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# Jardim das Cartas: generative and interactive installation in mixed reality for music and dance

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## Abstract

Developed within a collective and collaborative creative process involving dancers and musicians, *Jardim das Cartas* (Garden of Letters) is a generative and interactive installation in mixed reality created initially to break the social isolation caused by the pandemic. It is an environment driven by a computer system and network technology allowing virtual and live visits and immersing performers (dancers and musicians) in several layers of audio-visual projections.

## 1. Introduction

*Jardim das Cartas* was conceived to break the Covid19 pandemic social isolation when artists from all over the planet created and performed inside their homes. Starting in June 2021, its seed materials consisted of a database composed of excerpts from video and audio recordings. Initially guided by the poem "*Cartas à Presença*" (Letters to the Presence) written by Manzoli, a series of videos using computer editing tools for audio-visuals was named "visits" to the digital and virtual garden [1][2] presented in the official channel of the project<sup>1</sup>.

The article describes an artistic research perspective [3] focusing on an autoethnographic approach [4] to discuss the creative process unfolding. Gradually, due to the reduction of social isolation restrictions and the development of new compositional and performance methods, the research evolved from remote interactions among dancers and musicians until reached an installation at the UNICAMP Art Gallery in July 2022. Thus, *Jardim das Cartas* can be presented in a virtual gallery, in a physical exposition, or in both situations, with performers in remote and virtual locations simultaneously. That means, an

installation in mixed reality.

The next two sections present the theoretical background and a description of the generative computer system with two main programs and a mobile application. The last section is an autoethnographic report on the compositional process presenting three phases of the project. The project official website can be accessed in the following link <sup>2</sup>.

## 2. Theoretical Background

The project reported here derives from two previous works: "*Synthetic Oracle*", an interactive installation exploring the mixed reality anchored on the effects of implicit and explicit interactions [5], and "*Ode to Christus Hypercubus*", an interactive performance environment shuffling digital files producing audio-visuals driven by a generative computer system [6][7].

In a previous article [1], we introduced *Jardim das Cartas* discussing the opposition between virtual Presence or Telepresence with the scenic Presence of music and dance. *Jardim das Cartas* also dialogues with the primordial concept of Panta Rhei by the philosopher Heraclitus (c. 535 – c. 475 BC) [1][2], the thoughts of Deleuze and Guattari [8], and the Ecology of Perception [9].

The creation of audio-visuals started with recordings of videos, recitations of the original poem, and musical instrument solos [1]. The goal was that, as soon as possible, these artists interact with each other. In parallel, we developed a computer system and a mobile application to allow virtual and live interactions among dancers and musicians. We also intended to induce a perception of immersion in dance, video and generative music. So, the idea was

to generate audio-visuals producing a net of meaning upheld and reiterated by the visual and aural modalities. Spectators listening to music and contemplating videos were exposed to a garden of multitudes: a digital ecology.

We already discussed the theoretical viewpoints supporting *Jardim das Cartas* under the Ecological Theory of Perception [2], which defines perception as the product of a continuous flow of actions in complementary relations between the animal and the environment [9]. According to Gibson, the perception of the environment inevitably leads to some course of action. He introduced the notion of affordances as the environmental properties indicating possibilities for action and perceived directly and immediately, without a priori cognitive processing. We understand in *Jardim das Cartas*, the environment (the garden) becomes a space for exploring multimodal experiences, inducing visitors and performers to immerse themselves in sounds, movements, and videos. It is also an open work, as the final assembly takes place during an exhibition allowing simultaneous and remote participation of several performers.

### 3. Generative Technology

The computational system developed for the project uses a non-sequential and non-deterministic procedure to access the audiovisual database. It acts as a generative agent recreating combinations of the stored material.

