IM-OS

Improvised Music – Open Scores

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Proposals from readers are invited

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EDITORIAL

The exploration of improvised music and graphic scores has always been about embracing spontaneity and open interpretation. Now, with Artificial Intelligence (AI) rapidly integrating into nearly every facet of society, its presence in this artistic realm is not just expected, but a natural progression. However, this convergence raises significant questions that demand thoughtful consideration.

AI's remarkable ability to process vast amounts of data, discern complex patterns, and generate new outputs means it can swiftly interpret intricate graphic scores, translating abstract visual cues into audible musical structures with unprecedented speed. Furthermore, AI systems are increasingly capable of real-time musical improvisation, reacting dynamically to human performers and even adopting diverse stylistic characteristics. This development presents new avenues for creative discovery, enabling musicians to collaborate with AI as a partner, fostering new ideas, overcoming creative obstacles, and expanding the boundaries of musical possibility.

Yet, the rapid integration of this technology introduces complex challenges. Fundamental questions of authorship and ownership inevitably arise: when an AI contributes to the interpretation of a graphic score or improvises alongside a human, who holds the ultimate creative claim, and who retains the rights? There's also a legitimate concern about potential homogenization. Algorithms, trained on existing musical data, might inadvertently favor certain aesthetics or structural patterns, potentially limiting true innovation and diversity within improvised music. Moreover, the very essence of human artistic expression - rooted in emotion, personal experience, and nuanced intuition - represents a profound quality that AI, despite its increasing sophistication, still struggles to authentically replicate.

Ultimately, as AI becomes an increasingly sophisticated tool within the domain of

improvised music and graphic scores, the critical question remains: how do we harness its immense potential to genuinely enhance human creativity and artistry, rather than inadvertently diminishing it? The future of this evolving field lies in cultivating a symbiotic relationship where AI serves as a powerful collaborator, amplifying human ingenuity and broadening our musical horizons, while crucially preserving the unique and irreplaceable spark of human improvisation.

This issue delves into these issues and explores a wide variety of potential implications that AI is already having on improvised music and open scores and could also have in the future. It has come to stay. Readers who are into relevant projects - do not hesitate to write to us!

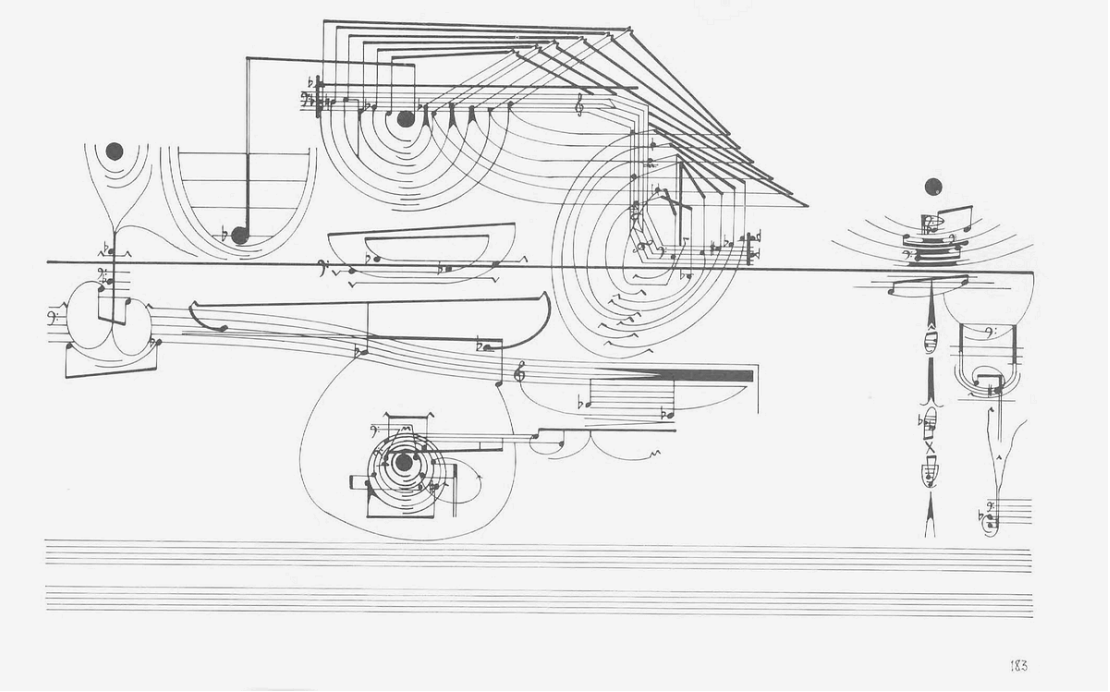
JS

An AI Performance of Cornelius Cardew's Treatise: Implications for Improvised Music

