A *quarterly digest from* RIGHT CLICK SAVE

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Your space for slow reading

Caring for Digital Art

SPECIAL REPORT

THE NETWORK PROTECTING DIGITAL ART

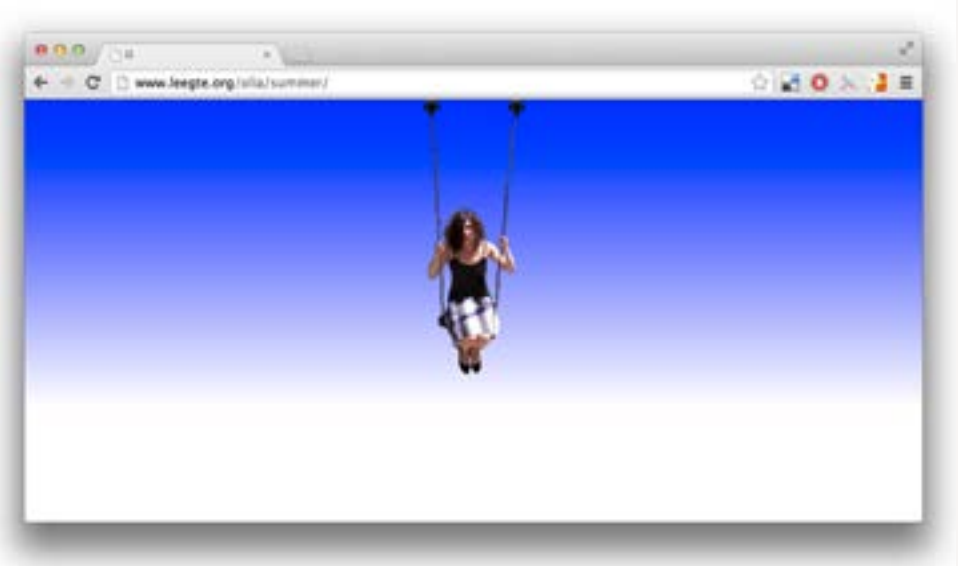
Gaby Wijers, director of the Amsterdam-based LI-MA, on how collaboration has been key to creating a global approach to caring for media art and its history

ON COLLECTING AND PRESERVING NFTS

Edouard, the creator of the risk-auditing platform NFTimeless, discusses storage, preservation, and digital art collecting

REFLECTIONS ON RIGHT CLICK SAVE

As they move into advisory roles, the magazine's Founding Editor, Alex Estorick, and Head of Community, Danielle King, discuss sensemaking in the new art ecosystem



Olia Lialina, *Summer*, 2013. Screenshot. Courtesy of the artist

INTERVIEW

"I want to be part of keeping the history of the web alive"

Olia Lialina on why she sometimes tries to call herself a web artist

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EDITOR'S LETTER



"Conversations on Digital Art" at LACMA, February 25, 2026. From left: Linda Tadic, founder and CEO of Digital Bedrock; the artist Lauren Lee McCarthy; and Stacie Martinez, Director of Studio Daniel Canogar, Los Angeles

Acts of Caring

Since the launch of *Right Click Save* nearly five years ago, the task of publishing has been a daily act of demonstrating care, through critical awareness, for art of the digital era. In this third edition of *Art & Tech* — our quarterly PDF and print edition of articles published as a slow-read distillation of the magazine — we look at how artists, curators and conservators alike care for the history of digital art as well as the software and hardware that expresses and houses it.

In the opening essay, Alex Estorick, our Founding Editor, and Danielle King, Head of Community — as they move to advisory roles at the magazine — write of the challenge of curating a chronology of digital art in the wake of the NFT hypecycle of 2021. Their words catch the ephemerality of code, software, monitors, and networks: "When we launched *Right Click Save* in January 2022, the job was to keep up. A new community was assembling itself in public, across Discord servers, Twitter Spaces, and mint pages, and someone needed to document it before it disappeared."

The magazine's allies in that task over the past five years have been artists, connected through new, ungated marketplaces, curators, historians, and gallerists; as well as those who specialize in the preservation and archiving of art made with emergent technologies, from net art to AI.