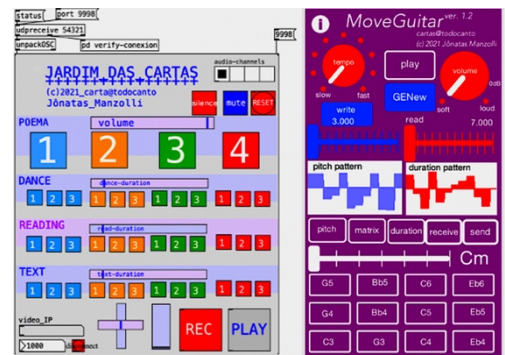
#### 3.1 Main Generative Systems

The system, consisting of two programs implemented in Pure Data (Pd), a visual programming language developed by Puckett [12] and TouchDesigner computer graphics platform, generates music and video in real time,

respectively. Pure Data (Pd), widely used by musicians, and sound artists, is an open-source project with a large developer base working on new extensions.

The TouchDesigner, developed by the Toronto-based company Derivative<sup>3</sup>, and also used in Generative Art, is a node-based visual programming language for generating real-time interactive visuals (see tutorial<sup>4</sup>).

In live performance, these two programs allow the real-time interaction of audiovisuals with musicians and dancers and control a mixed-reality environment for virtual, presential, and telematic interactions.



**Figure 1: GUI of the Pure Data program to control the generative audio system (left). GUI of the MoveGuitar App allows the performers' local and remote interaction (right).**

#### 3.2 Mobile App: MoveGuitar

An application running on mobile devices communicates with the two main computer programs. It was also implemented in Pure Data (Pd) using the Mobile Music Platform (MobMuPlat) by Daniel Iglesias [13]. Figure 1 shows the GUI of the MoveGuitar App that runs on iPads, iPhones, and Tablets, devices

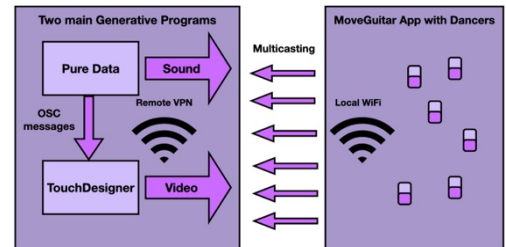
with Mac OS or Android systems. Similar to previous work [6], it allows real-time interaction between the two main programs with mobile devices during live performances. It provides a wide field for expression and interpretation: performances in a concert hall with musicians and dancers interacting only in the acoustic domain or a multimodal assembly in which performers interact locally and remotely. Such use of mobile devices in interactive performances dialogues with the recent creation of laptop orchestras [14][15].

The development of the mobile device began with an app to manipulate sound samples remotely using granular synthesizers called grainBirds [16]. Later, inspired by African music patterns, we developed the MoveGuitar app dedicated to performances involving movement and rhythm. The app generates pitch material with pentatonic scales that dynamically change tonal centers. The rhythm is generated by cycling a 12-patterns of beats. The user controls pitch and rhythmic patterns drawing on the app GUI (see figure 1).

Therefore, the architecture of the interactive and generative system includes the two main programs and the mobile app (see figure 2). It uses network technology for data exchange and interaction between musicians and dancers (locally and remotely). The communication between the two main programs and mobile devices uses the Open Sound Control (OSC) protocol within a local WiFi network, and remote communication using a VPN connection, as described in [16].

The development of the two main programs and the mobile one allowed the creative and performance processes unfoldings. These two systems gradually

incorporated three compositional phases described in the next section. We initially focused on building an audiovisual database, and later we created virtual visits shared on social media in a virtual gallery. Next, we tested the mobile app with dancers as they played them as digital musical instruments and video cameras. Finally, we integrated all these approaches, thus enabling performance in mixed reality (see figure 2).



**Figure 2: General Architecture of the generative system allowing mixed reality performances**

In short, the generative technology of the project supports the live and remote performances of musicians and dancers. If it is set up as an installation, it is presented in a room with a large screen for video projection and loudspeakers for sound diffusion around the visitor. The environment must have very little light because most of the lighting comes from the projectors, and with hidden loudspeakers, visitors don't know where the sounds come from (see figure 3).



**Figure 3: Installation montage at the**

## UNICAMP Art Gallery

### 4. Autoethnographic Reports

This section describes how the compositional process of *Jardim das Cartas* evolved over almost two years. It is interesting to dwell on the creative path to understand how the transition from remote to face-to-face performances happened until the mixed reality installation. We invite readers to watch the video visits, indicated by links at the endnotes, before reading the following autoethnographic reports.

