0.5 in Limbo

By

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Abstract

This thesis explores *0.5 in Limbo*, an immersive interactive installation that examines the transformation of self-perception and existence within a digital environment. This project creates an open interactive space where viewers, through their choices and participation, influence the evolution and archiving of virtual organisms. In this continuously evolving digital ecosystem, each action serves as both an experiment and a question, while each archived entity represents a reconstruction or documentation of reality. The work invites participants to navigate the tension between certainty and uncertainty, shaping their own interpretations. Inspired by my reliance on short-form video platforms during the pandemic, *0.5 in Limbo* evolved into a reflection on collective digital survival. By sorting out the technical implementation, spatial construction, and interactive design of the project, this thesis explores the artistic reinterpretation of the laboratory and archiving. This process not only documents an artistic practice but also provides a new perspective on understanding the experience of existence in the digital age. Through reflections on the creative process, this thesis seeks to open a gap for thinking, where the digital laboratory is no longer just a means of expression but a way of understanding the world and an attempt to find possibilities within uncertainty.

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Finally, to my cohort, whose encouragement, inspiring conversations, and shared energy have made this experience truly meaningful, and to my family and friends, whose steadfast support has been my foundation—thank you!

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Through the Screen, Into the Lab

My thesis project *0.5 in Limbo*[1] is an immersive interactive installation that transforms a gallery space into a pseudo-digital laboratory, where viewers engage with virtual organisms through a laboratory glove box. Acting as scientists, they select and manipulate these virtual organisms, deciding whether to archive them or let them dissolve. As the exhibition progresses, their choices accumulate into a growing database of hybrid life forms, mirroring the evolving dynamics of digital ecosystems.

Fig. 2. *0.5 in Limbo*, *State of Practice* Exhibition Installation view, *0.5 in Limbo* Interactive installation presented via a digital screen, lab coats and goggles, 2024. Photo by Boya Liang.

This project first took shape in the *State of Practice (SOP) Exhibition*, where it existed as a screen-based interactive installation. In that early version, participants interacted with virtual organisms entirely on a digital display, selecting and saving them into a database. To further reinforce the laboratory atmosphere and deepen the experimental dimension of the work, I developed the next phase of the project by extending the installation beyond the digital screen into a physical laboratory glove box, enhancing the viewer's sense of physical participation.

[1] *0.5 in Limbo* signifies an unfinished, suspended state—never reaching completion, never fully arriving. "0.5" is the in-between, a number that never reaches "1," symbolizing actions that remain unfinished, constrained within predetermined boundaries. "Limbo" evokes a space of uncertainty, where presence, agency, and meaning remain unresolved, continuously shifting through interaction.

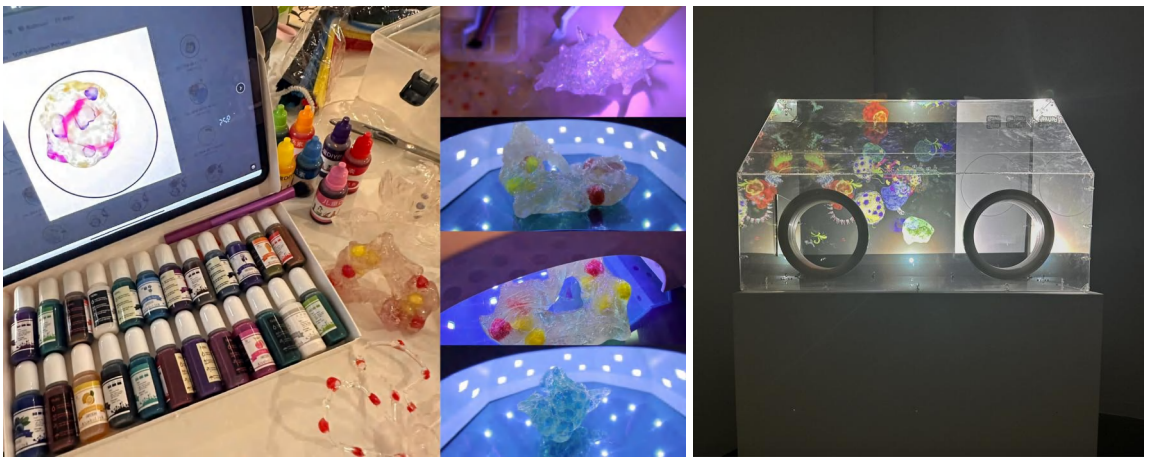

Fig. 3. Left: Resin specimens under UV light during the fabrication process. Right: Laboratory glove box as part of the installation setup.

Subsequently, the new fictive organisms created by audiences during the *SOP exhibition* transform from purely digital traces into tangible, archivable physical forms. I manually sculpt these based on their digital records（Fig. 4), using resin, PVC, and other mixed materials. These three-dimensional artifacts are displayed alongside the glove box, visually linking the digital interaction with their tangible material counterparts. Once materialized, each specimen is sealed in specimen jars, becoming physical remnants of this experimental ecosystem. Additionally, the space incorporates a transparent curtain and cool lighting effects to further enhance the atmosphere of a real scientific laboratory. In this setting, viewers are invited to wear lab coats and goggles, assuming the role of scientists conducting experiments. With hand gesture tracking and recognition, a crawling, wriggling virtual organism is selected from the pool and dragged into a petri dish on the right. Through continuous layering and combination, the participant shapes the organism's fate and form before making a choice to save it, refresh the interface, or simply leave it in the virtual petri dish.

By choosing to save their digital interaction, the "scientist" adds to an archive, integrating newly created fictive organisms into a larger digital system and making them part of the experimental ecology. Here, there are no predetermined correct answers—meaning is continuously created, dissolved, or redefined through ongoing experimentation, selection, and intervention. As more viewers participate, these interactions contribute to an ever-evolving collaborative process.

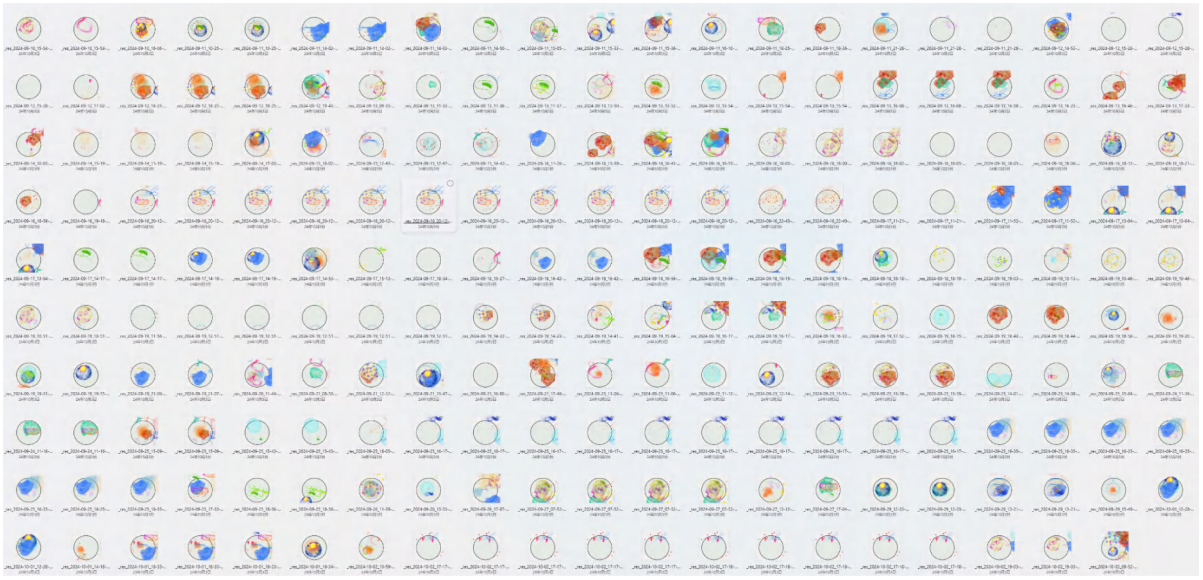

Fig. 4. *State of Practice Exhibition* Archive Screenshot, Digital documentation of viewer generated hybrid new fictive organisms, captured through the exhibition's interactive installation, 2024.

