Title: Spectra

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1. PROGRAM NOTES

Spectra is a transdisciplinary performance exploring latent sound spaces through dance and the perception of human gesture. By tracing the motions of a dancer and using these gestures to navigate through sound corpora, this piece evokes the intricate interplay between technology and human experience.

Drawing inspiration from technological advancements and their influence on human development, particularly the gradual reshaping of cognitive frameworks, this audiovisual composition explores the dynamics between humans and algorithmic systems. It probes various relational paradigms within an environment where the distinction between artist and machine becomes increasingly blurred.

Fig. 1. Spectra.

2. PROJECT DESCRIPTION

Spectra is a transdisciplinary performance exploring latent sound spaces through dance and the perception of human gesture. By tracing the motions of a dancer and using these gestures to navigate through sound corpora, this piece evokes the intricate interplay between technology and human experience.
Inspired by the transient essence of human existence, this audiovisual creation strives to enhance creative expression within a domain where the demarcation

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between human agency and machine contribution becomes increasingly indistinct. Leveraging the human body as a navigational tool, it traverses the complex terrain where the tangible and virtual converge, facilitating an exploration of hybrid environments in our perceptual landscape.

Integrating machine learning and computer vision to interpret human gestures, *Spectra* seeks expressive navigation of sound corpora through real-time feedback from a dancer, focusing on multi-dimensional sound banks. Motion-tracking technology, including an infrared depth camera, ensures accurate interaction. Video generated in Touch Designer offers sensitive feedback and spatial indication of the dancer's gestures. At the same time, two-dimensional points in MaxMSP enable real-time sound control, creating synchronicity between visual and aural elements.

Spectra amalgamates dance, digital arts, and artificial intelligence by adopting a transdisciplinary approach. Movement tracking transforms gestures into auditory focal points within multi-dimensional soundscapes, facilitating expressive exploration facilitated by machine learning. The dialogue between humans and machines delves into subtleties between human creativity and algorithms, contemplating themes of autonomy and interdependence in an interconnected world.

Beyond technical aspects, the project questions our relationship with technology, blending artistic and technological dimensions to nurture creativity. Drawing inspiration from technological advancements and their influence on human development, particularly the gradual reshaping of cognitive frameworks, this audiovisual composition explores the dynamics between humans and algorithmic systems. It probes various relational paradigms within an environment where the distinction between artist and machine becomes increasingly nebulous.

3. PERFORMANCE NOTES

Spectra is a 15-minute performance conceived by Jean-Philippe Jullin in collaboration with dance artist Ariane Levasseur. Structured into three acts, each act explores distinct relational paradigms between humans and machines, delving into various forms of symbiosis and interaction. Through nuanced choreography and technological integration, *Spectra* navigates the evolving boundaries and connections between humanity and technology, inviting audiences to contemplate the intricate dynamics at play.

4. MEDIA LINK(S)

- Video: Spectra (DEMO)
- Photos: Spectra (Photos)

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ETHICAL STANDARDS

This work has been conducted in accordance with ethical standards and guidelines. Funding support for this project was provided by the Fonds de Recherche du Québec – Société et Culture (FRQSC), with no conflicts of interest, whether financial or non-financial, present. Human participants involved in this research provided informed consent, and measures were taken to ensure their well-being and safety. No harm was inflicted upon any participants during the creation of this performance.

It is acknowledged that the ethical and political implications of merging or immersing humans with machines are complex and often underrepresented in current cultural discourse. While this project integrates human-machine interaction through motion-tracking technologies, it does not utilize invasive technologies. The interaction between humans and machines was pursued in a quest for algorithmic expressiveness.

While this project acknowledges the need for critical examination of the ethical dimensions surrounding human-machine integration, it aims to initiate discourse and debate in this area. The justification for this integration stems from its potential to enhance artistic expression, explore novel avenues of creativity, and foster interdisciplinary collaboration. Through this exploration, the project aims to initiate dialogue and foster discussion about the ethical implications of technology in contemporary society.

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