Al of the Tiger

Karie Shen

Envisioning the Future of Computing Prize
Social and Ethical Responsibilities of Computing
Massachusetts Institute of Technology

Summary

"In the neon glow of the screen's bright light An algorithm takes the stage tonight Human touch replaced in every show The digital sound's the only glow

AI of the tiger it's on the prowl Crafting tunes with an electronic howl Artistry or just numbers understood? The song of the tiger roars through the hood

Melodies crafted in silicon veins
Endless notes sung in digital chains
Mechanical hearts cause human pains
Conquering hearts through seamless strains"

- Lyrics generated by Suno AI, titled "AI of the Tiger" (say, Eye of the Tiger, like 1982 song by Survivor)

The airwaves buzz with excitement as radio host Chris Allen kicks off his morning show on Boston's KISS 109. He has a special guest—Dr. Alice Greene, an AI music expert from Stanford—to talk about Musio (inspired by real-life companies Suno and Udio), the AI that's turning everyday dreamers into composers. With a simple text prompt, anyone can create songs that fuse genres and styles in ways once thought impossible. Allen marvels at his own AI-generated Lady Gaga Christmas album, but Greene points out a deeper shift—AI is blurring the lines of artistry, making us question what it truly means to be a musician.

Beyond the studio, Musio is making waves in an unexpected place: Spaulding Rehabilitation Hospital in Cambridge. Dr. Alex Sadie's team has harnessed AI-generated music to help patients recover, tailoring melodies in real-time to evoke memories and restore movement. For one Alzheimer's patient, Dorothy, Musio recreated lost Greek folk tunes from her childhood, stirring something deep inside her. The music got her up and dancing, reconnecting her with a past that had seemed out of reach. Yet, Dr. Sadie warns of a double-edged sword—while AI can heal, it must never replace the human touch that makes therapy truly transformative.

Meanwhile, in the world of rock legends, Aerosmith reflects on the rise of AI music with a mix of awe and unease. They've spent decades pouring their souls into their songs, only to see AI mimic their sound in an instant. It's thrilling but also unsettling—can a machine ever capture the raw fire of a live band, the sweat, the struggle, the pure human electricity of a performance? AI music is here to stay, shaking up industries, sparking debates, and redefining creativity. They wonder what the future holds, but one thing's for sure: music, at its core, is about heart, and no algorithm can replace that.

I. The Radio

Chris Allen, Radio Host: Goooood morning, Boston! You're listening to Chris Allen on Boston's #1 Hit Music Station KISS 109. I hope you enjoyed that last song, titled "AI of the Tiger." Could you tell that it was generated by artificial intelligence? If not, you're not alone. Musio is an AI music generator which recently took the world by storm. Artists from around the globe and even regular folk sitting in their basements have been using Musio's platform to create music based off of simple text prompts. Today, we're joined by Alice Greene, a musicologist and artificial intelligence expert from Stanford, who can tell us more about how this program works. So happy to have you here, Dr. Greene.

Greene: Thanks, Chris! Y'know, when I was an undergraduate, studying computer science and music were two completely separate worlds for me. I would go to my programming lectures, code a little game, and then return home to practice violin. There was virtually no overlap. I had no idea how ubiquitous AI music would become for the world.

Allen: It's wild, isn't it? Just this morning, I was feeling for some Christmas music, but really wanted to hear it in Lady Gaga's style. So I opened up Musio's app and typed in a prompt. I was jamming out for the next hour to the best Christmas pop-rock. And we're starting to see these generations everywhere – in malls, in movies, and even in medical centers. Dr. Greene, how is it possible that Musio can take just a few words and create a unique composition that fits my request?