This work is deeply rooted in my personal experience within digital ecosystems. Living in the physical world, I simultaneously find myself mired in a digital quagmire. Screens are my connection to the world. More than just a glowing flat surface, they bridge the distance between me and the external realm. Every morning, as I open my eyes, the first gleam of light emanates from my phone screen—my academic tool, search engine, entertainment paradise, and life coach. It is also the bond that connects me with friends and family. Platforms like Rednote[2] and Douyin[3] have become a main stage, allowing me to enjoy the benefits of technology while simultaneously pulling me deeper into the digital landscape shaped by algorithms, data, and recommendation mechanisms, seemingly unable to clearly see the future or know where they will take me.

These platforms have not only changed the way I receive information but are also shaping the way I understand the world. The editing of short-form videos and the logic of recommendation mechanisms make all content visually appealing, consumable, and shareable. Reality seems to be re-encoded through this viewing method. I have become accustomed to the logic of moving images, and at certain moments, these audiovisual representations seem more "real" than reality itself. To a certain extent, users no longer

[2] Rednote is a Chinese social media platform that integrates content creation, sharing, and e-commerce, functioning similarly to Instagram. Since the impending 2025 U.S. ban on TikTok, a large number of TikTok users, self-identified as "TikTok refugees," have migrated to the platform, driving its diversification and internationalization.
[3] Douyin is a short-form video platform developed by ByteDance for the Chinese market, sharing core technology with its international counterpart, TikTok. It utilizes intelligent algorithms, focusing on content distribution and user engagement.

observe reality directly but rather witness how images interpret reality, eventually believing that these images themselves constitute a part of reality.

This mode of viewing can be understood through the simulacrum theory proposed by French sociologist and philosopher Jean Baudrillard. He argues that the content on digital platforms is not a reflection of reality but rather a system of images constructed through computation, selection, and replication (Baudrillard 6). Within this system, digital platforms create a hyperreal viewing experience—one in which images no longer refer to an external truth but instead form a self-sustaining, fluid, and endlessly self-replicating network (Baudrillard 45). As viewers, we have gradually become accustomed to this self-referential nature of images, seeking meaning within an infinite cycle of information.

Fig. 5. Xuemei Zhou, Site-specific Installation, *Three Life Times, Ten Miles of Peach Blossoms*, 2022. UHD video, 04 min 52 sec (sound, color).

In past projects, I attempted to explore perception, the body, and knowledge construction within a digital ecology through multimedia or interdisciplinary approaches. I focused on how I perceived the world and understood myself in this era shaped by platform rules, content moderation, and algorithms. Starting with *Three Life Times, Ten Miles of Peach Blossoms* (Fig. 5), I examined popular Chinese short-form video platforms like Kwai (similar

to Douyin and Rednote App) as a research object to reflect on how digital platforms shaped individual expression and aesthetic systems, and how they changed under content moderation. This platform once provided users with a space for self-expression, but as the platform rules have been adjusted, its aesthetic ecology also evolved. The work re-arranged the dance and music in the context of Kwai through a virtual 3D body theater[4], exploring the fluidity of the body intertwined with digital culture and social norms.

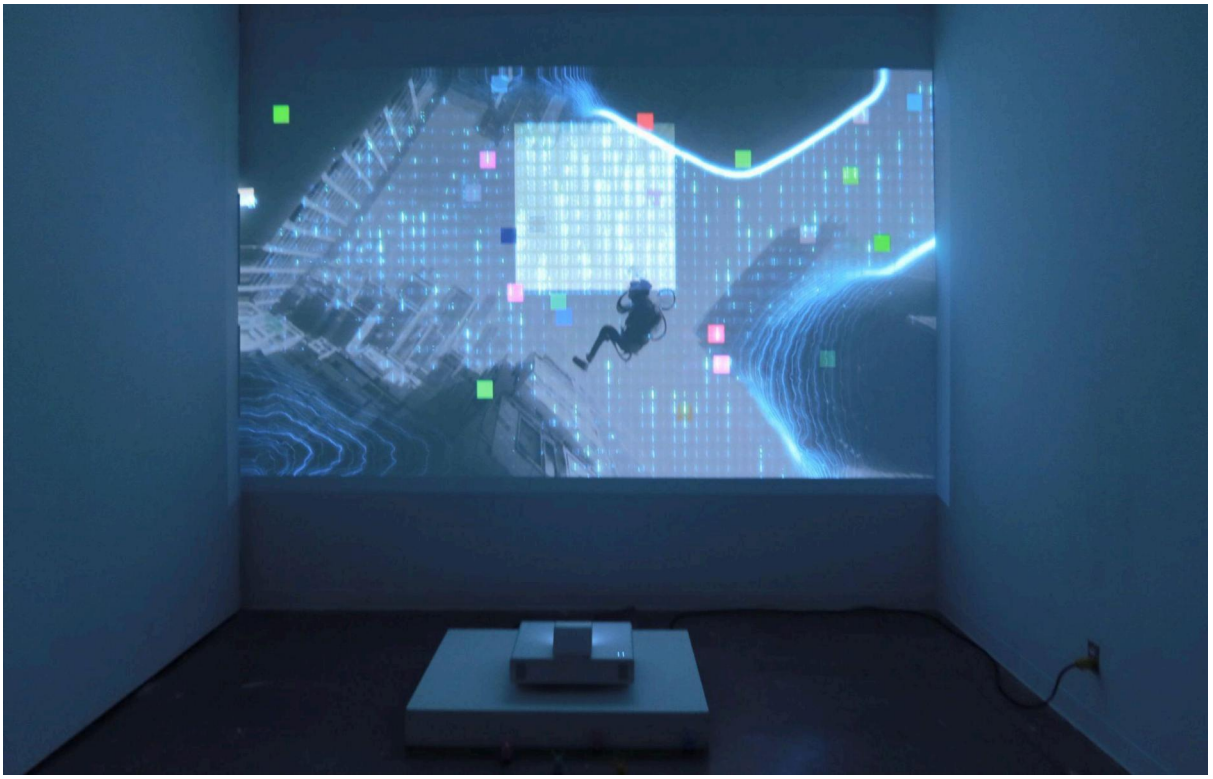

Fig. 6. *Lost in the Echo*, 2023. Video installation, 2 min 34 sec, https://www.youtube.com/watch?v=s6N3cK5Gl1A.

Continuing this exploration, video installation *Lost in echo* (Fig. 6) blurred the boundaries between reality and virtuality through distorted images and rapid scene transitions, reflecting the confusion and disorientation in memory and perception brought about by the era of digital information overload. A book made of silk material, *Cocoon* (Fig. 7), borrowed biological metaphors to express the complex feelings of being both protected and constrained in contemporary social life. Each work explored the way humans exist in the digital environment from different perspectives, and these practices laid the foundation for my current creations.

