

Gaia is hanging by a thread...

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Gaia is hanging by a thread... is an interactive audiovisual performance that explores the delicate balance between technology, humanity, and our planet's ecosystem. This approximately 6-minute performance aligns primarily with solarpunk aesthetics, offering a critical contemplation of electronic art, sustainability, and collective ecoconsciousness through audience interaction and connection.

Additional Key Words and Phrases: DIY synthesizer, solarpunk, feedback, interactive audiovisual performance, sustainability

1 Program Notes

Gaia is hanging by a thread... is an interactive audiovisual performance that investigates the intersection of art, technology, and environmental sustainability through participatory electronics. This six-minute piece employs a DIY solar powered synthesizer and custom audiovisual processing software created in Max, to create a dynamic circuit of sound and imagery, collectively modulated by audience interaction. This piece work challenges traditional paradigms of electronic art by emphasizing communal creation and environmental consciousness. Through this collaborative framework, Gaia is hanging by a thread... serves as both artistic expression and critical intervention, exploring how electronic instruments can engage with pressing questions of technological sustainability and collective environmental responsibility.



Fig. 1. Public performance of *Gaia is hanging by a thread...* at Push The ENVELOPE in Hong Kong, 2024

At the heart of this performance is the Solar Punk Console, a solar-powered capacitive synthesizer that embodies the solarpunk ethos of sustainable technology and community interconnectedness. This synthesizer not only harnesses solar energy but also invites audience participation, as conductive threads connected to the Solar Punk Console's synthesis control inputs are deployed into the audience during performance. Participants are encouraged to hold, manipulate, or pass these threads, forming a complex electronic circuit within the performance venue. This interaction directly impacts both the audio output and the visual atmosphere of the performance space using audiovisual processing software created in Max. This piece utilizes feedback in both audio and visual systems to blur the lines between performer, audience, and environment, as collective actions of the audience shape a interwoven synesthetic sensory experience in real-time.

While audience participation is central to the piece, even the tiniest interactions can have dramatic effects. Attendees can choose their level of involvement without impacting their appreciation of, or the overall development of the work. The performance space may be arranged like any standard performance venue, without requiring any special accommodations.

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2 Project Description

On a higher level, *Gaia is hanging by a thread...* seeks to create a powerful metaphor for our interconnected global ecosystem and the impact of collective human action. By literally connecting audience members through conductive threads and allowing their interactions to shape the performance, the piece illustrates how individual choices can create far-reaching and dynamic effects on our shared ecosystems.

This piece is showcases the Solar Punk Console, a DIY synthesizer that translates solar energy into sound using the human body as a conduit. Performers and audience members are encouraged to touch capacitive threads and tactile capacitive icons to explore the wide variety of sounds that can be discovered. This synthesizer is best played while cooperating with others, holding hands to form complex circuits among many participants. At the heart of the Solar Punk Console are photovoltaic cells that capture sunlight and transform it into electrical energy. Solar energy is then channeled through a series of bio-sensitive circuits that respond to the conductivity of the human skin thanks to high-gain LM386 integrated circuits arranged in a feedback. By making contact with the instrument's sensitive nodes, the players become part of the circuit, allowing the electrical signals to flow through them, modulating and manipulating the synthesizer's chaotic tones and fierce textures. The Solar Punk Console is a beacon of possibility for a future of sustainable electronic instruments that are not tied to the constraints of traditional energy sources.



Fig. 2. SolarPunkConsole V1 PCB Synthesizer, 2024.

This performance and DIY synthesizer were both heavily inspired by projects such as Forrest Mims' Stepped Tone Generator aka the Atari Punk Console [3], Peter Blasser's Tocante [1], and Nicholas Collins invaluable text, *Handmade Electronic Music*. [2]

3 Technical Notes

This piece is highly adaptable to a variety of performance spaces and AV systems. The essential requirements are an AV system that has two full-range loudspeakers and a display system that is as large as possible.

Apart from these basic requirements, this piece can be easily modified to accommodate immersive/spatial sound systems, as well as non-typical display environments (dome, architectural mapping, spherical, etc.) with prior notice.