Greene: On a more general level, Musio works a lot like a large language model, like ChatGPT. It's trained on a ton of data to learn patterns and connections between words and music to predict the next sound bite, like ChatGPT predicts the next word in a sentence. Musio was trained on a ton of audio, with data about artist, genre, emotional qualities, and more¹. The model breaks down audio into "tokens," which are short, more manageable sound bites for processing. The model doesn't understand what an instrument or a chord is the way humans do², but it will associate sound bites from "Lady Gaga," for example, with tokens from her songs, which capture her distinct mezzo-soprano vocals, edgy, electronic sounds, and features of jazz, pop, and rock. It learns how to string sound bites together to create a cohesive melody, and organize song structure including verse, chorus, and bridge, to create compositions for users.

Allen: Wow. It's wild to me how it can take all of these individual characteristics and still create a song that sounds... well, good! With language, there tends to be a "correct" answer to how language should be — it's quite factual. What makes music so beautiful is that it's subjective and filled with personal style, but it also makes it harder to capture and do

well. Just yesterday, my friend introduced me to this fun, catchy song that combined 40s R&B with Japanese city pop from the 70s. I had never heard anything like it.

Greene: It's super cool. We're starting to see a rise of this "mix-and-match" music style, where musicians worldwide are able to blend their respective cultures together to create unprecedented music. We're getting afro-asia beats, latin-icelandic rap, and canadian-korean pop. We're seeing new identities and perspectives represented in music, and it's been accompanied by a global movement of collaboration, unity, cultural awareness, and music discovery.

Allen: A big question on everyone's mind is, does it make someone an artist to simply dream up these compositions, while the AI algorithm puts it together? I mean, I'm certainly proud of my Lady Gaga Christmas album, but I'd never in a million years be able to do that without Musio.

Greene: Well, that's a million dollar question. This movement definitely calls on society to consider how we define art. Maybe, a new definition of an artist will include someone who is really talented at writing prompts for these AI platforms – essentially knowing how to best use words to tell the AI how it should create and edit music. This is definitely a controversial position, and not one that will be welcomed by many. But similar to how typing and using the Internet were once considered special skills that could replace manual writing and research in libraries, understanding how to best communicate with AI is undoubtedly becoming a valued skill. And in the case of Musio, I think it's certainly a skill to be able to describe music the way you want to create it — not just in terms of genre and topic, but the emotions you want to draw out, and how you want the music to make people feel. I believe that this movement has many benefits, including representation for marginalized communities and accessibility for those who can't produce music in traditional ways.

Allen: I've certainly never been trained in music, unless you count me playing the triangle in my elementary school band! I wish I had the chance when I was a kid, but my family didn't have the resources. As an adult, I tried to learn to play guitar, but my fingers are pretty stiff and I have a tough time remembering the chords, so Musio's a pretty sweet alternative. It's become part of my three-year-old's nighttime routine. She's been really into songs about Stormtroopers eating pizza... I've also been sending my wife songs I make for her, inspired by little soundbites I upload, like our toddler's babbling or our son practicing piano, and she listens to them on her way to work!

Greene: That's certainly a great use of Musio! Music is really meant to be shared, and I think it's become a sort of social platform. On the flip side, one danger I do see is that Musio could

discourage more classical forms of music. It's cheap, it's easy, and it's practically immediate. The technology has become so advanced that the quality truly rivals, and sometimes even surpasses that of human-produced music. There's a fear that traditional artists, producers, and musicians will fizzle out because they work incredibly hard to produce something that may get out-competed by AI-generated music. And what's worse, their music is then used as data to feed the algorithm and help people make music just like theirs with a few clicks. This is especially an issue for indie artists, who don't have a strong platform and following to begin with.

Allen: Oh, yeah! My eldest son was complaining to me about how two of his favorite rappers—I think their names are Thug McFly and Boom Baby—would no longer produce music until they saw a ban on AI music generation platforms. Frankly, I might even be grateful... These rappers are making music that sounds like grating metal to my ears. But I sure hope that none of my favorite artists boycott making music.

Greene: This is a totally expected reaction from artists. Think about when people started using autotune, or making electronic music. Many thought it was machine gunk. Absolute trash. You could also say the same thing for when we started using vinyls and CDs, and now streaming apps. There was a fear that it would cheapen music. These things surely changed how music production worked, and changed the markets, but they also made music far more accessible. And now, these are standard components of extremely popular, impactful music, especially to the younger generation. We couldn't imagine a world without it.