[4] A performance format that merges live dance with 3D-modeled spaces, where the dancer's body is detached from the physical space and interacts with digital architecture, creating a performative field that exists between reality and the virtual.

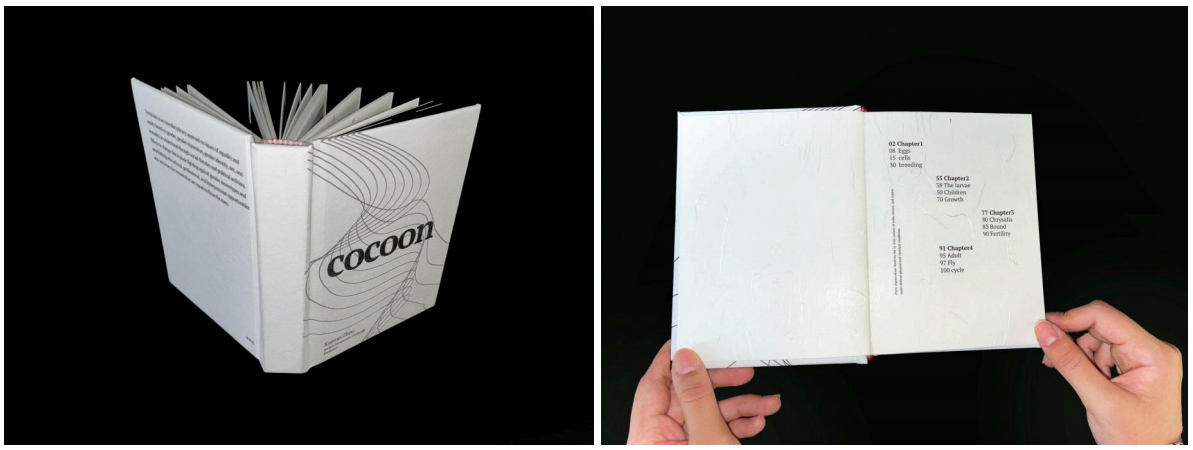

Fig. 7. *Cocoon*, 2022. 43 pages. Yunlong paper and paper with silkworm-silk texture; 40 × 33 inch.

These ongoing explorations have made me realize that the digital ecosystem constructs a fluid reality topology[5] around my experience, while also reshaping sensory thresholds amid the rapid circulation of information. Prolonged exposure to these fast-paced, fragmented information flows renders the brain myasthenic,[6] heightening personal anxiety and unease. Sometimes I ask myself whether the path of growth shaped by this digital environment is right or wrong. How many of the decisions and actions in my life stem from my own will, and how many are influenced and predicted by external forces? There seems to be no clear answer, but I want to try to capture this ambiguous and contradictory feeling—this complex experience of being pulled, trapped, yet actively choosing to immerse in it.

0.5 in Limbo is precisely the concretized attempt of this series of speculations at the current stage. I have distilled personal experiences within the digital environment into a digitized interactive experience. However, it does not completely reproduce the rigor and order of a scientific laboratory. Instead, it transplants this symbolic field into the gallery space, creating an atmosphere where rationality and absurdity coexist through installations with experimental attributes.

[5] The reality topology here does not refer to traditional geographical or physical spatial structures but rather to a dynamic and malleable perceptual space shaped by the flow of information, the organization of content on platforms, and their dissemination mechanisms within the digital ecosystem.
[6] Myasthenic here does not refer to a medical condition but is used metaphorically to describe the brain becoming fatigued and sluggish due to prolonged exposure to fast-paced, fragmented information flows, making it difficult to maintain deep thinking and focus.

X, Y, Z: Coordinates of Inquiry

Tracing My Path

My creative practice did not begin with art but an exploration of media ecology. As a creator bridging journalism and digital media, I initially examined how information is shaped and disseminated, and how technology influences perception and behavior through the lens of communication studies[7]. While this experience did not directly define my artistic direction, it planted a seed that subtly shaped my creative approach, fostering a lasting interest in media mechanisms throughout my work.

During my undergraduate studies, I focused on online public opinion supervision within short-form video platforms, analyzing how algorithmic recommendations reshape the information ecosystem and public sentiment. In my thesis,《浅析当今网媒舆论对公众事件的影响——以“网红罗小猫猫子”为例》[8], I selected Luo Xiaomao Maozi as a case study to explore how recommendation mechanisms subtly influence the reach and visibility of information within entertainment-driven short-form video platforms, thereby exacerbating online polarization[9] and the filter bubble effect.[10] The recommendation system relies on user data to personalize content distribution, amplifying the visibility of specific information while downplaying or even suppressing content that does not align with user preferences. In doing so, it invisibly structures the hierarchy of information flow. Under the influence of algorithmic promotion, Luo Xiaomao Maozi's experience quickly became a focal point of public discourse. However, this heightened visibility was accompanied by highly emotional commentary and online harassment, ultimately leading to her suicide.

At that time, Professor Peng Lan’s book *Introduction to Network Communication* provided a theoretical foundation for understanding the relationship between digital communication, technology, and society (Peng, 2018). The book’s profound analysis of the media

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[7] Although my major was journalism, communication studies here refers to a specific course within the field, focusing on information dissemination and media influence. Journalism is a broad discipline, and this course helped me understand how technology shapes perception and behavior.

[8]《浅析当今网媒舆论对公众事件的影响——以“网红罗小猫猫子”为例》is the title of my undergraduate thesis in Chinese, which translates to *An Analysis of Social Media Public Opinion's Impact on Public Events: A Case Study of Chinese Internet Celebrity 'Luo Xiaomao Maozi.*

[9] Initially proposed by American professor Cass Sunstein, later in the information society, the network gives everyone the right to express themselves freely, but in the process of group discussion, convergent views are constantly reinforced, leading to the phenomenon of group polarization on the network.

[10] Originally proposed by Cass Sunstein in his book *Infotopia: How Many Minds Produce Knowledge*, this concept refers to the phenomenon where people focus only on information they choose or find pleasurable, forming a closed, bubble-like information system.

environment not only helped me grasp the complex ecosystem and narrative patterns of online communication but, more importantly, planted a seed of thought that continued to grow over the years. These theories gradually intertwined with my personal experiences, shaping the way I understand and perceive my existence in the digital world.

Now, in *0.5 in Limbo*, I turn my focus inward, re-examining my relationship with digital platforms. This project serves as both an intimate reflection of my own digital existence and a subtle attempt to navigate ways of perceiving and being in the digital world. Rather than offering a definitive conclusion, it seeks to capture elusive personal experiences within this ever-shifting digital landscape.

Digital Tides: Perception in Flux

The origins of my thesis project *0.5 in Limbo* stem from the deepening sense of existential dislocation I experienced during the pandemic in China—days when my body was confined to a small space, life became intensely tangible, yet my mind drifted aimlessly, unable to find a place to rest. While the physical world was put on pause, the digital tide never ceased; under the constraints of lockdown, it surged even more relentlessly, filling the gaps in my perception.

Initially, the government's sudden and strict control measures were difficult to adapt to, with daily lockdown news reminding me that the world was still changing, while I remained trapped in a stagnant space. During those three years, platforms like Douyin and Rednote became a unique transitional zone. From the moment I opened my eyes until preparing to sleep, I was immersed in this digital world, seemingly desperate to find my connection to the world. The rhythm of viewing became fragmented, yet the stacking of information created another form of continuity, generating a certain order within chaos.