The compositional process has three phases: 1) visits from 1 to 12: the seed material described in [1], 2) visits from 13 to 21: the transition from remote to hybrid interaction, 3) visits 22 and 23: the installation in mixed reality.

#### 4.1 Seeds of the Garden

The creation of the first 12 visits, during the social isolation, started with a concept of multiple semantic associations to the poem “*Cartas à Presença*” (Letter to the Presence), written by Manzolli [1]. Addressing the Presence of four universes of sensations: *Oceans, Mountains, Winds, and Magma*, it dialogues with Heraclitus’ *Panta Rhei* (see Visit 1<sup>5</sup>).

Later, we developed a methodology based on creative triggers: a set of color cards sent only to one dancer without repetition and without knowing who received the cards. When receiving a card, dancers recorded a video clip and sent it as an answer.

The resulting video database was recorded by 15 movement artists, including 06 teachers, 06 post-graduate, and 03 undergraduate students, almost all from the Institute of Arts, University of Campinas (UNICAMP). It was created by

dancers representing diversity, especially in dance languages, age, and ethnic-racial roots. Shortly, in the first creative phase, we related the four elements associated to the seed poem to different digitally recorded files: poem narration, environmental sounds, musical instrument solos, and video clips (see a compilation of the initial visits<sup>6</sup>).



**Figure 4: Mosaic of images from the first phase of the project**

#### 4.2 From remote to hybrid interactions

The first face-to-face performance was in November 2021. Visit 13<sup>7</sup>, carried out by two dance students under the guidance of Andraus, proposed an interaction using costumes and cell movements from the previous remote video recordings. The dance duo promoted a dialogue between remote and live elements through the recurrence of similar movement matrices in a different context within an open-air performance. The music features excerpts from previously recorded material, highlighted voice narrations, Sprechgesang voice, and electric guitar solos.

Next, visits 14 to 19 focused on begin to deal with the exploration of MoveGuitar app (see previous section). Visit 14<sup>8</sup>, created from a poem written by Manzolli celebrating the reopening of the UNICAMP “Teatro de Arena”, articulated instrumental (piano with extended

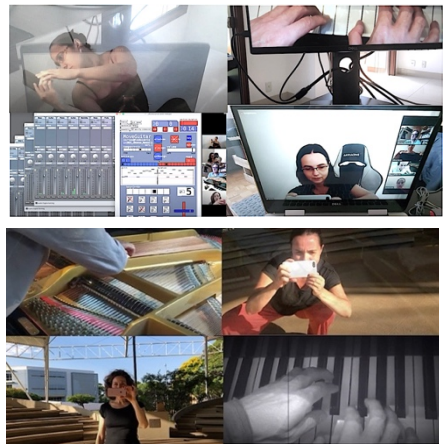


techniques) and environmental sounds with rhythmic patterns generated with the MoveGuitar. It resulted in a sound-layered structure similar to live electronic music.

Visits 15 and 16 follow the same approach as Visit 13: they took up gestural and body matrices from previous video recordings. In these two visits, Gatti and Andraus dance separately: performing two solos without meeting each other in person. After, their videos were mixed with those of the original recordings, evidencing the permanence of the previous choices - not only those referring to movement but, for example, clothes, hairstyles, and objects. In these two visits, especially on Visit 15, environmental sounds were predominant: wind, birdsongs, and sounds from dancers' movements. Nevertheless, on Visit 15, there are momentary overlaps of instrumental sounds (piano, flute, vibraphone with bow, and electric guitar solos). On Visit 16, we listen to punctual rhythmic patterns generated with the MoveGuitar. We highlight that on Visit 16, a new interaction between the two dancers began: one produced the sounds with MoveGuitar, and the other shot the movement with a mobile.

