

Generative Video Art: The Computer as Oracle

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Abstract

The article analyzes artistic practices in the creation of generative video art, highlighting two models: the use of artificial intelligence (AI) to generate images through textual description and the creation of videos with vector-based systems like OpenGL. By differentiating these models, it defines the computer as a central tool capable of managing crucial stages of the creative process. Exploring concepts of generative art, creative processes, and computational art, the text reflects on the technical and ethical aspects of the relationship between artist and machine. It also considers the computer as an “oracle,” offering practical and aesthetic solutions throughout the creative process. The article further proposes an analysis of the field of generative video art as a subjective aesthetic discourse, rooted in the sublime, that challenges traditional audiovisual grammar, establishing itself as a contemporary artistic practice.

Keywords: generative video art; creation processes; generative computer systems; programming; interactivity.

Introduction

This article aims to analyze artistic practices involving processes of generative video art creation. Its purpose is to systematize how we operate procedurally with the two main models of generative creation: image generation through textual descriptions (AI) and video creation using OpenGL-based vector technology systems¹.

As a proposal for a reflective methodology, the present study gathers information and documents from artistic processes for systematic reviews of creative procedures. The method consists of engaging with our own artistic practice, comparing, contrasting, stress-testing, and reviewing ideas, decisions, and procedures in order to better understand the nature of the creative processes and the results in the works.

¹ OpenGL (Open Graphics Library) is an application programming interface widely used for rendering 2D and 3D graphics.

This methodology is also grounded in the analysis of autonomous and restrictive processes, in which the artist, far from seeking absolute control, acts in the organization of repertoires and in the establishment of orders that structure the creative flow.

The materials used in this article comprise an archive of generative videographic works by Alexandre Rangel, with technical and ethical implications concerning the artist-machine relationship, understanding the computer as an “oracular” instance that offers aesthetic solutions during artistic process.

The study materials also include algorithmic systems and workflows that prioritize unpredictability and departure from prior intention. Thus, the reflective methods employed in relation to generative video art serve to investigate and verify a possible subjective aesthetic discourse, grounded in the sublime, challenging traditional audiovisual grammar by merging the creative process with the result of the work.

For the subsequent differentiation of the two models of generative creation used in this work, we organize and interpret a line of thought in generative video art in order to define the machine tool, or the computer, as an important, though not the only, instance capable of centralizing important stages of the creative process.

Within contemporary generative processes, it is possible to establish creative traces between artist and machine by exploring videographic elements, sounds, textures, and conceptual forms. Creative interactions within systems presuppose a kind of complicity with the artist. Already attuned to autonomous processes, the artist proposes a game with the machine, seeking a possible response to the multiple variables input into the system by the artist.

It is within this relationship between artist and machine that unpredictability potentially becomes a creative act. Accepting the intervention of autonomous systems based on generative creation is an essential habitual process for computational artists in this field. The use of rules and procedures, such as the use of images, geometric forms, and sounds, feeds this kind of game between the machine and the person seeking to operate it.

In these generative processes in which we operate, we position the machine, or software, or autonomous system as an instrumental instance capable of organizing an artistic workflow and creating repertoires of audiovisual materials.

The results obtained do not necessarily reflect a finished work previously envisioned by the artist. The purpose is to explore its potentialities, its unpredictability, and a possible escape from the artist’s clear intention of control.

Still regarding the results of this process and its artistic expectations, there is an understanding that a work generated by autonomous processes requires a broader understanding, since the possible result may not be satisfactory in the first interactions. Although the ideal is not fully achieved, several attempts are made within generative processes. In certain works, there is no specific objective, but rather multiple paths to be explored, in which dynamism

arises from the absence of a single answer, revealing new directions and possibilities with each unfolding (Roscoe, 2017).

When we recognize that the result does not need to correspond to the expected objective, the focus of the process falls on the procedures, on the paths and directions that may be followed together with the machine. In this way, generative processes become more dynamic, and their results become intertwined with their own creative process.

It is important to emphasize that systems and software possess a certain autonomy, but creative processes themselves do not. Just as there are autonomous commands, there is also an effort by the artist to restrict certain actions of the machine during the creative process. It is through this restriction that the artist defines the concepts of the work, the possible interactions with other artistic languages, the experimentations, and their hybridizations. However, this does not mean that there is excessive control, but rather a way of organizing the creative process, in a kind of dance, or ritual, with the machine. Ronaldo Entler (2000) observes that the role of the artist is to organize a repertoire and establish an order, arranging the artistic elements and concepts in such a way as to structure them within an organized set in order to produce art.

Therefore, the generative artistic process may, or even should, incorporate restrictive actions in order to order and structure the entire creative set. The term 'control', often associated with rigid connotations, takes on a different perspective here within a creative context.

From the perspective of computability theory, an oracle machine is used with the aim of investigating decision problems. This expression appeared in Alan Turing's 1938 dissertation to designate the solving of problems through a single operation. Although it contains a mathematical definition that may be associated with the connotation of a system, Turing turns calculation into a possibility more closely oriented toward the divine and the non-computable.

In antiquity, oracles were places where divine answers were sought, or entities from whom oracular responses were requested. Whether in the search for mathematical or divine answers, one observes a singular human need to consult on questions that cannot be resolved alone, presupposing a game, or a relationship of trust and partnership.

Commonly used in computing and in science in general, the expression "black box" is a concept used to define technologies or systems whose internal functioning is complex or unknown. It may also be used as an analogy for human or institutional functioning. Bruno Latour (1998) draws on this concept to situate science as a two-sided instance, in which one side is in constant change and evolution, while the other is presented as complete and immutable, with facts and machines established within a black box (Latour, 1998).

In *Towards a Philosophy of Photography*, Vilém Flusser uses this concept to reinforce another term: the apparatus, as a creator of cultural objects through which we see our world (Flusser, 1985). For Flusser, the photographic camera is his example of an apparatus and, as

such, is endowed with intelligent automation so that its operator may draw out the most potent path.