In this world, every short-form video, posts, and recommendations were tailor-made for me, offering topics of interest, quick knowledge snippets, and fragmentary pleasures. Over time, the boundary between learning and entertainment blurred, everything could be simplified into a few seconds of video or a handful of keywords, eliminating the need for deep reading and critical thinking. This habit of skimming through content gradually replaced traditional deep

learning, making me resistant to prolonged focus and contemplation. My mind became numb, caught in an endless cycle of replication and reproduction within a homogenized[11] space.

Gradually, it is as if I have contracted an illness, one where I experience intense withdrawal symptoms if I do not consume content on Douyin or Rednote. This convenience and stimulation has made me greedy, unable to stop even as my eyes grow dry and my mind hazy. With it comes an ever-increasing cost of happiness, a mounting sense of anxiety, and diminishing focus and self-control. No one requires me to watch, yet I am powerless to cease, as if the moment I do, I must confront the emptiness and helplessness of reality.

This digital dependency has become a collective phenomenon in contemporary society. According to recent data from DataReportal's *Digital 2024: Global Overview Report* (59), as of 2024, there are 5.35 billion internet users worldwide, accounting for approximately 67% of the global population. On average, internet users aged 16 to 64 spend 6 hours and 40 minutes online daily, highlighting the dominance of digital life in modern existence (DataReportal 59). In China, short-form video platforms saw a surge in users during the pandemic, with over 640 million active users on Douyin and similar platforms by February 2020, serving as a crucial emotional outlet during lockdown (MobTech). This trend did not fade with the pandemic but instead became deeply integrated into post-pandemic lifestyles and cultural habits.

Within my social circle, traditional messaging apps have gradually been replaced by short-form video-based interactions. Friends now prefer to share their lives and express emotions through Douyin and Rednote, with entire conversations revolving around videos or posts. In some cases, text has become secondary, with images and videos taking precedence in communication. Deep conversations are increasingly replaced by fragmented interactions—likes, comments, and shares. This shift in communication not only reflects changes in personal habits but also signals a broader societal trend. With the continued development of AI and augmented reality, short-form video platforms will likely become even more immersive and irresistible, as our constant engagement feeds the algorithm, which in turn refines and optimizes content to further captivate our attention.

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[11] It refers to the phenomenon where different content or products become highly similar in form, style, and expression, lacking diversity and uniqueness, ultimately leading to a monotonous flow of information or experience.

0.5 in Limbo is not merely an outcome shaped by the unique circumstances in China during this period; I have also expanded it into a broader response to collective consciousness. What I want to emphasize here is that, while reports from DataReportal and MobTech provide data support, individual usage patterns and experiences vary greatly. The experiences I describe are not universally applicable, as the reasons for being deeply immersed in these platforms are influenced by multiple factors and may not be entirely attributable to digital platforms alone. However, within my specific context, these influences were amplified, blurring my sense of control over the flow of information and even leading to a feeling of being lost. For this reason, I hope to present my personal experience as an invitation for the viewer to actively engage, and interpret in their own way, generating meaning through their interaction with the work.

In-between space

Although the pandemic once trapped me within an invisible boundary, shrinking my physical space and making the screen my only escape, technology and media are constantly evolving. The way information flows, the space for individual expression, and the production and consumption of content are all continuously changing.

In *0.5 in Limbo*, my reflection on personal experience is not singular or linear. It is full of contradictions, with no absolute good or bad. Falling can mean destruction and disappearance, but it can also lead to creation. I want to open gaps in new digital habits and embrace the discomfort that comes with emerging possibilities.

Using contemporary art as an example, its fluidity has already permeated the everyday media environment. On platforms dominated by short-form videos, the rise of self-media has brought images, performances, and exhibitions into constant circulation around us. As curator Hanru Hou referenced Mao Zedong's words in an interview, "There is great chaos under heaven – the situation is excellent"[12] (Mao, qtd. in Hou). Today's art ecosystem presents a dynamic, diverse, and unclassifiable landscape, functioning not only as cultural production but also as a structural transformation of society (Hou).

At the same time, the rise of self-media has also driven the decentralization of discourse power. Unlike the past, where narratives were shaped by a small number of media

[12] The phrase originally referred to the potential for transformation amid social turmoil. Here, Hanru Hou adopts this expression to describe the fluidity and uncertainty of the contemporary art environment.

institutions, the "poor image" (Steyerl, 2009) and low-resolution short-form videos on these platforms no longer rely on the high-cost production of the traditional film industry but instead operate within the fragmented information flow of everyday life. As Hito Steyerl states, “The poor image is a strategy of escape” (Steyerl, 2009, p. 32), liberating images from elite-controlled systems and integrating them into broader social domains. This shift is not merely a technological evolution but a part of cultural democratization. Images are no longer confined to cinemas or archives but are embedded in social life. Julio García Espinosa also advocated for the creation of an imperfect cinema (*For an Imperfect Cinema*, 1969), blurring the boundaries between consumer and producer, viewer and creator.

However, this decentralization also brings contradictions. In an algorithm-driven ecosystem, the information users receive is highly personalized, simultaneously expanding individual expression while trapping them within filter bubbles (Pariser, 2011). Can critical perspectives still be maintained in such an environment? Will individuals become mere objects of consumption, or can they still function as forces of resistance?

This self-replicating network of images implies complex political structures. As Adam Curtis reveals in *Hypernormalisation*, we have gradually become accustomed to accepting an alternative reality shaped by media and algorithms (Curtis). While self-media has achieved apparent decentralization of discourse power, the circulation of content is still controlled by algorithms, forming a new power system. In *0.5 in Limbo*, I transform these contradictory personal experiences in the digital environment into an interactive installation, providing viewers with a perspective for reflection through the laboratory metaphor. The mechanism of choosing to save or abandon virtual organisms in the work is intended to evoke reflection on how algorithms shape our information reception and memory formation, without presupposing how viewers will interpret it.

At this technological turning point, it is often difficult for individuals to make immediate judgments, as such judgments require time. The boundaries between reality and presence are constantly dissolving, and traditional classifications can no longer fully capture the current media ecology. This decentralized media environment offers freedom of expression but also introduces new uncertainties. In this ever-shifting reality, perhaps it is necessary to return to Hanru Hou’s perspective. When discussing the contemporary art ecosystem, he suggests an approach that neither opposes nor conforms, but instead remains open, hybrid, and inclusive.

This fluidity and uncertainty, he argues, are precisely what give life its meaning. Within this process, subjectivity is not entirely consumed but still has the potential to find its place within the shifting media reality (Hou, 2025).

I believe this perspective applies not only to contemporary art but also reflects my own position within the digital environment. Facing an information landscape shaped by algorithms and data, it is unnecessary to rush toward definitive conclusions. Instead, meaning can emerge through intersections and exchanges, fostering unconventional viewpoints and new imaginations within seemingly familiar daily experiences. It allows for both the production of ways of seeing and the expression of contradictions in existence, remaining ready to resist while simultaneously accepting submission.

Therefore, in this digital laboratory I have created, although the system is set up, meaning is not preset. Instead, it continuously emerges and evolves within different contexts and individual experiences. As Theodor W. Adorno asserts, there is no stability in this world; we must find new possibilities within an unstable realm (Adorno, 1970).

