? These are my questions regarding AI-generated music. Thank you very much.

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