The machine, or apparatus, is “programmed” or “pre-written” (Flusser, 1985, p. 23) so that its functionary-operators devote themselves to photographs, since “the potentialities contained in the program must exceed the functionary’s capacity to exhaust them. The competence of the apparatus must be superior to the competence of the functionary” (Flusser, 1985, p. 24)².

The analogies presented here between machine, oracle, and apparatus also serve to propose the conceptual networks necessary for understanding the complexities of generative video art. Thus, it is possible to connect different practices and modes of thought, configuring critiques and reflections on the art of moving images produced in contemporary times.

Models of Creation in Generative Video Art

In any system, software, or computational technology, there must be a structure that houses the elements that make up its operation in terms of input, processing, meaning language and programming, and output. In the present article, we will refer to this structure as a model.

It is necessary to highlight two models of image and form creation within the generative process. The first is the model of graphical programming language, using visual programming with nodes or programming code to create graphic vectors, interactive animations, sounds, and 3D applications. The second is the commercial model of so-called artificial intelligence systems, used to create synthetic images from a simple text command or reference images.

In the first model, it is possible to interconnect different parameters between input and output in order to create visual and sound elements, such as GLSL for shaders, vector graphics, or frameworks such as OpenGL, WebGL or DirectX. Still within this model, it is possible to use programming languages, such as Python or Java, to generate creations. Examples of this model include the software platforms `cables.gl`³, Processing⁴, and TouchDesigner⁵.

These platforms or creative environments allow generative art to be created through commands and interactions with cameras, programming code, and sounds in real time. The artist can define the aspects of the project and control the different parameters inserted into the nodes or into the programming code. The raw material, so to speak, is the vector graphic, which, when combined with shader effects, noise, sound frequencies, blurs, and other elements, makes it possible to manipulate geometric forms, whether in motion or static.

Due to its capacity to create images from mathematical calculations, generative video art may find in this model its most fertile ground for the creation of works of art. Its libraries

² Translated into English by the authors.

³ Available at: <https://cables.gl/>.

⁴ Available at: <https://processing.org/>.

⁵ Available at: <https://derivative.ca/>.

include digital data visualization and processing, musical composition, networks, 3D file export, and electronics programming. Moreover, because this model does not necessarily use databases containing other preexisting works, the ethical question of generative art emerges here in another sphere, proposing paradigms such as the notion of authorship and the definition of an artistic discourse or statement.

The artistic propositions of this model serve as more complex works and interactive installations for students, artists, designers, researchers, and enthusiasts. Several platforms within this model, such as Processing and cables.gl, become alternatives to other restricted tools with expensive licenses, while remaining accessible to the public because they are free and open source.

The second model is based on commercial neural networks trained on vast databases, including images, videos, texts, and other materials, in order to produce synthesized examples from these databases through text commands or prompts⁶.

Known as a diffusion model⁷ and commonly associated with the term artificial intelligence (AI) or LLMs (Large Language Models), this model is used to generate static synthetic images or short videos copied from the combination of thousands of patterns drawn from other images in the database. There is usually no real-time control of its commands, nor any possibility of interactivity, but only direct responses to the specific prompts entered. The most common systems within this generative model are ChatGPT, Sora, Stable Diffusion, DALL-E, and Midjourney.

Whereas in the visual programming model the artist is able to structure a creative process through several stages, the AI model restricts this capacity to a few procedures, such as editing the prompt or unfolding the formats and sizes of the generated material.

According to Regilene Sarzi-Ribeiro, this rapid and unsystematic manipulation of images is fostered by the industrial complex of artificial intelligence and is configured as a mechanism for sustaining data capitalism. By encouraging the use of controlled free-access interfaces, it operates through the expropriation of audiovisual repositories in order to enable aesthetic reconfigurations and the recombination of imagetic and sound matrices (Sarzi-Ribeiro, 2024).

It is worth emphasizing that there is still debate regarding this generative AI model in relation to the issue of copyright over the images used to train these systems. The works, whether paintings, photographs, graphics, or other forms, that are used in the databases of these systems belong to artists, designers, and photographers. Such works were taken and incorporated into the system without the prior knowledge or consent of these artists.

⁶ A prompt is a command-line interface where you can input commands directly into a system or software to run tasks, manage files, configure settings, and perform other operations like image and sound generation.

⁷ A generative model utilizing diffusion processes to create images, sounds, or other data types, capable of producing highly detailed imagery for visual content creation.

By using both models, it is possible to establish a generative creation process in which these models exist in a symbiotic relationship, without imposing a burden on either the artist or the work understood as an artistic apparatus. In other words, images that have already been created and finalized may be used as a basis for the work of generative video art.

Before that, however, it is necessary to better situate generative art as an unfolding or hybridization of video art, more specifically of video as both medium and concept. By considering audiovisual generative art, its processes, and its works within the field of video, it becomes possible to identify certain similarities in the techniques and aesthetics shared by both.

It is in Christine Mello's (2008) definition of "extremity," which identifies video and its various forms as a conceptual expansion, that we seek an approximation with audiovisual generative art. This liminal character, both in video and in generative art, exemplifies the hybridity that constitutes these languages, as well as the constant displacements proposed by such artistic practices. Here, we observe a possible paradigm concerning the definition of the formal aspects of video language. Identifying such formal aspects, assuming that they exist, may be a trap within the theories and concepts of video art, since authors such as Arlindo Machado (1993) understand video as a set of 'expressive resources, rules of use, and combinations of imagery elements'⁸ (Machado, 1993, p. 10). Décio Pignatari (1984) uses the expression *signagem*, a term that refers to signs or is susceptible to a signographic element with multiple meanings in a sense closer to semiotics within television discourse.