Unfolding the Lab

Reimagining the Laboratory

Typically, the image of a laboratory is one of precision and restraint, with white walls, bright lighting, and neatly arranged instruments. Everything is meticulously measured, all elements directed toward a definitive outcome. But if a laboratory were no longer an exclusive domain of scientific research, but an open space filled with possibilities, what would it look like?

In *The Lab Book: Situated Practices in Media Studies*, Jussi Parikka introduces the concept of "Laboratory Fever," which led me to reimagine the possibilities of the laboratory as a space. From his perspective, a laboratory is not merely a physical site for scientific research but a dynamic field where knowledge production, social interaction, and experimental practice converge (Parikka et al., Chapter 5). It operates not only within the rigorous logic of scientific experimentation but is also deeply embedded in cultural, political, and historical contexts—an intersection of power, intellectual exchange, and creative practice. This perspective made me realize that a laboratory is not simply a closed research environment but a space that can be redefined, reshaped, and recontextualized to generate new ways of thinking and perceiving.

When I integrated this concept into *0.5 in Limbo*, the form of the laboratory began to shift. It was no longer merely a symbol of scientific research but became a space that mirrors my own digital existence and explores unknown possibilities.

Fig. 8. Four participants engaging in an interactive experience at the *State of Practice Exhibition*, 2024.

Michel Foucault's concept of heterotopia further inspired my imagination of this space. He describes heterotopias as real yet exceptional spaces that exist within reality but operate under different rules, such as prisons, amusement parks, museums, or cemeteries. These spaces are both tangible and seemingly detached from everyday life, governed by their own

internal logic, reflecting the order and contradictions within our society. When we are in it, it creates a sense of familiarity and estrangement at the same time (Foucault, 1986).

Just as Foucault described, when elements of the laboratory are repurposed within the gallery space, their function and meaning shift. Its institutional authority is deliberately deconstructed, giving way to an environment of uncertainty and theatricality. In this pseudo-laboratory, the precision of science is replaced by a playful absurdity, rendering the once rigid and solemn setting unstable, even borderline comical.

This tension between seriousness and absurdity is also largely influenced by Hito Steyerl's work, *How Not to Be Seen: A Fucking Didactic Educational .MOV File* (2013). Steyerl is known for deconstructing power structures through humor and satire, making complex social issues more accessible and tangible. My earlier work, *Lost in the Echo*, (2023), experimented with a similar approach by pasting 2D faces onto low-quality 3D human models, setting them in fast-paced, visually disorienting scenes where they danced, creating a deliberate sense of instability and awkwardness.

In *0.5 in Limbo*, I continue to explore this tension through the documentation of experiments. In traditional laboratories, every step is meticulously recorded, and every piece of data is carefully analyzed. Here, however, the results of the experiments are varied Virtual Organisms, archived in glass specimen bottles, resembling peculiar scientific discoveries. This parody of the scientific form maintains the outward appearance of a laboratory while subverting its internal logic, creating a subtle sense of absurdity.

The Language of Interaction

0.5 in Limbo is an experiment centered around interaction, not only as a technical realization but as an exploration of experiential engagement. The uniqueness of interactive media lies in its ability to transform the viewer from passive spectators into active participants, allowing them to shape the work through their actions and continuously adjust their understanding in the process. Unlike traditional video or installation art, interaction emphasizes process over outcome, offering no fixed narrative or conclusion but instead evolving through dynamic feedback.

In this digital laboratory, viewers interact with virtual organisms through hand gesture tracking and recognition. They float and drift across the interface, but when dragged into the petri dish, they revert to their static state. Participants can layer and combine different organisms to create new configurations or choose to archive them, integrating them into the system. The immediacy of interaction ensures that every experience is unique, imbuing the work with an open-ended and unpredictable nature. This is not just about operation, it is about perception. Through interaction, the viewer is not merely watching or experimenting; they are constructing their own ways of understanding.

However, beyond its participatory and interactive characteristics, interactive media serves a more profound function as a site for critical inquiry into the nature of the medium itself. As Marshall McLuhan proposed in *The Medium is the Message*, the form of a medium influences human perception and social structures more profoundly than the content it delivers (McLuhan, 1964, p. 9). In other words, it is not only what we communicate that matters but also how we communicate it, as the medium itself shapes how we receive and interpret information. For instance, television news relies on images, sound, and visual effects, making information more immediate and emotionally impactful, whereas newspapers depend on text and graphics, encouraging rational analysis. In the context of short-form video platforms and algorithmic recommendation mechanisms, our attention and decision-making processes are undergoing significant shifts. Interaction plays a crucial role in this transformation, not merely as a technological innovation but as a new way of forming relationships between people, information, imagery, and environments.

In *0.5 in Limbo*, I am going to create a space where viewers can observe, adjust, and rethink their experiences. Interaction does not provide answers; rather, it expands the experience, allowing each participant to generate unique outcomes. While we are accustomed to passively receiving information, interaction introduces a new possibility, it enables us to "touch" the virtual and the invisible, redefining our position within the experience. Here, every choice is an exploration, and every decision leads to transformation.

Compound

Fabrication

After various iterations with this installation, I shifted the interactive interface from a screen to a physical transparent laboratory glove box. This transformation enables viewers to transcend purely visual comprehension of experiments, facilitating direct corporeal engagement with the process. In an era where screens have become the default mode of interaction, the introduction of the glove box offers an unconventional methodology for interaction. It necessitates a more ceremonial entry, a process that requires reaching in, making contact, and fine-tuning. This tension-filled interactive process heightens the sense of playfulness and intrigue.

Moreover, the use of a transparent glove box aligns with the overall aesthetic of the digital laboratory. In scientific research, medicine, chemistry, and biological experiments, glove boxes are commonly used to isolate hazardous substances or maintain a sterile environment, reinforcing the authenticity of the experimental setting.

Fig. 9. Yaloo, *MOT Cabinet*, installation view, display presented within a specimen cabinet, 2024. Generation that Generates: as above so below, curated by MediaSonyo, Libby Leshgold Gallery, 13 Sept.–10 Nov. 2024. Photo by Xuemei Zhou.

Yaloo's work *MOT Cabinet* (2024) has provided me with valuable insights regarding the presentation of artworks within a laboratory-like setting. In her installation, virtual organisms are placed within a structure resembling a specimen cabinet, evoking not only the ambiance of a scientific laboratory but also prompting the viewer to contemplate the relationship between the natural and the artificial, the virtual and the real, through interactive engagement. While I cannot ascertain the precise technical means employed in her work, I am inspired by the underlying logic of her presentation. In *0.5 in Limbo*, I hope to transcend the two-dimensional confines of the traditional screen, allowing the imagery and interaction to extend beyond the digital interface and into a more tactile, physical space.

Consequently, I decided to affix holographic projection film[13] to the back of the laboratory glove box, employing rear projection[14] to cast the interactive interface onto its transparent surface. This approach not only refines the clarity of the visuals but also deepens the audience's perception, rendering the experience more spatially dynamic and immersive.