Visits 17 and 19 complements each other, promoting interaction between the two dancers (Gatti and Andraus) using their mobile for shooting and sound production. These visits maintained the original costumes and some seed of movements from the original video recordings but with progressive flexibility. It gave space to construct new gestures from the dance point of view from the contingencies imposed by the mobiles as technological mediation devices, objects, and new scenic situations.

Visits 20 and 21, which are also complementary to each other, were presented at the improv@CIRMMT<sup>9</sup> on March 15th, 2022. In a virtual and collaborative process, the artists participated in several complementary ways: dancing, performing, and video shooting and generating music with the MoveGuitar, the piano and the computer, remotely. The Pure Data program of *Jardim das Cartas* (see the previous section) was the host sound generative engine. It received Open Sound Control (OSC) messages from performers placed in Brazil, Canada, and Portugal through a VPN communication as described in figure 2. The complementarity of these two visits (named Anteverso and Verso) resides in the fact that, while visit 20<sup>10</sup> aims to show the backstage of the interaction, visit 21<sup>11</sup> presents the poetic version of the interaction.



**Figure 5: Mosaic of images from Anteverso and Verso, visit 20 and 21.**

### 4.3 Mixed Reality Performances

For the exposition at the UNICAMP Art Gallery, we developed two mixed-reality performances with musicians and dancers in telepresence and live presence within the exposition space

(see figure 3) with digital and computational sound and visual mediation. A dance ensemble, a live soprano sax, and remote musicians (piano and live computer music) integrate Visit 22<sup>12</sup>. A duo dance performance with live and remote musicians (piano and computer music) is Visit 23<sup>13</sup>.

The mixed reality orchestration of the two performances took place in a hybrid environment comprising different languages of dance, music, sound, video, poetic narration, mobile devices, and the two generative main programs. All these elements shared physical and virtual spaces promoting at the same time action among all performative agents interlacing each other.

A multimodal symphony embodied and virtualized, in which sounds, movement, and live/virtual images created expressive layers during improvisation in tune throughout the performance. The multimodal elements: sax soprano, piano, two generative computer programs, mobile devices in interaction, and recorded voices starred the sound reality in a horizontalized and rhizomatic interaction with the physicality of movements of dancers' bodies, live and virtualized ones. A duo and dance ensemble with 05 live dancers on the installation interacted with video projected on three screens.

Each video created and edited was composed in a direct relationship with Manzolli's four-letter poems related to the four elements of nature (water, fire, earth, and air) and which were propellers of the Jardim das Cartas project, see [1][2]. And for the mixed reality performances, we rescued these four elements within a dramaturgical proposal for dance improvisation in the installation. A draft script served only as a guide describing a

macrostructure of multimodal improvisation and the potential links between the communication network within the performers. Nevertheless, we explored the non-linearity and unpredictability of the dance and music improvisations.



**Figure 6: Mixed reality duo performance**

On Visit 23, the dance duo Gatti and Andraus interacting with each other enlarged the context developed in the previous visits (14-21): MoveGuitar app played by Gatti produced rhythmic patterns, and Andraus shot the movements sent to the projected screens (figure 6). We used the Zoom platform to establish a communicative bridge among performers introducing two virtual elements: the telepresence of Zamith's virtual piano performance from São Paulo, Brazil, and the virtualized and improvised sounds by Manzolli's telepresence run the Pd program (see the previous section) from Coimbra, Portugal. Both sound materials diffused on a quadraphonic-loudspeakers system generated sound sewing in such a musical improvisation took place in a hybrid and telematic way, such as a symphony enlarged in space.

In visit 22, two more sound layers included in the improvisation were: the live presence of Faleiros' sax soprano, who improvised along the sounds



created with the MoveGuitar played by Gatti and the dance ensemble.



**Figure 7: Mixed reality performance with live and remote musicians**

## 5. Discussion

Improvisation in mixed reality brings some interesting points regarding the exercise of body perception at the moment of action. Performers perceive the state of presence in the relationship to live and virtual environments, promoting the expansion of attention and anticipating movement production. Thus, their bodies act as vehicles of dialogic communication between two dimensions of presence (virtual and scenic). During the two mixed reality performances, the generative technology interacted with performers in three situations as follows:

- 1) dialogue of dance, music, and video projections: actions were extensions of the physical and virtual environments, and bodies producing movements were affected by video, sax improvisations, and sound generated in real-time. There were also merges of the screen

projections of virtual bodies with shadows of the physical bodies (see figure 7).