In *Video e Sua Linguagem* (1993), Machado also raises questions about the use of the term "language." According to the author, the term is frequently employed to standardize audiovisual works, without, however, encompassing the complexity and breadth of the vast set of specificities that characterizes video. Video is configured as a process of hybridity that draws on "[...] distinct signifying codes, partly imported from cinema, partly imported from theater, literature, radio, and, more recently, computer graphics [...]"⁹ in order to create works that may or may not be endowed with meanings.

The resources, expressive elements, and commands used are constituent parts of video; however, when recombined and rearranged, they end up representing other possibilities for works (Machado, 1993). Thus, it is possible to identify constituent aspects and elements of video, but one cannot determine that they serve as a grammar of their own or as a formal language. These *signagens*, both in generative art and in video art, enrich certain definitions by proposing a common point: their constituent elements do not necessarily sustain their definitions, since there is a vast system of specificities that may be used. It is within this more chaotic process that generative video art operates with its different characteristics, as an extremity capable of connecting distinct discourses within the same work (Mello, 2008).

⁸ Translated into English by the authors.

⁹ Translated into English by the authors.

The practice of using the diffusion model for remixing within vector-model systems makes the generative process more robust from the standpoint of stages and formal complexity. There is an established point of departure in which the image generated through prompts is situated within a particular style and more clearly defined characteristics. This requires the artist, throughout the process, to take these elements into account so that the remix remains consistent with these initial definitions.

Vector-model systems are, for the most part, algorithms that operate with a certain degree of autonomy in their processes, modifying parameters and recreating forms, textures, sounds, colors, and other elements. Thus, it is essential for the artist to understand this relationship and use it favorably within the creative process.

This understanding of the algorithm's autonomy can provide a dynamic and unique process, since each adjusted parameter gives rise to new creative possibilities. As a result, each audiovisual form produced will be different and often unexpected, regardless of whether the artist judges it positively or negatively.

Within this interaction between the algorithm's autonomy and unpredictability, an idea of interruption and intervention emerges, shifting control toward the artist. It is at this point that control manifests itself more objectively, even if the artist does not consciously seek it. As if it were a kind of creative game, the machine, programmed to respond to any input commanded by the artist, delivers a result that should not necessarily be considered a final work, but perhaps one further stage in the process.

Here, it is possible to observe that generative video art is an open work within a process in constant continuity. After generating a video result, the artist may return to the creative project and continue playing with the machine in order to obtain other images, textures, colors, noises, distortions, sounds, and other elements.

Due to the intrinsic materiality of the electronic medium, generative video art works that use the two models of creation are laden with subjective and abstract meanings. They may represent a process that moves toward the unrepresentability and nonlinearity of artistic creation, that is, there is no formal relationship subordinated to the real. To understand this possible abstract, or nonrepresentational, discourse in generative art, it is necessary to propose a differentiation of this materiality based on Patrícia Silveirinha's (1999) text.

Silveirinha uses Edmond Couchot's concepts of the "morphogenetic image" and the "numerized image," as well as the distinction between their origins: electronic and digital media. The morphogenetic image seeks to impose an interpretation of the visible world, being constituted by mechanical, optical, and electronic devices that capture the light reflected from an object that already exists before its image, that is, photography. These "systems of figuration" are responsible for reproducing our world and, at times, representing the real (Couchot, 1988, p. 82 *apud* Silveirinha, 1999, p. 16).

The pixel is the minimal unit through which a digital image is constituted, a numerized image that “does not translate any preexisting reality, but makes visible logical and mathematical models, abstract symbols”¹⁰ (Couchot, 1988, p. 82 *apud* Silveirinha, 1999, p. 16). According to Couchot, this digital image possesses a mathematical, or numerized, capacity through which it is possible to create, control, and expand pixels in order to form images and other abstract forms (Couchot, 1988, *apud* Silveirinha, 1999).

The concept of the numerized image can be applied to the vector-based or diffusion-based generative creation model, in which the image is formed from mathematical geometric structures generated through calculations and programming language.

This representational character of the morphogenetic, or electronic, image is opposed to the numerized image, which seeks a vocation for simulating other realities through procedures specific to electronic media. The numerized image operates “oscillating between the real and the imaginary, neither object nor image, composed of infinite virtualities; a universe in which space, but above all time, are of another essence”¹¹ (Couchot, 1988, p. 82 *apud* Silveirinha, 1999, p. 16).

We take as an example the concept of “incrustation,” which Couchot uses to define the symbiotic effect between the morphogenetic image and the numerized image. Incrustation is the electronic insertion of fragments of a given image, an exterior image, into another image, an interior image, functioning as a window onto another world (Couchot, 1988, p. 82 *apud* Silveirinha, 1999, p. 16).

This definition may also serve the generative creation process that uses AI and vector-based image creation models. In this sense, it is possible to use an image generated within the database model to incrust its fragments into another process or vector image, thereby generating a new creation.

Since generative processes allow for exponential expansion with each command given by the artist, Couchot’s process of incrustation serves to give contours to this creative practice. At the same time, it establishes a praxis in relation to the ethical paradigm of creating and using images generated from databases containing works by other artists.

It is evident that the use of third-party works, or fragments of such works, without proper authorization or consent cannot be relativized or treated irresponsibly. However, it is necessary to carry out this procedural observation of the available operators and tools.

We will next present some generative video art works by Alexandre Rangel. A multimedia artist, software developer, and PhD in Visual Arts from the University of Brasília (UnB), Rangel has developed in his work a series of interactive video artworks with geometric visuals and preexisting images that are repurposed within the generative process. In these examples of

¹⁰ Translated into English by the authors.

¹¹ Translated into English by the authors.

generative art, different software programs were used in the creation process, corroborating the idea that the available tools should serve the process and the artist.