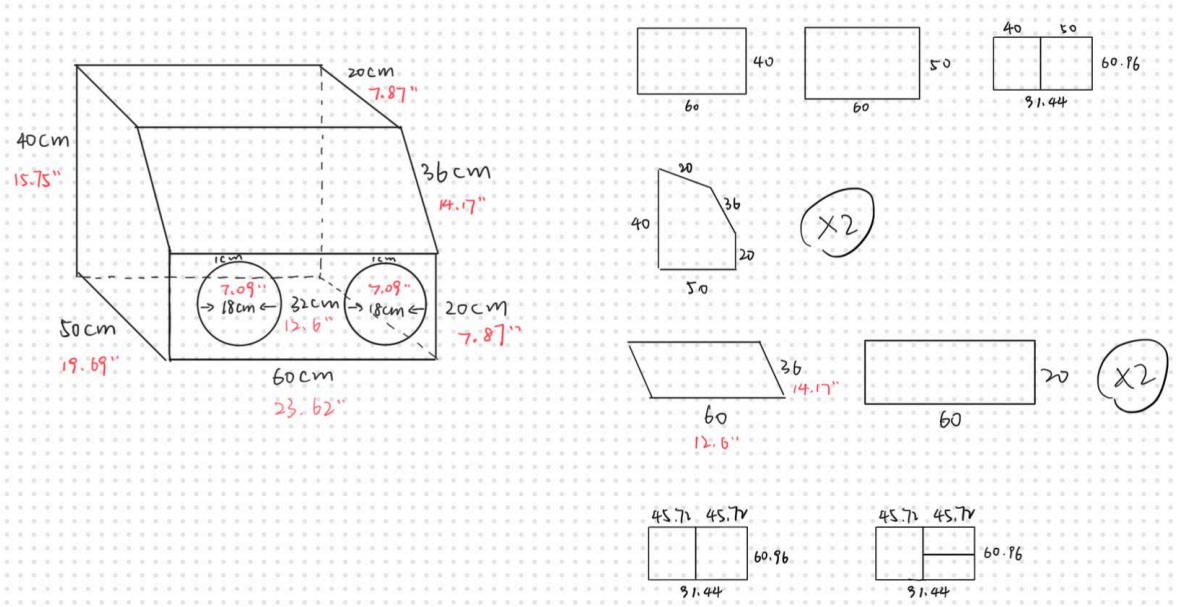

Fig. 10. Diagram of the laboratory glove box structure with dimensions in cm and inches.

[13] It is a highly transparent optical material that maintains image clarity while allowing viewers to see through the projection film to the environment behind it. Its unique diffractive optical properties create the illusion of images floating in space, making it widely used in immersive displays, interactive installations, and digital media art.

[14] Rear projection is a projection technique in which images are cast onto the back of a screen by a projector, allowing viewers to see a clear display from the front. This method minimizes interference from ambient light, enhancing brightness and contrast, and is commonly utilized in stage performances, exhibition installations, and interactive art.

During the fabrication process, I selected six 24×36 inch acrylic panels as the primary material, as their transparency perfectly aligns with the experimental nature of the work. Utilizing laser cutting, I precisely shaped these panels into seven distinct components.

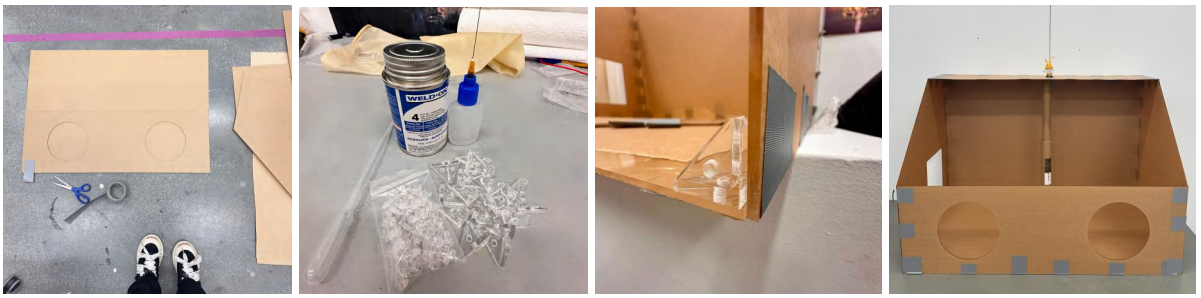

Fig. 11. Assembly process of the laboratory glove box. From left to right: (1) Cut acrylic sheets prepared for construction, (2) Weld-On #4 acrylic adhesive and transparent acrylic corner bracket, (3) Drilled and fixed transparent acrylic corner bracket, (4) Assembled structure left to dry.

For assembly, I initially secured the edges with tape to ensure precision during adhesion. To achieve a seamless and aesthetically refined finish, I employed Weld-On #4, a specialized acrylic adhesive. This chemical solvent penetrates the seams through capillary action, inducing a reaction with the acrylic that forms a bond reaching over 80% of its full strength within 72 hours, leaving no visible glue residue. Additionally, I reinforced each joint with transparent acrylic corner brackets, which not only enhanced structural stability but also preserved the overall clarity of the piece. This meticulous approach strengthened the laboratory's visual coherence, reinforcing its conceptual integrity.

At the glove interface, I specifically selected laboratory grade flange rings[15], ensuring operational comfort. Notably, while traditional laboratory glove boxes are typically equipped with long-arm acid and alkali-resistant latex vacuum gloves, I took into account the potential for latex allergies among some viewers, as well as the heightened awareness of public hygiene in the post-pandemic era. Consequently, I ultimately chose to retain only the flange rings structure.

[15] A flange ring is a circular structural component designed for connecting and securing the openings of various devices. It is widely used in laboratory glove boxes, pipeline systems, and industrial equipment. In laboratory settings, flange rings typically serve as sealed interfaces, allowing operators to perform tasks without direct exposure to the experimental environment.

Manipulation

While conceptualizing how the viewer might engage with the experiment and manipulate a certain object or entity, I was drawn to Marina Abramović's work *Rhythm 0, 1974*. In this groundbreaking work of performance art, Abramović relinquished all defenses, placing herself in a completely passive state. She arranged 72 objects on a table, ranging from soft feathers to sharp knives, allowing the audience to use them on her body in any manner they desired. By surrendering control, she deliberately positioned herself in a state of extreme vulnerability, exposing how, in the absence of rules, viewers exercised their power. Some chose gentle gestures, while others engaged in increasingly radical and even aggressive actions without hesitation. This unrestricted freedom unveiled the most primal, unfiltered aspects of human behavior, transforming the artwork itself into a mirror that reflected the complexities of human nature.

Inspired by this, in *0.5 in Limbo*, the object controlled by the viewer should resemble Marina Abramović in a state of passive submission, retaining a semblance of vitality and responsiveness while remaining in a state of complete subjugation. After extensive deliberation on various symbolic materials, including marionettes, shadow puppetry, nylon restraints, laboratory mice, and masks, I ultimately chose virtual organisms as the medium.

Inside the laboratory glove box, these virtual organisms wriggle and float, acting as a mirror that reflects my own condition within the contemporary digital landscape, sometimes yielding to the pull of algorithms, other times struggling to break free from predetermined trajectories. Beyond exhibiting humanoid characteristics, virtual organisms possess a high degree of plasticity, embodying properties such as growth, division, and metabolism. They exist in a state of fragility yet infinite potential.

Due to the constraints embedded in the code, the viewer is not always able to precisely grasp these virtual organisms, they often slip away from the fingertips, retreating back into the pool. Neither fully yielding to the participant's intent nor completely escaping its own movement logic, the virtual organism remains suspended at the threshold between control and autonomy. The entire process becomes infused with uncertainty and contingency, carrying an implicit sense of negotiation.