When Cornelius Cardew created *Treatise* in the 1960s, he wasn't writing a score in the traditional sense. He was drawing a graphic landscape-193 pages of lines, shapes, and symbols with no instructions on how to "play" them. Every performance of *Treatise* is different because it depends entirely on the interpretive choices of the performer. So what happens when the performer isn't human, but artificial intelligence?

A recent project offers a fascinating answer. This work presents a novel method for composing and improvising music inspired by *Treatise*, using AI to bridge graphic notation and musical expression. By leveraging OpenAI's ChatGPT to interpret the abstract visual elements of *Treatise*, the team converts these graphical images into rich textual prompts. These prompts are then fed into **MusicLDM**, a pre-trained latent diffusion model designed specifically for music generation.

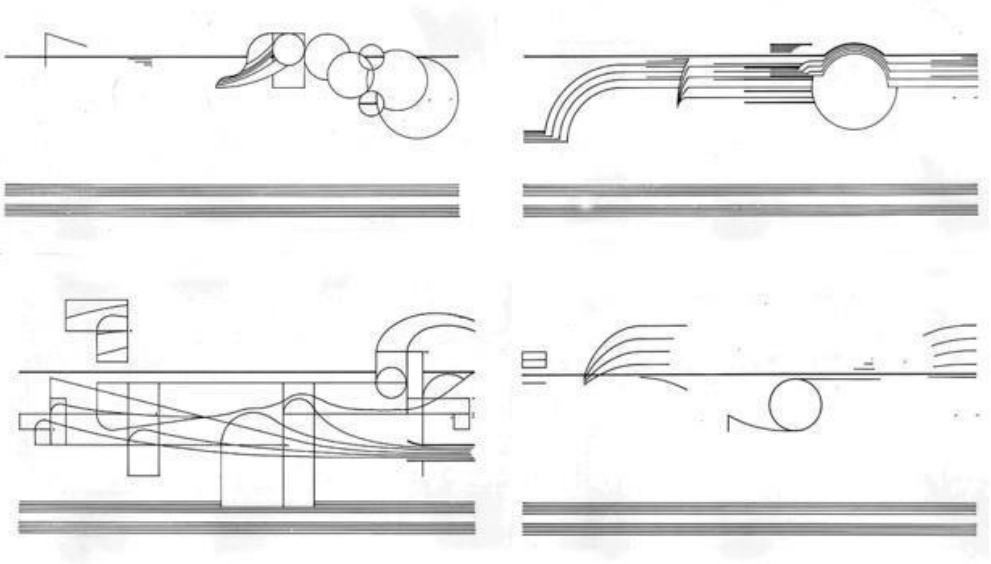
To create a sense of cohesion across the music, they introduce a technique called **"outpainting"** - a way of overlapping AI-generated audio segments to build longer, seamless compositions. It's a clever approach that sidesteps the usual fragmentation in generative audio and mirrors the interpretive continuity that live performers bring to *Treatise*.



Page 83 of Cornelius Cardew's *Treatise.*

This kind of AI performance isn't just a technical feat-it's an artistic statement. It demonstrates a new perspective on how we might perform and interpret graphic scores, showing that AI can transform visual stimuli into sound and expand what's possible in contemporary and experimental music.

AI systems interpreting *Treatise* challenge our assumptions about improvisation. Normally, improvisation is tied to human traits: intuition, emotion, experience. But here, the AI engages with the ambiguity of the score, building its own logic for what each shape might mean sonically. Instead of fixed instructions, it works with interpretive freedom-the same freedom that has made *Treatise* a cult classic among experimental musicians. And this is where it gets interesting for the broader improvisational world. AI in this context isn't replacing the human; it's acting as a new kind of improviser. It introduces fresh textures, unexpected transitions, and even moments of surprise that can inspire human collaborators in turn. In live or layered performances, it creates a hybrid musical intelligence, blurring the lines between composition, performance, and interpretation.