Allen: Absolutely.

Greene: AI-generated music certainly raises questions about traditional notions of authorship and intellectual property. And I think people are right to be concerned about these changes, and maybe even fear them. But I think we can continue to appreciate existing forms of music while not necessarily regarding this new form as artificial or shallow, but instead, inventive and empowering.

Allen: Thank you so much for joining us today for such a thought-provoking conversation, Dr. Greene, and thanks for tuning in, America. I'm Chris Allen, and you're listening to Boston Radio's KISS 109.

II. The Hospital

- Dr. Lisa Becker, Clinical Director at Spaulding Hospital: Good morning everyone, and thank you for joining us for our Rehabilitation Grand Rounds. It's my pleasure to introduce Dr. Alex Sadie, a neurological rehabilitation specialist here at Spaulding. Dr. Sadie's team has been exploring healthcare delivery with AI, and today, they will present findings from their recent pilot program using the AI music generation platform, Musio.
- Dr. Sadie: This past year, we've examined Musio's capacity as a music therapy agent. You may be familiar with traditional music therapy, which is rooted in psychology and focuses on emotional and social well-being. In the 2000s, Spaulding launched a neurologic music therapy program, based on the latest neuroscience research concerning how neuroplasticity responds to music³. Neurologic music therapy is used to directly target motor, speech, and cognitive functions with our rehabilitation patients, including those who suffer from stroke, Alzheimer's, Parkinson's, Huntington's, and traumatic brain injury.

In the past year, we partnered with Musio to integrate tracking technologies into their AI-powdered music generation platform. By tracking patients' heart rate, breathing, brain activity, and more, Musio can create songs in real-time that are tailored to individual needs.

For our long-term care patients, we've been playing songs adapted to a tempo of exactly half of the patient's heart rate, which leads to a rapid decrease in anxiety⁴. Our music therapy program involves having patients interact with Musio's platform themselves. One of my Alzheimer's patients, Dorothy, is in a wheelchair most days and doesn't speak much. She grew up in a small town in Greece where they used to listen to local artist's "rebetiko" music. When we got her onto Musio, it was the first thing she searched for. While there have been modern rebetiko songs recorded, most songs from Dorothy's childhood have been lost, so Musio spit out a few compositions inspired by modern rebetiko. She didn't care much for those. Then, we hooked up a fast fMRI machine to Musio. It played variations of rebetiko for her, experimenting with certain tunes, tempos, lyrics, and instruments, while tracking the reactions of certain brain regions including the hippocampus, amygdala, and nucleus accumbens. Essentially, it was measuring her memory processing and dopamine levels in response to the music, and fine-tuning it to be most pleasing to her ears.

Now, she's been getting up out of bed every morning to dance, and her son said he hadn't seen her so active and happy for decades. She's even been teaching her two little

granddaughters about Greek music using the platform, and they love it because it's so intuitive for them

Musio is like an active puzzle for my patients' brains. They hear familiar tunes and rhythms, which draws out sentimental memories and emotions, while exposing them to something new. It keeps them on their toes and keeps their brain working to help create new memories, without adding pressure and stress.

We've used Musio in rhythmic auditory stimulation and musical speech stimulation – common therapeutic techniques that use musical cues to aid movement and speech rehabilitation.

I can see further applications here, including tracking brain wave oscillations and adapting music to patients' circadian cycles to help them sleep and induce longer hours of deep sleep, which tends to decrease in older adults compared to younger adults. There are applications to chronic illness and pain, which our colleagues in the Arthritis and Joint department have been piloting. There's incredible potential here.

To end, there are, of course, dangers associated with relying on AI for healthcare delivery. This form of music therapy is highly effective. But it's also cheap, and easy from a provider perspective⁵. We can hook up our patients to a machine and have them enraptured for hours without us lifting a finger. I'm sure many of you know the experience of giving iPads to your children to keep them tamely entertained in public.