ASCENSION (2021)

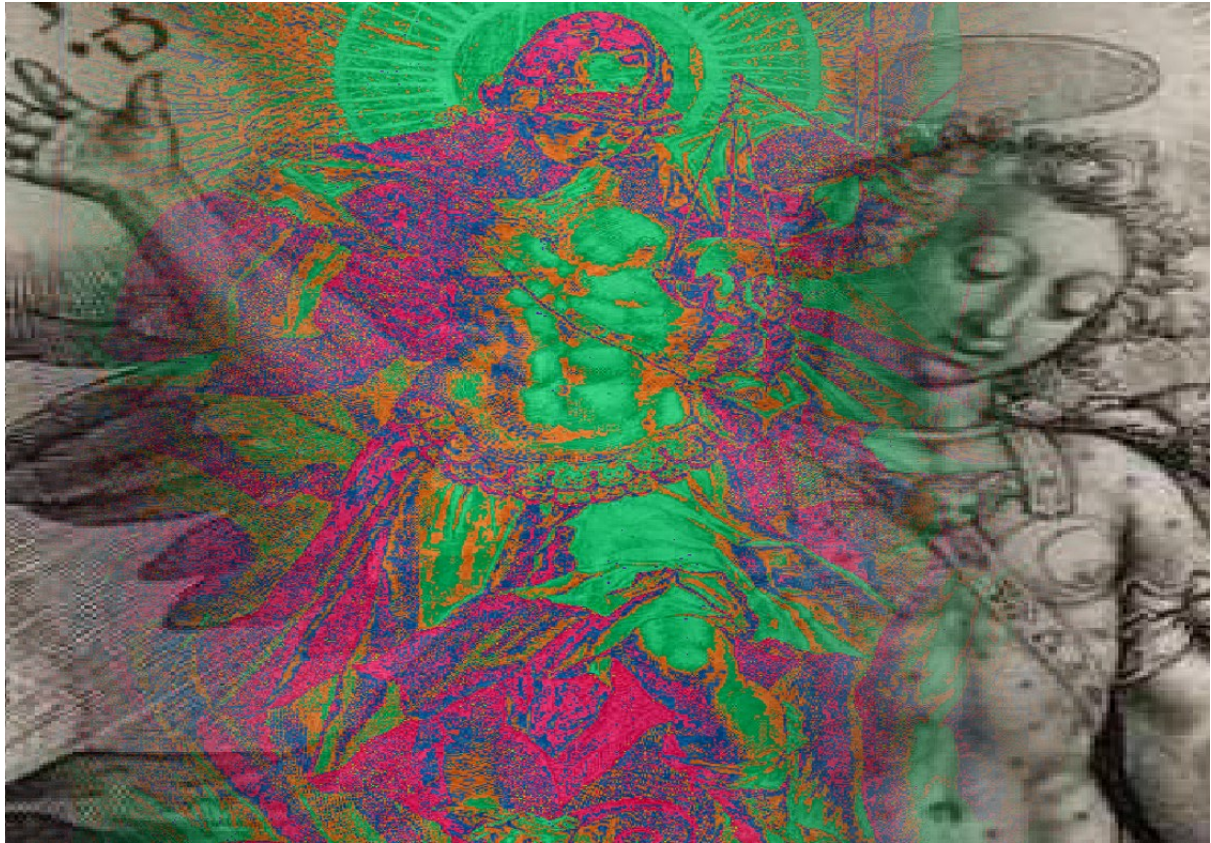


Figure 1 – *Ascension*, 2021, Alexandre Rangel, generative video art
(source: <https://www.fxhash.xyz/generative/1596>)

Using images under a Creative Commons (CC)¹² license, Rangel created the artwork *Ascension* (2021) from works belonging to the open gallery collection of the Rijksmuseum Amsterdam¹³. The creation process of *Ascension* consists of a remix of images collected from the museum's website and generatively overlaid through the Hydra platform, with glitch effects and hypercolorization. In the work, images with religious motifs move vertically in overlapping layers and with color saturation.

¹² Non-profit organization that manages licenses so that other creators can distribute and use artistic works according to the conditions of their creators. It is an alternative to all rights reserved that allows the use of works, without harming the creative chain.

¹³ The National Museum of the Netherlands is located in Amsterdam. It is dedicated to arts and history and has a collection of Dutch historical paintings in addition to a collection of Asian art. Available at: <https://www.rijksmuseum.nl/>.

Hydra¹⁴ is free online software for creating videos and visual effects in real time through the JavaScript language. With Hydra, it is possible to create real-time compositions by processing forms, colors, movements, and visual effects that react to internal stimuli, such as sine-wave oscillation algorithms, or external stimuli, such as audio.

SOPA PRIMORDIAL (2023)