Two of the articles cover a day of conversations on the preservation of digital art held at LACMA in February 2026. In her reflections on the discussions, the scholar Zsofi Valyi-Nagy writes that "it is our duty to take care of our technology (caretaking is, after all, the original meaning of curating)". That language of care is also used by Gaby Wijers, director of LI-MA, Amsterdam, who says, in her interview: "Over the years we have changed the vocabulary, from the preservation to the caretaking of media art." For her, the term "care" is indicative of the continuing process involved.

Part of *Right Click Save*'s role is to capture new framings for the intersection of multiple art worlds. In his "Seven Worlds of Digital Art | A Visitor's Guide", the media theorist Lev Manovich references historical digital art as the first such world, one that brings with it questions of "historical influence, documentation, preservation, and conservation".

Welcome to the latest slow-reading journey in company with the *Right Click Save* community of artists, curators, conservators, and writers. We hope you enjoy it.

Louis Jebb is the Managing Editor at *Right Click Save*

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Vantage x Kidmograph, (Still from) Highway Cruise, 2020.
The first NFT collected by Alex Estorick

REFLECTIONS ON RIGHT CLICK SAVE

As they move into advisory roles, the magazine's Founding Editor, **Alex Estorick**, and Head of Community, **Danielle King**, discuss the ascent of sensemaking over tastemaking in the new art ecosystem, and the publication's role in preserving the history of art of the digital turn

Once the initial hype surrounding the NFT boom started to die down, we encountered a common refrain in the digital art space: "Can't we all stop talking about NFTs and just get back to talking about Art?!"

As the representatives of a magazine dedicated to radical inclusivity, our answer was always the same: "Of course you can, but if you do you'll be ignoring the communities of digital artists, especially those in the global majority, who can make a living only thanks to NFTs". Suffice to say, NFT is no longer the most popular word in the English language (as it was in 2021), and, sure enough, old habits have returned. The prospect of a different art ecosystem defined by decentralization, disintermediation, and resale royalties now feels like a mirage, while much of the vital infrastructure on which the new cultural economy depended — including this magazine's original parent company, ClubNFT — has been forced to close.

As big a debt as the world of digital art owes Jason Bailey, who cofounded ClubNFT in 2021 and whose blog Artnome first documented crypto art, without the vision and investment of Tony Lyu, who purchased *Right Click Save* in 2025, whole swaths of recent art history — as well as the personal stories of multiple generations of artists — would have been put at risk.

When we launched *Right Click Save* in January 2022, the job was to keep up. A new community was assembling itself in public, across Discord servers, Twitter Spaces, and mint pages, and someone needed to document it before it disappeared. Our 2022 conversation with a panel of generative art collectors clarified how the new wave of open platforms was transforming a traditionally private, solo endeavor into a social one. Without a single authority determining what counted as "good" art, its value was open to negotiation between those taking part. The recent closure of fxhash underscores why such conversations are worth recording: the communities that form around such infrastructure can outlast it, but their histories need somewhere to live.

While we have left no stone unturned in seeking to unveil overlooked histories of digital art, the job of documenting people and practices that tend to be ignored is never done. Though it is truly saddening to witness the decline of a genuine alternative to centralization, hierarchy, and gatekeeping, the process of bringing two worlds together — one of *Right Click Save*'s priorities — is helping to foster new behaviors. If artspeak remains the *lingua franca* of the art world, today a visit to one or another "blue-chip" gallery feels less exclusionary.

While it would be wrong to claim that *Right Click Save* has somehow rewired the art world, its growing archive of interviews with artists who fall between the cracks represents a vital repository and warning to curators inclined toward narrow narratives.

Moreover, by (incessantly) stressing the hybrid reality of contemporary art practice, which increasingly fuses analog and digital media, and human and non-human agents, we are convinced that the people and values of what was once a digital underclass will come to define the terms of the new art ecosystem.