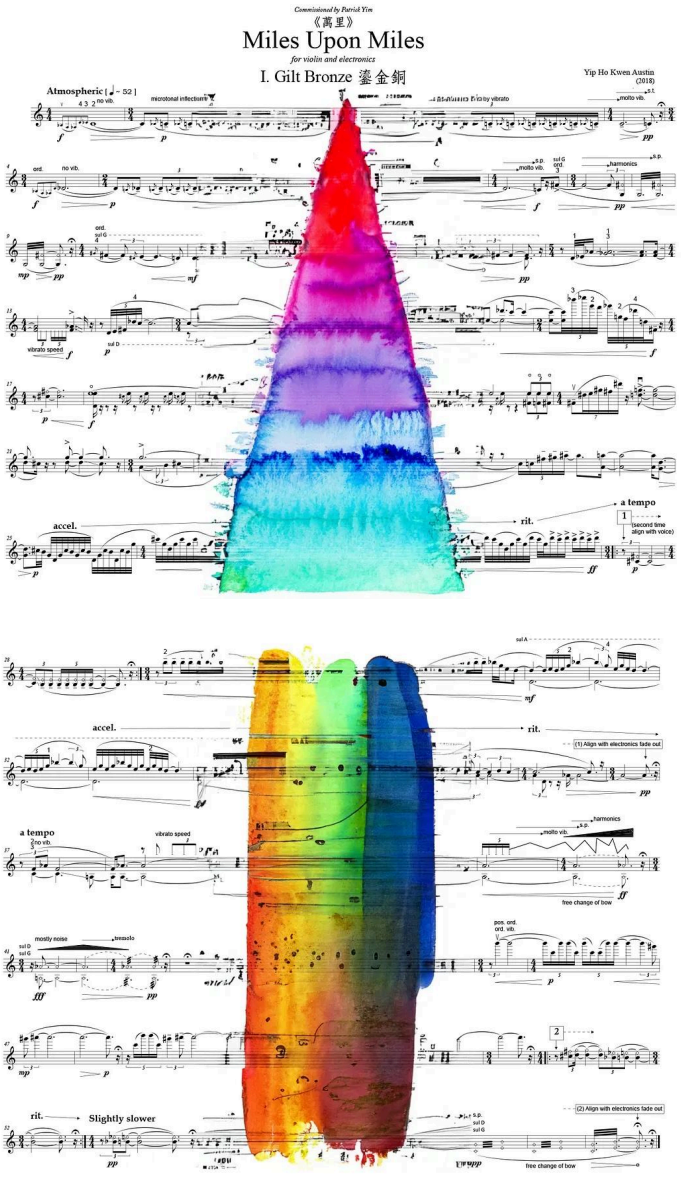


Four more pages of Cornelius Cardew's *Treatise.*

If nothing else, AI playing *Treatise* reminds us that music doesn't live only in the hands of humans - it lives in systems of interpretation. And when those systems include artificial intelligence, the result is not a diminished art form, but an expanded one.
Read more about the project and the underlying research here:
https://music-cms.ucsd.edu/_images/news_images/2024-12_dubnov_paper_award.pdf
- And do not let the technicalities and mathematics scare you - listen to the outcome here:
https://bit.ly/TreatiseAI

‘Miles Upon Miles’ - A Generative AI Score by Yip Austin

‘Miles Upon Miles’ is a musical composition for violinist Patrick Yim, originally written in 2018, that was subsequently used in an experiment where its score was cut in half and then recompleted by Adobe Photoshop's Generative Fill AI, allowing for visual exploration of how AI interprets and integrates with existing musical notation and artistic styles.



Yip Austin (b.1985) presents himself as Composer | Sound Designer | Interdisciplinary Artist and has this homepage: https://austinyip.com/

AI in Music: Ally or Adversary for the Creator?

A recent article published by Telefonica (a Spain based multinational telephone firm), titled "AI in music: the impact for the music creator," delves into a crucial question circulating right now: Is Artificial Intelligence here to empower musicians, or does it pose a quiet threat to their artistry? This isn't just a passing thought; it's a profound consideration as AI rapidly integrates into every corner of our lives, including the very essence of music creation. The dialogue is charged with both thrilling possibilities and genuine apprehension, and frankly, the answer isn't a simple 'yes' or 'no.'

Tearing Down Creative Barriers

The Telefonica article astutely highlights one of AI's most compelling promises: its ability to dismantle traditional limitations that have long constrained musicians. Historically, bringing a grand musical vision to life often hinged on your technical skill with various instruments or the financial means to hire others.