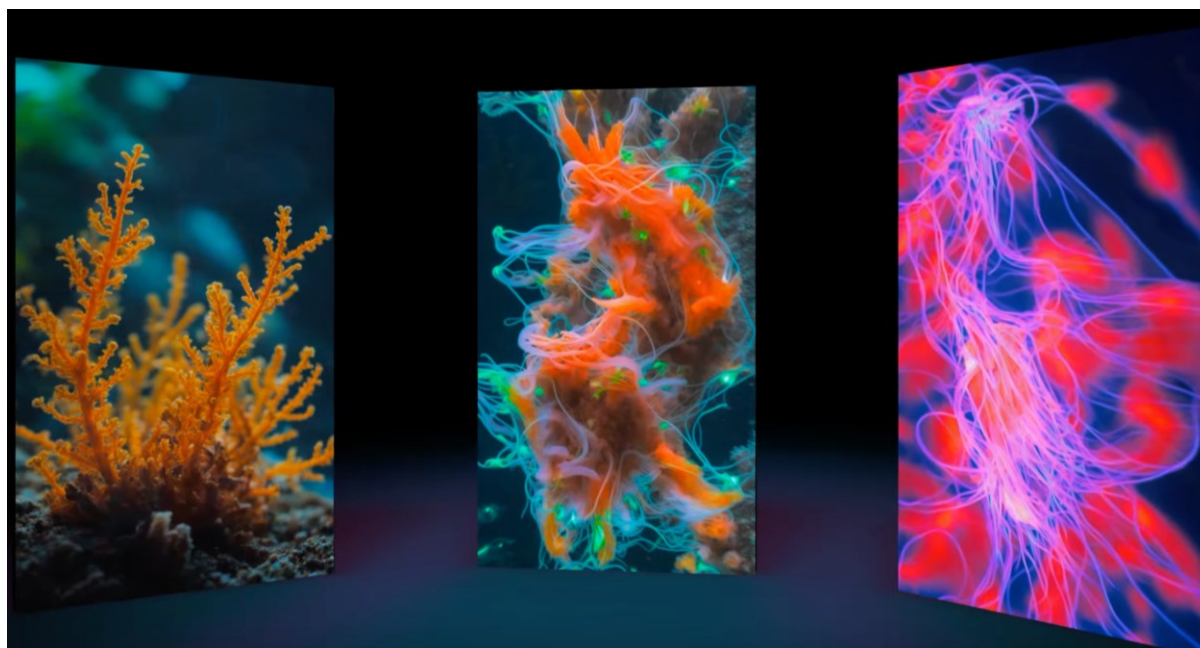


Figure 2 – Triptych assembly preview of the artwork *Sopa Primordial*, 2023
(source: <https://alexandrangel.art.br/sopa-primordial.html>)

In the work *Sopa Primordial (2023)*¹⁵, the artist proposes an examination of the possibilities arising from interactions with images created by the AI model in order to transform these images into other poetic objects. In this process, Rangel uses an AI model that generates 400 moving images from prompts through the Stable Diffusion¹⁶ system.

The generated images are inserted into the generative software TouchDesigner, which creates the effects and movements of the final video art. As a result, we have a created image that moves through various transitions, simulating a water substrate and fusions among the base videos, thereby giving greater cohesion to the composition.

TouchDesigner is visual programming software used to create videos, forms, textures, and 3D vectors in real time. It is frequently used for artistic installations and live video mapping. With a visual interface and a node-based workflow, the creation process in TouchDesigner

¹⁴ Available at: <https://hydra.ojack.xyz/>.

¹⁵ Artwork featured in the 'Ocean Decade – I National Cryptoart Exhibition,' part of the 2023 program at the Centro Cultural Banco do Brasil, Rio de Janeiro (CCBB RJ).

¹⁶ Available at: <https://stability.ai/stable-image>.

requires the artist to connect blocks of visual and logical functions in order to generate various effects in the image.

In the creation of the sound for *Sopa Primordial*, the software Sonic Pi¹⁷ was used, a live coding programming environment for the creation of sound textures.

THE FABRIC OF TIME AS CONTEMPORARY RUINS (2022)