What I don't want to see in our field is a dependence on this technology to deliver care to our patients. Our primary role is rehabilitation, to aid our patients to return to their activities of daily living, communication, and overall well-being. An unwritten role of ours is also to provide stability and companionship. Many of our elderly patients come here not out of medical necessity, but social necessity. What a disservice to them it would be, should we turn them away to machines. Machines which are incredibly effective at reducing their pain, perhaps, or enriching their memories, yet undeniably isolating⁶.

I hope that we, as providers and as an organization, can set a high standard for AI-based healthcare.

III. The Memoir: An Endnote on AI

It all started in Boston, back in '70, with a bunch of kids who had a dream and a whole lotta noise to make. We were just some scrappy rockers, jamming in basements, playing for anyone who'd listen. But the music took on a life of its own, and before we knew it, we were out there on the road, living that rock 'n' roll dream—crashing, burning, and rising again, like we always did. From the streets of Beantown to filling arenas, to writing the kind of songs that somehow ended up on the big screen, like "I Don't Want to Miss a Thing"in *Armageddon*—a tune that gave us a whole new kind of ride. Music has always been about connection, about pouring your soul into a riff, a lyric, a scream, and feeling it come back tenfold from the crowd.

We've always written music to move people—to make 'em feel something deep in their bones. Whether it's a song to cry to, to fall in love with, or to blast on a highway with the top down, we've put our hearts into every note. But now, there's AI out there that can mimic us, twist our voices, our style, our sound, and create songs that feel like Aerosmith but carry messages we'd never put our name on. That's what worries us. Music is a powerful thing—it can inspire, heal, and unite, but it can also be used to deceive. And when people start hearing songs that sound like us but say things we'd never stand for, well... that just ain't right.

Now, we're looking at a world where music is created not just by hands on a guitar or voices in a mic, but by algorithms spinning out melodies and lyrics in ways we never imagined. We've seen it used in ways that give us chills—the kind of stuff that makes you go, Damn, I wish I'd thought of that. Fans taking our songs and reimagining them with AI, hearing how a riff could've twisted in a different direction, or how Steven's voice might have wailed over a whole new backdrop. And we've played with the idea of AI-generated live music, feeding off the energy of the crowd, letting the fans guide the sound in ways that were impossible when we were just five guys on a stage with guitars, drums, and a harmonica.

But then there's the other side—the part that makes us stop and think. We were lucky. We got to write songs that ended up on the big screen, that became part of movie history. But now, AI can churn out a soundtrack in minutes, and some artists—people who live to write music, who were meant to do this—are being cut out of the process. And that? That ain't rock 'n' roll. That's just cold. Music isn't about convenience—it's about soul, about struggle, about putting something real into the world.

We've always been a band that embraced change. We broke barriers, we pushed limits, we adapted. And if we were starting out today, who knows—maybe we'd be making music with machines, bending AI to our will, finding a way to make it scream with us. But man, we gotta say... we're kinda glad we came up in a time when music was raw, untamed, and human. Because if there's one thing we know, it's that nothing—no algorithm, no machine, no line of

code—can ever replace the magic of a band on stage, locked in, lost in	the music, playing
straight from the heart.	

Rock on.

— Aerosmith

References

- 1. Adam Clair, "What AI in music can and can't do," Vox, Aug 5, 2024
- 2. Matthew Kosinski, "What is black box artificial intelligence (AI)?," IBM, Oct 29, 2024
- 3. Michael H. Thaut and Volker Hömberg, "Handbook of neurologic music therapy," *Oxford University Press*, 2014
- 4. Kara Platoni, "Happy birthday, baby! What the future holds for those born today," *MIT Technology Review*, Aug 15, 2024
- 5. Victoria Reed, "Music as Medicine: AI-Playlists for Mental Health & Wellness," *AICompetence.org*, Jan 11, 2025
- 6. Peter Yang, "Inside Suno, the AI Music App You Won't Be Able to Stop Listening To," *Creator Economy*, Jan 26, 2025