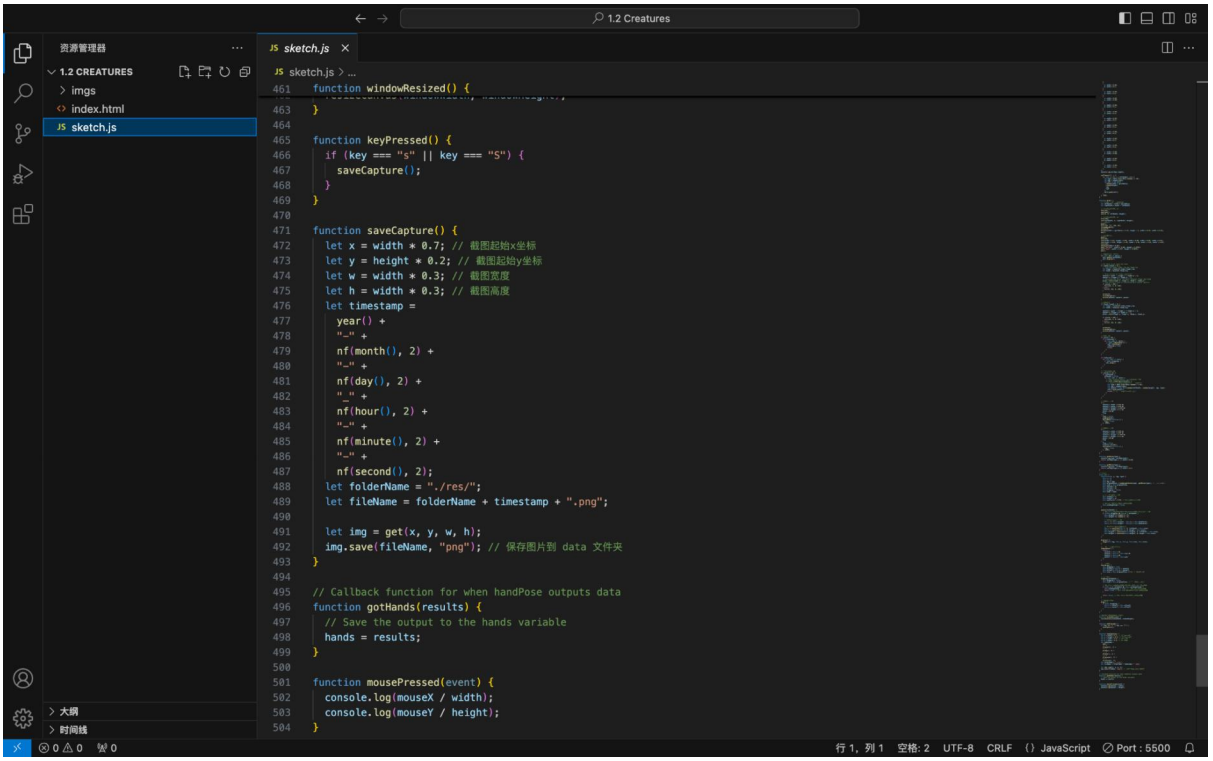

Fig. 12. Screenshot of JavaScript code in Visual Studio Code software, utilizing the p5.js and ml5.js libraries for interactive and machine learning-based functionalities.

Archiving

While contemplating the concept of archiving, Jacques Derrida's discussion in *Archive Fever: A Freudian Impression* provided a crucial theoretical lens. He introduces the notion of "archive fever", describing humanity's paradoxical relationship with archives—marked by both an insatiable desire to preserve and a deep-seated anxiety over loss and forgetting. Like an unrelenting fever, this impulse compels us to record and safeguard the past while simultaneously confronting the fear of its disappearance.

More intriguingly, Derrida conceptualizes the archive as a collection of traces, not merely a static repository but a dynamic space where memory remains in perpetual dialogue. In this space, the past and present continuously interact, generating new meanings. He further argues that archives are never neutral containers; rather, they function as sites of power. Only those documents sanctioned by authoritative institutions and stored within designated spaces attain the status of an "archive" (Derrida 3-5). In other words, the archive, by determining what is deemed worthy of preservation and how it is curated, subtly shapes our historical understanding and the construction of collective memory.

This theoretical perspective resonates with my own experiences on short-form video platforms. Each day, I unconsciously generate digital traces, such as likes, comments, shares, and even fleeting pauses, all of which are silently collected and stored by algorithms, forming historical imprints that influence the future information landscape. Yet, unlike physical archives, this form of archiving is invisible and imperceptible; it does not manifest as clearly defined records within our field of vision but instead operates covertly through algorithmic recommendations, user profiling, and data analytics. In this sense, the algorithm functions as an invisible archivist, curating content not only based on individual preferences but also adapting its strategies in response to social trends and public discourse. This process of "digital curation" is actively reshaping how I perceive and interpret the world.

It is precisely this passive state of being archived that led me to design a unique archival mechanism in *0.5 in Limbo*. When viewers create new digital life forms, they must make a choice, whether to permanently preserve them or allow them to disappear into the data stream, leaving no trace. Moreover, I liberate these preserved digital entities from the two-dimensional screen, transforming them into tangible three-dimensional specimens housed in glass containers, thus materializing the archival process in physical form.

Fig. 13. Visual effect of test specimen jars placed together, observing the sedimentation, diffusion, and transparency changes of the liquid and color elements.

The display format draws inspiration from the Guangdong Museum of Traditional Chinese Medicine. There, specimen jars are meticulously arranged on display shelves, and the act of observing objects through the glass barrier inevitably evokes a sense of detachment while simultaneously freezing a particular moment in time. This method of presentation not only

conveys an aura of systematic archival authority but also establishes a distinctive viewing distance, shaping the way the audience engages with the objects.

Fig. 14. Display of specimen jars at the Guangdong Museum of Traditional Chinese Medicine, showcasing various medicinal plants.

Adopting this institutionalized display method, I placed the virtual organisms created by the audience into transparent specimen jars, each labeled with its generation time and preservation status. These specimens serve as both tangible evidence of certainty and manifestations of digital uncertainty, existing in a liminal state between the virtual and the real.

Within the exhibition, these specimens are neither the result of rigorous scientific experiments nor bound by strict biological principles. Instead, they emerge through audience interaction, their forms randomly generated, while their survival depends entirely on human choice. This inherent instability calls into question the very act of archiving, in the absence of an original standard, what exactly are we preserving? And why do we choose to preserve it? Are the digital life forms that remain truly more deserving of existence than those that were discarded? Perhaps the significance of archiving lies not in validating an object's worth, but in the act of selection itself. Archiving is not merely about preserving the past; it is also a mechanism that actively shapes the future.

Fig. 15. Xuemei Zhou, *0.5 in Limbo*, 2025. Immersive interactive installation exhibited at *Everything Vibrates: MFA 2025 Thesis Exhibition*, featuring a glove box, rear projection film, PEVA curtain, UV-cured resin, yarn, and specimen jars.

Lab Report: Final Analysis

As I gazed at the life forms preserved in specimen jars, I realized they were not merely the outcome of interaction, but material traces of an ongoing negotiation between the digital and the physical throughout this creative journey. The moment the exhibition ended did not feel like a conclusion—it marked the beginning of another prolonged, uncertain state. These preserved experimental results will continue to exist and evolve in their own way, much like real scientific experiments, whose impact extends far beyond the moment of observation.

Fig. 16. Xuemei Zhou, *0.5 in Limbo*, 2025. Installation detail from *Everything Vibrates: MFA 2025 Thesis Exhibition,* showing the interactive center and surrounding specimen shelves under colored ambient lighting.