- 2) the bodies acted as extensions of mobile devices: gestures created with the MoveGuitar through accelerometer sensors of the phonecells performed as a digital music instrument. The force demanded by the dancers' hands and the impulses in the movement concatenation generated specific and unique sounds.
- 3) dance and music improvisations harmonic and inharmonic counterpoint: since relationships were unpredictable at each moment, improvisations with movements, piano, sax, and computer-generated sounds, allowed the performers to listen to different sound layers leading to different poetics of sound and movements.

Shortly, dance and music dialogued with the projected movements on the screen and the sounds recorded previously. Everything was connected: virtualities and realities generating kinetic energy where sound and movement happened as forces of virtual and scenic presences.

## 6. Conclusion

We presented *Jardim das Cartas*, a collaborative-creative process involving dancers and musicians. In the resultant generative and interactive installation, spectators and performers contemplate and interact with music and video generated by a layered network of digital material exposed in a virtual and live garden for multimodal interaction. This idea is an aspect of *Jardim das Cartas*

discussed in [11] when it is stated that any experience brought by artwork is always multimodal. It sustained by an argument on how visual modality influences the auditory processing of music. *Jardim das Cartas* is a generative and open work, as its final assembly takes place during an exhibition allowing simultaneous and remote participation of several performers. Moreover, *Jardim das Cartas* still opens new experiences in sound and movement. It recreates new sounds, gestures, and movement elements allowing new interactions among dancers and musicians. It rebuilds new environments inducing new interactions among performers and new perspectives in a trajectory of multitudes.

## Acknowledgments

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Dancers in the video clips: Adnã Alves, Andrea Albergaria, Cassiana Rodrigues, Clara Rodriguez, Daniela Gatti, Flávia Pagliusi, Gabriela Freitas, Kamilla Mesquita, Mariana Baruco, Marília Vieira, Milena Pereira, Paula Ibañez, Rafael Lemos, Stephanie Borges, Vania Pontes, and Vine Hernani; Live dancers in the installation: Rafaella Ferreira Costa, Maria Isabel Torres dos Santos, Nicolly Karoline Moreno Lapa, Isadora Alonso Faustino, Ana Luiza Gomes Przsiczy, Daniela Gatti, Mariana Baruco; Voices reading the poems: Andrea Albergaria, Joana Lopes, Mariana Baruco, Paula Ibañez, and Laiana de Oliveira (sprechgesang); Musicians: Alexandre

Zamith (live Piano), Beatriz Maia (recorded Soprano voice), Cesar Augusto Pereira (recorded flute), Fernanda Vieira (recorded vibraphone), Leandro Ligocki (recorded Electric Guitar), Jônatas Manzolli (recorded piano), and Manuel Falleiros (live saxophone); Computational systems development: Jônatas Manzolli (Pure Data implementation) and Guilherme Zanchetta (TouchDesigner implementation); Network support and computational assembly: Edelson Constantino and Guilherme Zanchetta; Research Groups PPG Performing Arts IA/UNICAMP: Intercultural Studies in Presence Arts and REDES Dance Group.

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## References

- [1] J. Manzolli, J. and M. B. M. Andraus, "Jardim das Cartas a Presence Ecology: a multimodal and dynamic flow in an installation," in