The author's vivid example of imagining a bagpipe passage but lacking the personal ability or budget perfectly illustrates this hurdle. AI offers a revolutionary shortcut, enabling creators to conjure intricate arrangements or employ instruments they can't personally play, all without years of dedicated practice or a hefty financial outlay. This is a significant shift, potentially democratizing music creation and unlocking previously inaccessible avenues for artistic expression.

The Hidden Cost of Convenience

However, the article quickly pivots to a more sobering concern: the risk of artistic "involution" driven by over-reliance on AI. This point extends beyond mere technical capability, touching on the very process of artistic growth. The author’s personal anecdote about losing the ability to tune by ear after acquiring an electronic tuner serves as a potent metaphor. The convenience AI offers, while undeniably powerful, could subtly erode fundamental skills honed through diligent practice and problem-solving.

If a machine can instantly deliver a perfect musical line, what motivation remains for a musician to spend countless hours mastering an instrument or developing their inner ear? This raises a profound question: does effortless creation diminish the inherent value of the creative journey itself? Could it lead to a generation of musicians who are adept at prompting AI but lack the deep understanding and innate skill cultivated through dedication and perseverance?

Ownership, Originality, and the Evolving Landscape

While the article touches on it implicitly, the broader implications of how AI learns and generates music warrant deeper discussion. AI systems analyze vast amounts of existing human-created music, extracting patterns in a way that mimics human learning. This reliance brings to the forefront critical questions about originality and intellectual property.

If an AI is trained on copyrighted material, what are the legal and ethical ramifications for the new music it generates? Who truly "owns" the music an AI creates, and how do we ensure fair compensation and attribution for the artists whose original work formed the very foundation of the AI's learning? The article notes that "an artistic work can only be protected by intellectual property if it has been created by a human being," underscoring the current legal ambiguities and the urgent need for new frameworks to address AI-generated content. Ultimately, the Telefonica article offers a thoughtful and nuanced perspective on AI's role in music creation. It rightly identifies AI as a transformative force, capable of democratizing access and expanding creative horizons. Yet, it also wisely warns of a potential, subtle erosion of core artistic skills and the complex, unresolved issues surrounding intellectual property and true originality in an AI-assisted world. The question of whether AI is a threat or an ally is not a simple binary choice; rather, it's an ongoing dialogue about how humanity can responsibly integrate this powerful technology without sacrificing the very human qualities that make artistry so profound and invaluable.

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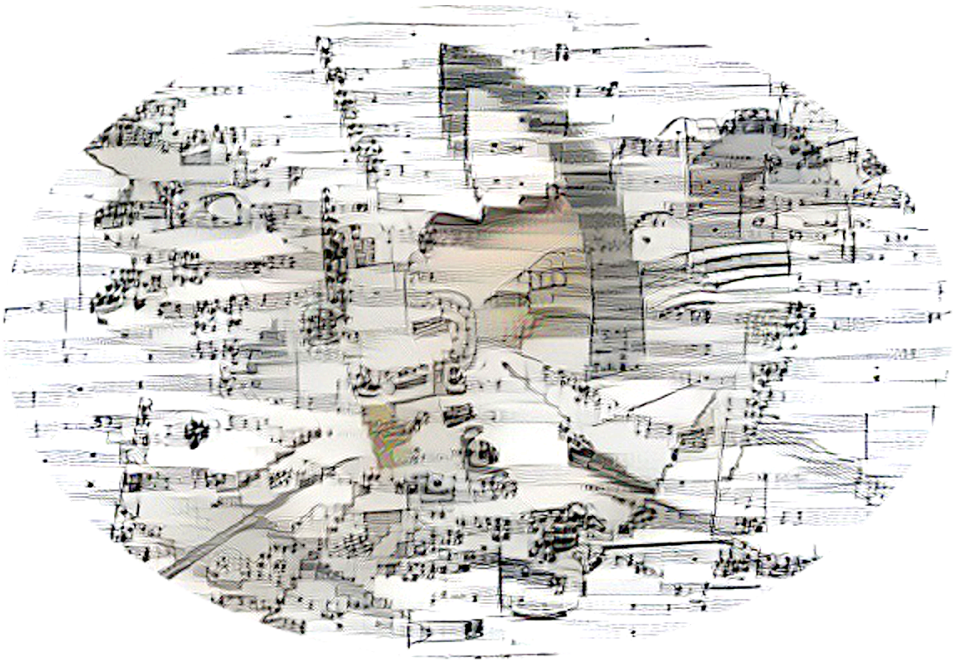
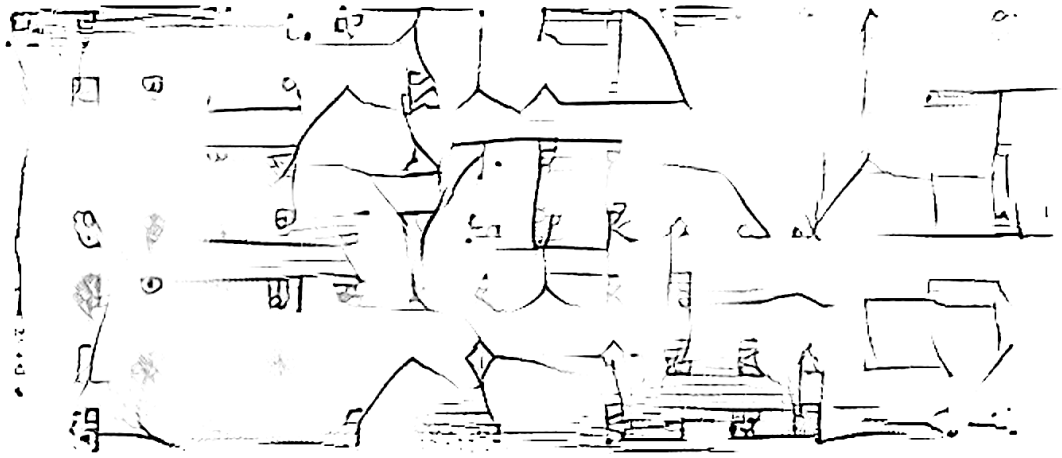
Adachi Tomomi - Scriabin, Kandinsky, Treatise and Chinese Calligraphy