An AV/soundcheck, not including load-in/setup, of at least 30 minutes is requested, with any additional time hugely appreciated. It takes approximately 15 minutes to set up on stage.

Technical Requirements:

- Performance area: Minimum 4m x 3m stage
- Large display (4m or wider preferred), projection or LED
- Sound system suitable for electronic music performance

- Dim house lights, with the ability to see the audience during the performance
- A table, provided by the venue, at least 1 meter wide with power strip, placed at center stage
- The artist will provide all equipment – Mac laptop, MOTU audio interface, Solar Punk Console synthesizer, and will send 2 TRS audio feeds (L/R – Stereo) to the house, and 1 HDMI signal to the display system.
- If the venue can provide, a stage monitor is preferred, but not absolutely necessary.

Stage Setup:

- Single table at center stage, with chair and power strip.
- HDMI or USB-C output from table on stage to Projector.

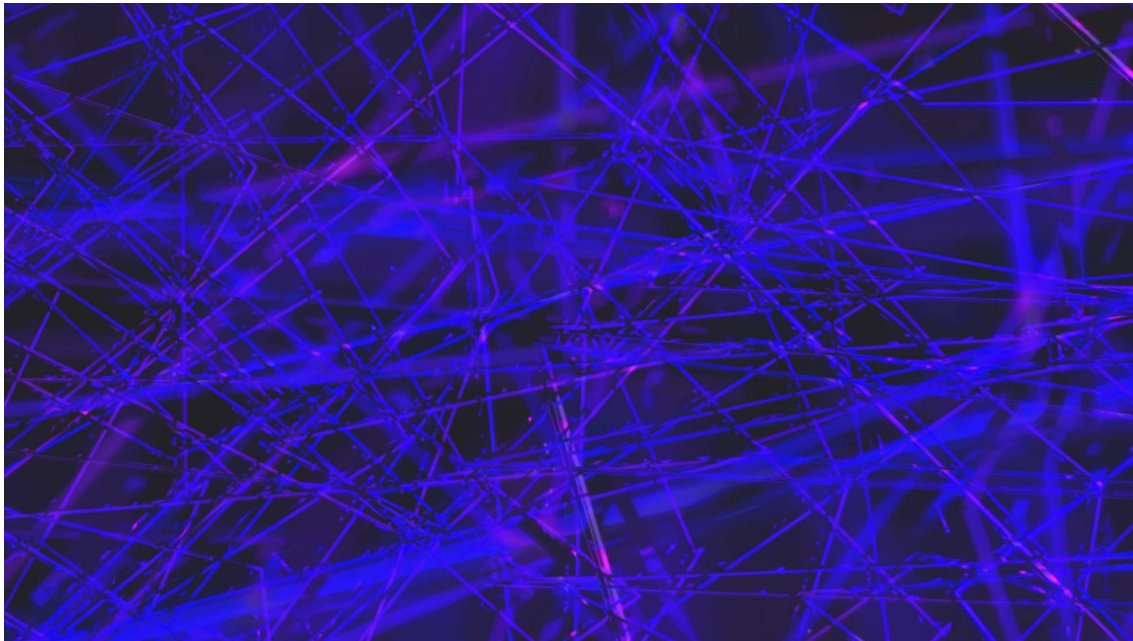


Fig. 3. Video still from audiovisual performance software built with Max

4 Media Links

- Video: <https://bit.ly/nime2025gaia-video>
- Audio: <https://bit.ly/nime2025gaia-audio>

5 Ethical Standards

Gaia is hanging by a thread... aims to draw attention to the sustainability issues that we are confronted with as electronic artists, and to connect people together to nurture ecoconsciousness. An early iteration of Gaia is hanging by a thread... was work-shopped at Push the ENVELOPE: Sound Art Initiative in Hong Kong in 2024. The artist does not believe there are any potential conflicts of interest. All research and project participants gave full consent to participate. No animals were involved in this research.

References

- [1] Peter Blasser. 2020. *Tocante*. Retrieved February 2, 2025 from <https://ciat-lonbarde.net/tocante/index.html>
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