- Proceedings of the Artech 2021*, Aveiro, Portugal, doi: 10.1145/3483529.3483680.
- [2] J. Manzolli and M. B. M. Andraus, "Jardim das Cartas: an installation as a Presence Ecology," in *Proceedings of the Artech 2021*, Aveiro, Portugal, doi: 10.1145/3483529.3483770.
- [3] M. Hannula, J. Suoranta, and T. Vadén, *Artistic Research Methodology*. Peter Lang US, 2014. doi: 10.3726/978-1-4539-1308-6.
- [4] L. Anderson, "Analytic Autoethnography," *Journal of Contemporary Ethnography*, vol. 35, no. 4, pp. 373–395, doi: 10.1177/0891241605280449.
- [5] S. B. i Badia *et al.*, "The Effects of Explicit and Implicit Interaction on User Experiences in a Mixed Reality Installation: The Synthetic Oracle," *Presence: Teleoperators and Virtual Environments*, vol. 18, no. 4, pp. 277–285, doi: 10.1162/pres.18.4.277.
- [6] J. Manzolli, "ODE TO CHRISTUS HYPERCUBUS Creative process of a multimodal performance," in *Proceedings of the ARTeFACTo 2018*, Lisbon, Portugal, Nov. 2018, pp. 10–15.
- [7] J. Manzolli, "Multimodal Architecture of the Ode to Christus Hypercubes.," in *Proceedings of the GA2018*, Verona, Italy, Dec. 2018, vol. 1, pp. 252–266.
- [8] G. Deleuze and F. Guattari, *Mil platôs: capitalismo e esquizofrenia*, vol. 1, vol. 1, 6 vols. São Paulo: Ed. 34, 2012.
- [9] J. J. Gibson, *The ecological approach to visual perception*. New York, London: Psychology Press, 2015.
- [10] J. J. Gibson, *The senses considered as perceptual systems*. Westport, Conn: Greenwood Press, 1983.
- [11] B. Nanay, "The Multimodal Experience of Art," *The British Journal of Aesthetics*, vol. 52, no. 4, pp. 353–363, Oct. 2012, doi: 10.1093/aesthj/ays042, p. 353.
- [12] Miller. Puckette, "Pure Data: another integrated computer music environment," in *Proceedings of the Second Intercollege Computer Music Concerts*, 1997, pp. 37–41.
- [13] D. I. Iglesia, "The Mobility is the Message : the Development and Uses of MobMuPlat," 2016.
- [14] J. Freeman and A. V. Troyer, "Collaborative Textual Improvisation in a Laptop Ensemble," *Computer Music Journal*, vol. 35, no. 2, pp. 8–21, Jun. 2011, doi: 10.1162/COMJ\_a\_00053.
- [15] D. Trueman, "Why a laptop orchestra?," *Org. Sound*, vol. 12, no. 2, pp. 171–179, Aug. 2007, doi: 10.1017/S135577180700180X.
- [16] J. Manzolli and E. H. Constantino, "grainBirds: Evolutionary granular synthesizers distributed in Fog Computing," in *Proceedings of 18th Brazilian Symposium on Computer Music*, Recife, Oct. 2021.
- <sup>1</sup> Jardim das Cartas official channel: [https://www.youtube.com/channel/UCy2WzV0o-Viw\\_tFkO74pL\\_A](https://www.youtube.com/channel/UCy2WzV0o-Viw_tFkO74pL_A)
- <sup>2</sup> Jardim das Cartas official website: <https://linktr.ee/jardimdascartasoficial>.
- <sup>3</sup> Derivative website: <https://derivative.ca/>
- <sup>4</sup> TouchDesigner Tutorial: <https://www.simonaa.media/tutorials/daily-practice>
- <sup>5</sup> Visit 1: <https://youtu.be/AMNDXL70OSY>
- <sup>6</sup> Compilation of first visits: <https://youtu.be/eV3zjAgg5iM>
- <sup>7</sup> Visit 13: <https://youtu.be/ldKMXLMDcVU>
- <sup>8</sup> Visit 14: <https://youtu.be/JJ9-AYeIWrm>
- <sup>9</sup> improv@CIRMMT - Special Online Edition: <https://youtu.be/YclfZtDTHcU>
- <sup>10</sup> Visit 20: <https://youtu.be/xQCD5oigeNg>
- <sup>11</sup> Visit 21: <https://youtu.be/0cd1N1AK4xM>
- <sup>12</sup> Visit 23: <https://youtu.be/x0zMt25yhal>
- <sup>13</sup> Visit 22: <https://youtu.be/VQJvuHcsy-4>