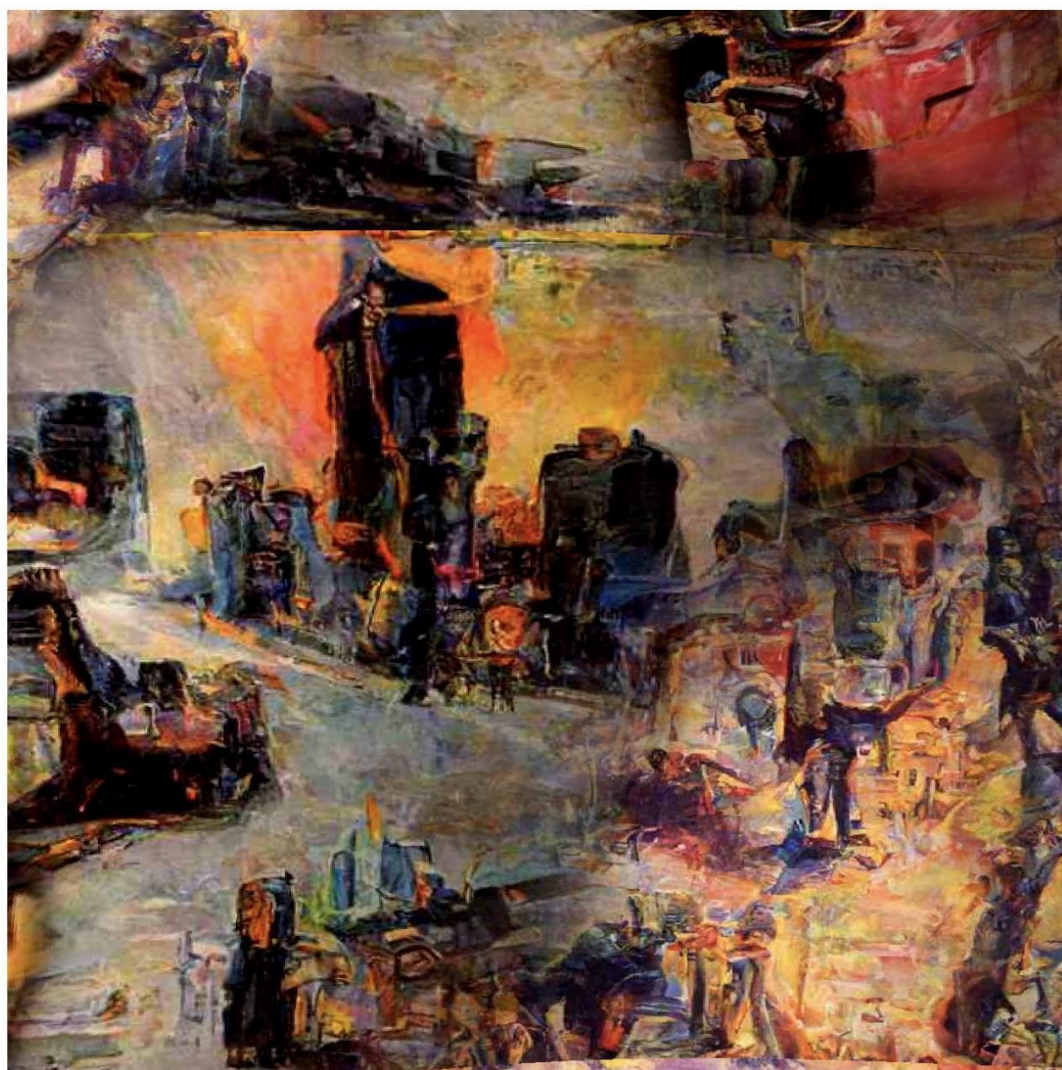


Figure 3 – *The fabric of time as contemporary ruins* (2022), Alexandre Rangel, video art (source: <https://www.fxhash.xyz/generative/slug/the-fabric-of-time-as-contemporary-ruins>)

The work *The Fabric of Time as Contemporary Ruins* (2022) uses the same input technique as *Sopa Primordial*, in which the images are also generated by Stable Diffusion, although their remixing is carried out through code using Hydra. For the sound design, Rangel

¹⁷ Available at: <https://sonic-pi.net/>.

used a virtual modular synthesizer called VCV Rack¹⁸. The sound creation is produced from oscillators and filters generated by virtual module sequencers and emulators of physical modules.

ESCULTURAS QUÂNTICAS (2023)

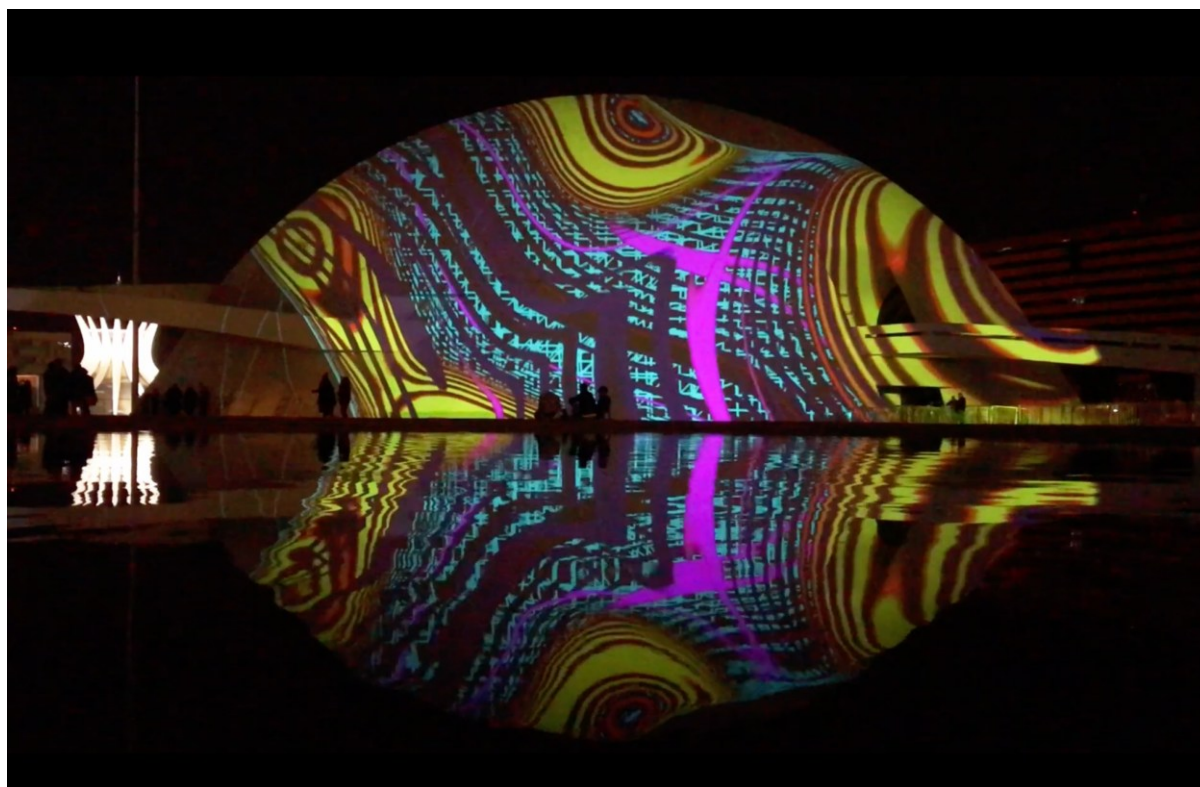


Figure 4 – *Esculturas Quânticas* (2022), Alexandre Rangel, generative video art
(source: <https://www.alexandrangel.art.br/esculturas-quanticas.html>)

As a final example of Rangel's model of generative video art, we have the work *Esculturas Quânticas* (2023)¹⁹. This is an interactive work that explores infinite possibilities of interaction between the body and virtual sculptural matter. Each participant, by interacting with the system through the body, creates infinite possibilities for sound and visual transformations. The forms developed by the system refer to quantum field theory, which describes the virtual positioning of particles through the influence of the observer.

Esculturas Quânticas has a creation process that differs from the examples above because it does not include a stage of image generation through the database-based diffusion model. The interactive work develops solely within the vector model, based on geometric forms

¹⁸ VCV Rack consists of multiple interconnected modules used to synthesize sound or noise. It utilizes modules and mixers, such as VCOs and LFOs. Available at: <https://vcvrack.com/>.

¹⁹ *Esculturas Quânticas* has been exhibited at various venues and galleries, including Centro Cultural FIESP (2022), Museu Nacional da República – Brasília Mapping Festival (2019), and LLUM BCN – Festival D'Arts Lumíniques - Barcelona (2020).

in the systems `cables.gl` and Blender²⁰, also using node-based programming and visual resources similar to those of TouchDesigner and Hydra.