It was within this sense of continuity that I began to reassess the role of the viewer and their behavior throughout the exhibition. I never intended to present the system as an entirely open or free space. Instead, I designed predetermined structures to guide viewer participation, using footprint stickers and instruction labels (Fig.17) to suggest a specific sequence of interaction and movement through the space. Still, at the exhibition site, some viewer behaviors were truly unexpected: some skipped all interactive steps and walked directly to the specimen shelves; some viewers simply observed without engaging; others left personal marks using stickers, doodles, or other means. At first, these deviations made me want to

correct them. But eventually, I chose not to eliminate these unpredictable elements, instead embracing them as part of the work.

Fig. 17. Xuemei Zhou, *0.5 in Limbo,* 2025. Instructional elements used to guide viewer participation, including footprint stickers leading into the installation and a step-by-step interaction guide posted on a central column. Exhibited at *Everything Vibrates: MFA 2025 Thesis Exhibition*.

Each viewer's divergence reminded me that the meaning of the work goes far beyond the structure I had envisioned. The tension between control and freedom isn't something to be resolved—it's meant to be experienced. It is in these unscripted actions that moments of structural looseness and boundary permeability emerge organically, evoking a sense of porosity. This wasn't a planned strategy but rather a crack revealed in practice—one of the most valuable aspects I've come to cherish in the process.

Fig. 18. Viewers engaging with the interactive installation behind transparent curtains. Part of *Everything Vibrates: MFA 2025 Thesis Exhibition*.

During installation, I also realized there were many technical details that needed refinement. For example, the projection setup was initially intended to create a holographic-like interaction, but the use of transparent rear-projection film was heavily affected by ambient lighting, which reduced visual clarity and left floating shadows on the wall (Fig.16). While I personally found these ghostly visuals strangely appealing, from an interaction perspective, switching to black rear-projection film and adding a light-blocking layer above might better control lighting and focus.

In addition, the white background of the interactive interface also felt visually disruptive in the darkened environment, interrupting the spatial flow. In future versions, I plan to remove it and let the imagery blend more organically into the space.

Meanwhile, the transparent curtain was originally intended to evoke a clean room atmosphere and enhance the sense of experimentation. However, the initial version was too short and wrinkled, diminishing its visual impact. Replacing it later with a full roll of poly sheeting improved the result, but if the work is exhibited again, I will reconsider whether the curtain is necessary at all—perhaps a fully open, unwrapped space would allow the laboratory concept to feel lighter and more fluid.

Fig. 19. Viewer-generated digital organisms preserved in labeled specimen jars. Part of *Everything Vibrates: MFA 2025 Thesis Exhibition.*

During the defense, as I described the life forms that had been printed, labeled, and sealed in specimen jars, the term “digital fossil” slipped out unexpectedly. Originally meant to describe the transformation of data into physical form, the phrase caught the committee’s interest and prompted a brief but curious discussion. This made me reflect on whether “digital fossil” might be more than a passing metaphor—perhaps even a conceptual framework worth further exploration in future artistic research. It embodies traces of the act of viewing and, in material

form, reminds us how choices within digital systems can be historicized, seen, and even reinterpreted.

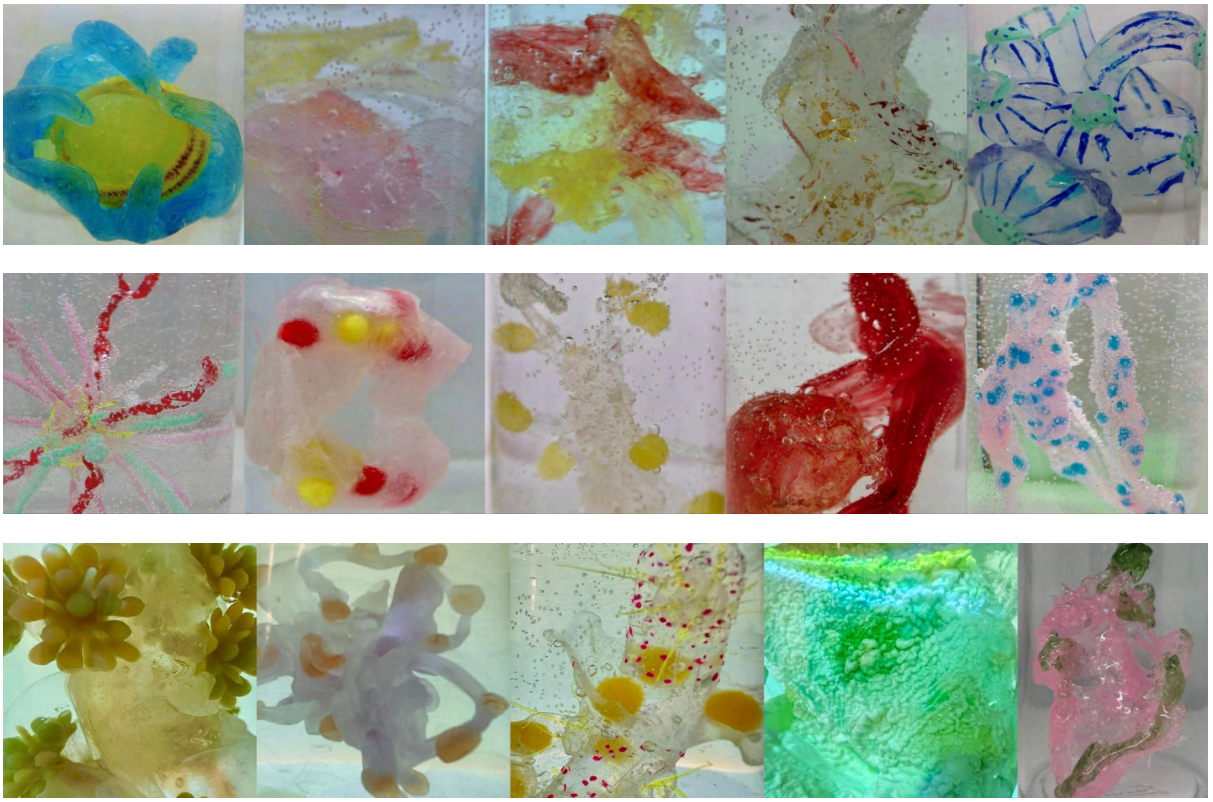

Fig. 20. Xuemei Zhou, 0.5 in Limbo, 2025. Detailed views of internal structures within specimen jars. Part of Everything Vibrates: MFA 2025 Thesis Exhibition

Based on feedback from viewers and the committee, when there is another opportunity to exhibit *0.5 in Limbo*, I will to incorporate more sensory dimensions—such as temperature fluctuations, nonlinear soundscapes, and even changes in scent or humidity—to enhance the viewer's spatial perception. I will continue exploring ways to open the database, transforming the laboratory from a static exhibition into a dynamic system that can be accessed, altered, and reconstructed. Ideally, this would realize the project's decentralized, ever-evolving nature, and will involve research and development of a suitable technical approach to achieve this.

In a broader sense, this project has become a way for me to make sense of the world—not by offering fixed answers, but by creating new ways of seeing and experiencing the familiar. Perhaps this is where *0.5 in Limbo* finds its meaning: not in producing enduring objects, but in generating a field of experience—a space where new meanings continuously emerge. In this perpetually unfolding structure, every viewer becomes part of the creation, and every

interaction is an unfinished sentence. Meaning is not found in stable outcomes, but in what occurs through uncertainty and grows in the cracks. *0.5 in Limbo* does not aim to provide answers to the world—this work invites us into an open-ended process, where each participation becomes a new beginning.

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