Between 2015 and 2020, Adachi Tomomi created AI-generated graphic scores that explored new notation systems, open to interpretation by any instrument, by integrating elements of Chinese Calligraphy and Treatise and the synesthetic artistic languages of Kandinsky and Scriabin.



Adachi Tomomi (b.1972) presents himself as performer/composer/poet/visual artist and has this homepage:

https://www.adachitomomi.com/notations/



AI Graphic Score Creators: A New Era for Composers and Performers?

The intersection of artificial intelligence and music composition is yielding fascinating new tools, one of which is the AI graphic score generator. These tools, like the one featured on NightCafe Studio, allow users to visualize their musical ideas in unique and often stunning ways, transforming abstract concepts into visual representations of sound. But what does this mean for composers and performers?

Visualizing Music with AI

AI graphic score generators use algorithms to create visual representations of music. Instead of traditional notation, these scores employ images, shapes, and colors to convey musical information. This approach opens up new avenues for creativity and interpretation.

- **Accessibility:** Graphic scores can be more accessible to musicians who may not be fluent in traditional notation.
- **Creative Exploration:** They encourage experimentation and can lead to unconventional and innovative performances.
- **Visual Inspiration:** The generated visuals can themselves be a source of inspiration for both composers and performers.

Implications for Composers

For composers, AI graphic score generators offer a novel way to conceptualize and

develop musical ideas.

- **New Compositional Techniques:** Composers can use these tools to explore new forms of musical expression, moving beyond the constraints of traditional notation.
- **Collaboration with AI:** AI can act as a creative partner, suggesting visual representations that the composer can then refine and develop.
- **Expanding the Palette:** Graphic scores can represent musical elements like timbre, texture, and dynamics in ways that traditional notation struggles to capture.

Implications for Performers

Performers faced with graphic scores must interpret the visual information and translate it into sound. This requires a high degree of creativity and improvisation.

- **Freedom of Interpretation:** Graphic scores often allow for a wider range of interpretation than traditional notation, giving performers more agency.
- **Developing New Skills:** Performers may need to develop new skills in visual interpretation and improvisation.
- **Audience Engagement:** The visual aspect of graphic scores can create a more engaging and immersive experience for the audience.

The Future of Music Creation

AI graphic score generators are still a relatively new technology, but they have the potential to significantly impact the way music is created and performed. As AI continues to evolve, we can expect even more sophisticated tools that blur the lines between composer, performer, and machine.

You can explore an AI graphic score generator and instruct it to create your “own” score here:

https://creator.nightcafe.studio/creation/XOPcC2oUWZd236iuW7LR

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CONTRIBUTOR TO THIS ISSUE

All articles in this issue were written by Joe Scarffe.

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