This work is presented here as an example to elucidate a more conventional model of generative video art creation. Vector-based generative software and systems are capable of creating forms or sculptures solely through the numerized image, without necessarily requiring reference to another image.

As previously discussed, the results of generative processes do not always favor a faithful representation of the real or of a preexisting digital, or morphogenetic, image. However, this type of process, as a possibility for emulating and suggesting other worlds, makes the generative work and its results as powerful as any other procedure.

It is worth emphasizing that the artist does not need to hierarchize the creation processes discussed above, nor assign greater or lesser value to them. The differentiation proposed here serves to reinforce the various possible paths and the enhancement of the use of available tools.

In *Esculturas Quânticas*, the forms, movements, and strong colors, projected onto the supports, large buildings, and façades where they were exhibited, create a fantastic, magical environment with a visual and sound atmosphere distinct from the realistic representation of our world. This final example fits within a freer aesthetic proposition as a creative process and even as a possible discourse, or statement, of generative art in general.

The vast majority of Rangel's works are displayed on online platforms for distribution and commercialization, such as `fx(hash)`²¹. On these platforms, the visiting user can choose a base work and, through the platform's own system, generate a token, that is, a work with unique audiovisual characteristics.

Generative tokens are small packages of code intended to display generative video art. Depending on what the artist intends to express, these tokens can be generated by the visiting user until a satisfactory result is found and acquired using the currency corresponding to the system's blockchain, such as Tezos or Ethereum.

Based on the understanding of the pixel as a numerized language, one may consider that generative video art is devoted to a more abstract and subjective discourse, in which the creation of an alternative universe, with new signs and symbols, becomes possible. Works of generative art can form a network of experiences in which the sublime involves immaterial images or the very impossibility of representation.

This characteristic of unrepresentability constitutes a point of approximation between generative art and the notion of the sublime. In *Lessons on the Analytic of the Sublime* (1993), Lyotard uses the ideas of Kant and Edmund Burke to point to the aesthetics of the sublime as

²⁰ Available at: <https://blender.org>.

²¹ `fx(hash)` is a platform that allows generative artists to sell generative artworks using blockchain technology.

a sensitive element characteristic of modernity that can be applied to abstract art. In this way, the sublime is a force resulting from the friction between imagination and reason, that is, it represents the attempt of the imagination to elaborate and express responses to the stimuli of what is being experienced (Lyotard, 1993). For the philosopher, art does not seek a commitment to representing what is beautiful or real. Works of art should not concern themselves with the rational or with the rhetoric of logical understanding. The sublime is an escape from this representation and the pursuit of a more subjective aesthetics, with other possible propositions and combinations.

By conceiving and creating a quantized and numerized image from the pixel, for example, the process directs the relationship between understanding and artistic expression toward an aesthetics of the sublime, that is, toward abstraction and sensoriality, where notions of time and space may transcend everyday perceptions. If we admit that, in audiovisual generative art, the pixel is a language, then the sublime, the abstract, and non-intentionality may also be interpreted as discursive elements within this medium.

The invitation to immerse oneself in a generative process and work is, therefore, an invitation to imagetic fragments, to the dimensionalities of forms, to the simplicity of movements, and to the noises of a specific sound frequency.

The notion of the aesthetics of the sublime, as formulated by Lyotard (1993), may also be applied to generative video art as a form of immaterial art that seeks to break with the visual coherence typically pursued by cinema and television. This videographic vocation, which prioritizes a subjective, abstract, and sublime experience, is explored here in order to give broader contours to the discursive questions of generative art.

It becomes possible to bring audiovisual generative video art closer to the concepts present in video art and to reflect on this practice within the postmodern context. It is observed that the potentialities of this procedure, grounded in unpredictability, non-intentionality, and the unrepresentability of the contemporary world, constitute elements of creation in which process and work intertwine and validate each other as artistic practices.

The search for a language of its own in generative art, as in videographic arts, is not sustained by a formalism that assigns it a fixed place within the artistic field. Generative art proposes a language as a point of departure for its procedures and creations, but it does not adopt it as a final definition. Due to its chaotic and entropic nature, the works resulting from generative art do not follow commitments to the audiovisual grammar of cinema or television.

The rules that guide generative processes are applied in real time, in the service of the process and of the imagetic and sound effects of that instant. The algorithm operates within the poetics of the visible and within the dynamics of creation between artist and machine.

Thus, rather than establishing a relationship between generative video art and video art, it is possible to conceive of it as a videographic unfolding that shares characteristics and

discourses that interconnect, overlap, and consolidate themselves independently of any previously established formalism.

The Computer as Oracle

In addition to the artistic relationship between the generative models discussed above, it is necessary to emphasize the constant intersection between artistic procedures and technical procedures specifically oriented toward the languages of the technologies and systems used.

These practical intersections correspond to the act of engaging closely with a recent technology or language in order to operate it satisfactorily and thereby initiate an artistic process. This comprises a series of stages, such as reading documentation to understand these technologies, acquiring and testing hardware, creating integrated boards, components, and other activities inherent to computational art practices.

Of course, a musician who masters an instrument is also constantly developing techniques such as arpeggiation, for example; likewise, a watercolor painter who seeks to adapt to new digital tools is equally engaged in technical development. However, in computational art there is the specific feature that the tool-based support is often of a different nature, with its own system language or a hybridization of its physical components, which makes the relationship with the artist more complex and time-consuming.

