

L'UPIC Ludique

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1 PROGRAM NOTES

L'UPIC Ludique reimagines Xenakis' UPIC (Unité Polyagogique Informatique CEMAMu) instrument as a children's toy. With its stripped-back, simple, minimal wooden interface, raw audio waveforms can be drawn and manipulated. Different coloured pencils can control various layers of the composition, from drawing audio waveforms to manipulating other parameters and employing compositional techniques such as granular synthesis.

The original UPIC, developed in the late 1970s, enabled composers to create musical elements such as pitch, dynamics, and timbre contours from shapes drawn on a tablet. This graphical approach to music composition was a ground-breaking innovation in early computer music. However, with the evolution of touchscreen phones, tablets, and laptops, using a screen to create music has become ubiquitous.

L'UPIC Ludique is both battery-operated and portable and aims to revisit the fun, tactile, and haptic approach of the original UPIC by utilizing pencils and paper. The work questions whether some of the magical and playful qualities of this original dedicated computer music instrument have been lost in complex graphical interfaces and multi-use devices.

2 PROJECT DESCRIPTION

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The original UPIC, developed by Xenakis in the late 1970s, enabled composers to create musical elements such as pitch, dynamics, and timbre contours from shapes drawn on a tablet. This graphical approach to music composition was a ground-breaking innovation in early computer music. However, with the evolution of touchscreen phones, tablets, and laptops, using a screen to create music has become ubiquitous. Recent projects such as SoundingBrush by Sourya Sen, Koray Tahiro and Julia Lohmann [1] have explored the act of translating drawing into sound in novel ways, but rely on commercially produced tablets. L'UPIC Ludique is both battery-operated and portable and aims to revisit the fun, tactile, and haptic approach of the original UPIC by utilizing pencils and paper as opposed to a conventional tablet screen. The work questions whether some of the magical and playful qualities of the original UPIC have been lost

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to complex graphical interfaces and general-purpose computers that increasingly demand our attention away from making music.

The work was initially prototyped during the Xenakis 2022 centenary celebrations and developed from a longstanding interest in the connections between visual art and sonic art, with a desire to make complex musical processes more accessible, tactile, and visible. Xenakis' writings about the UPIC repeatedly reference a desire for the UPIC to be accessible and enjoyable.

"You don't need any musical knowledge to use the table, and in fact it also serves as a pedagogical tool. We're visited regularly by schoolchildren of seven or eight years of age, accompanied by their teachers. They draw fish, houses, trees - and can hear the result." [2]

Or as Robert Frisus notes in *From Xenakis's UPIC to graphic notation today* [3]

"Xenakis imagined that even children could make such drawings and familiarize themselves with the (computer-assisted) sound results. He assumed that musical creativity is not only a privilege for the few, for example, only appreciated and promoted by specially trained people, but rather a broad potential without limitation based on individual age or educational levels."

The instrument uses a touch resistive screen connected to a Bela Mini running C and SuperCollider software.

3 PERFORMANCE NOTES

The instrument has a line output that can go straight into a DI box and subsequently into the venue's sound system. The performance would be a development of the documented work.

During a previous performance of the piece, a camera was mounted above the instrument, and this feed was projected, allowing the audience to witness the drawings turning into sound. I would prefer to travel by rail to the conference and perform in person, but with the addition of a live camera setup, this performance lends itself to being streamed online, fulfilling NIME's important environmental concerns.

The performance has previously been presented in a theatre space, and the contrast between the small intimate performance and the large sound and projection worked well. The work could therefore be suitable for Tivoli Vredenburg; however, it would also be well-suited to a more relaxed presentation at a performance dinner at 'the Nijverheid' where the audience could ask questions and try using the instrument.

To be provided by the artist: Instrument, camera, and computer with HDMI output to display the work on a projected screen.g., in terms of technology, and what you expect us to provide.

4 MEDIA LINK

- Video: <https://youtu.be/NSbDbgL3gOE>

REFERENCES

- [1] Julia Lohmann Sourya Sen, Koray Tahiroglu. [n.d.]. SoundingBrush:A Tabletbased Musical Instrument for Drawing and MarkMaking. In *NIME Proceedings, 2020*.
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