Machado (1997), drawing on Flusser, calls attention to this relationship when reconsidering how technically and computationally proficient the artist must be in order to develop works. In other words, how much knowledge of programming and electronics is necessary to produce a generative work in Python using components and boards such as the Raspberry Pi?²²

One possible solution would be the formation of a community composed of technicians who possess knowledge of these languages and artists interested in computational art:

Artists, in general, do not master scientific and technological problems; scientists and engineers, in turn, are not familiar with the intricate complex of motivations of contemporary art. Together, both can overcome their respective deficiencies and contribute to recovering the ancient Greek idea of *téchne*, which encompassed both technical invention and artistic expression (Machado, 1997, p. 9).²³

Once this relationship of knowledge exchange is established, it is possible for such technologies to become even more accessible, and for the creative process itself to flow more effectively.

²² They are affordable, single-board mini-computers with integrated components that connect to a computer monitor or television and use a standard keyboard and mouse.

²³ Translated into English by the authors.

This issue of technical knowledge is important because we frequently need to deal with frustrations within the generative creative process, whether because of trial and error or dissatisfaction with the results. Thus, it is beneficial to recognize that there are difficulties specific to computational art and to find solutions that allow one to remain within the creative process.

Operating under the premise of the black box, the objective of video art is to explore the mystery of internal processing in order to generate the sublime. The methods of creation become rituals of partnership in which the unexpected validates the work, merging technique with the technological mysticism of consultation. Using hybrid materials, the contemporary artist accepts the autonomy of software as a game of trust, consolidating a practice in which the machine's response redefines the very concept of authorship.

On the other hand, the computer, as a machinic tool that can centralize generative creative processes, equipped with systems and other peripheral devices, may also be perceived as an oracle.

Alan Turing's oracle machine (1938), capable of solving a problem outside mathematical logic, fits within generative video art by highlighting the computer as an integral part of the creative process. What the artist seeks in generative procedures within software is nothing other than a network of aesthetic solutions available for selection.

The rhetoric and messages communicated during the creation of generative video art through forms, colors, textures, and movements are artistic urges and desires submitted to algorithms that may generate unexpected responses.

This conception of the computer as an oracle in generative video art exposes the centrality of the creative process within a network of unpredictable aesthetic solutions. The responses or inputs that the artist seeks and needs in the process may be found in its algorithms. The oracle, as system or software, acts as a possible mediator of the artist's subjective desires, encoded by the machine and capable of generating complex visual responses.

It is possible to establish this relationship between the oracle machine and generative video art as a search for aesthetic solutions that transcend the logic of a linear creative process. Through procedures of algorithmic consultation with the so-called oracle, the artist receives subjective responses from a system that may be understood as a collaborative entity. These responses, in the form of visual materials, textures, and movements, are created and processed by this entity which, like ancient oracles, may translate the artist's human aspirations and longings into artistic works.

It is also worth emphasizing that this multimodal relationship in generative video art establishes possibilities for new semantic dimensions or audiovisual compositions contained within the spectrum of the two models: AI, meaning LLMs, or vector graphics. These algorithmic materials or inputs allow the digital "oracle" to create paths in which unpredictability is the essence of this generative aesthetics.

This potentiality is consolidated through real-time co-creation and may define new artistic processes, making the creative flow more continuous, fluid, adaptive, and less linear. Here, the artist is able to transform the oracle, or Latour's "black box" (1998), into a kind of reflective mirror of the artist's desires. It is a connection between technological complexity and the human longing for the artistic sublime.

Mikel Arbiza Goenaga (2020), in his article "A Critique of Contemporary Artificial Intelligence Art," argues that the rejection expressed by those who oppose computational generative practices stems from the belief that these creative processes are mere artistic simulacra linked to human modes of thought and, therefore, could not be carried out through systems and software (ARBIZA, 2020).

For the author, the issue must be taken into the field of artistic potentialities, while he also reiterates a classic ethical discussion concerning authorship or ownership of the work, as well as the importance of the process over the final product, or artwork (Arbiza, 2020).

Final Considerations

The proposed differentiation between the visual programming model and the AI model demonstrated distinct operational artistic capacities, highlighting their differences, such as greater control over parameters and real-time interaction, on the one hand, and operations based on direct responses to prompts, on the other. Nevertheless, the possibility of a symbiotic relationship between these models is perceptible, allowing AI-generated images to be used as raw material within remix procedures in vector systems.

The analyzed works by Rangel, such as *Ascension*, *Sopa Primordial*, and *Esculturas Quânticas*, support the premise that tools should serve the generative process. It may be reaffirmed that the artist does not hierarchize methodologies, but rather enhances them according to the needs of the process.

It is possible to conclude that understanding the computer as an "oracle" is fundamental to the poetics of the visible in contemporaneity, as it allows the artist to operate with the unknown or with unpredictability without necessarily renouncing the ability to organize, restrict, and offer meanings to the aesthetic experience. By centralizing stages of creation, the computer also becomes a powerful collaborative model that assists the artist in the use of the languages and discourses of generative video art.

There is no intention here to excessively romanticize the use of machines and computers, much less to fetishize a technology that may become obsolete tomorrow. The availability of tools for working in the field of computational art is subject to critique in relation to socioeconomic issues, such as the cost of acquiring equipment, access to knowledge, data protection, cryptocurrencies, and the environment.

The point here is to recognize that the machine, the computer, the system, and the algorithm occupy a prominent place within generative art because generative art can be both the process and the work. Regardless of the stage of the process, the generative work still depends on the processing power of the machine. Rangel's works, given as examples above, depend on their generative systems and models in order to be exhibited and displayed. When a gallery visitor encounters Rangel's video artworks, the systems and software used are also on display alongside the work, operating in real time.

The questions proposed here seek not only to address the initial concerns regarding the technical and ethical nature of this practice, but also to consolidate the importance of reflective methods for understanding generative video art.

Furthermore, the entire process and its results are part of a large set of the artist's physical, mental, and financial efforts, together with countless readings and life experiences that have led the artist to the creative act.

It is important to remember that the artist is at the top of this chain. It is the artist who demands art, who creates, develops, and relates to the collective through works and their imbrications.

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