If FEMGEN was a moment when crypto conversation matured, by the time we posed the question in 2024: Where Next for Digital Art?, the early optimism had given way to scrutiny. Our role soon began to shift as the institutions of the established art world paid greater attention to practices whose meaning had developed through unfamiliar channels Each world was intrigued by the other, but much was getting lost in translation.

At *Right Click Save*, we believe that by representing the values of a community whose common language is code, we are well placed to make sense of the growing entanglement of art with technology. Indeed, our core principle of letting the language of artists shape the terms by which their work is evaluated can help to ensure that the value of art doesn't depend on the arbitrary decision-making of a new class of tastemakers. (Which isn't to say that artists shouldn't be scrutinized for the language they choose to use.)

This also means giving readers the context to understand why something matters to the people who made it, especially when their practices challenge familiar definitions of art. Our weekly newsletter works in the same spirit, connecting developments across the ecosystem so that readers encountering digital art in a museum and those participating in an artist-led platform feel they are part of the same conversation.

That conversation now has a home of its own in the Forum. Whereas a magazine is capable of offering considered perspectives, a community needs somewhere to think out loud. When readers challenge an argument or sharpen an idea first raised in an article, they shape the discussion themselves. In this way, the openness that made platforms like fxhash or Hic Et Nunc meaningful can also inform the life of a publication, whose capacity to make sense of rapid change depends on its ability to listen.

In the five years since digital art went mainstream, the relationships between humans, machines and nature have been fundamentally transformed. As we reflect on this period, one imperative will continue to guide the editors at Right Click Save: art writing today must be an act of sensemaking, not tastemaking.

As we move into advisory roles, we do so with the conviction that the magazine's future belongs to the colleagues and communities who will shape its next chapter. Originality, criticality, and plurality remain the DNA of Right Click Save, which has always been a listening exercise for artists working at one intersection or another. Under Tony's stewardship, the new team has the opportunity to give these principles fresh expression while continuing to spotlight artists making sense of new technologies. We can't wait to support their work as they open up emergent possibilities in a more inclusive art ecosystem. And we would like to thank all of the Right Click Save community for supporting the magazine both online and in person over many years. It has been the honor of a lifetime. ▮

Read the full article here at rightclicksave.com



Panel discussion on "The Image After AI" at Creative Intelligence, Southbank Centre, London, 2026, with speakers (from left): Alex Estorick, Sougwen Chung, K Allado-McDowell, and Jazia Hammoud

COURTESY OF THE ARTISTS

PETE WOODHEAD

Alex Estorick is a writer, editor, and curator based in London. As the Founding Editor of Right Click Save, he seeks to develop critical and inclusive approaches to emerging technologies. He is also an Associate Lecturer in the Department of Computing at Goldsmiths, University of London. He writes for various publications, from Artforum to the Financial Times, and was lead author of the first aesthetics of crypto art. His edited volume, Right Click Save: The New Digital Art Community, is published by Vetro Editions. He is also Vice Chair of the Estorick Collection of Modern Italian Art.

Danielle King is an artist, writer, and curator based in Western Massachusetts. She studied studio art and art history at Harvard University. Her recent work utilizes AI technologies to create alternative art histories, explore memory and the duality of self, and investigate capitalist and art historical ideals of beauty, femininity, and motherhood. After receiving her MBA from the Yale School of Management, Danielle spent eight years managing the Department of Painting and Sculpture at the Museum of Modern Art in New York.

INTERVIEW

MEMORY INSTITUTIONS | THE ECOSYSTEMS OF DIGITAL ART PRESERVATION

Michael Govan, CEO and Wallis Annenberg Director of LACMA, and Michael Connor, Executive Director of Rhizome, spoke in the opening session of a day of "Conversations on Digital Art" at Los Angeles County Museum of Art (LACMA) on February 25, 2026

RIGHT CLICK SAVE

It has become abundantly clear that digital art preservation is about more than right-click save (pun intended). Broken links, obsolete software languages, unobtainable hardware, and lost meanings and contexts are just some of what comprise more and more of the landscape of digital culture, and give headaches to museum conservators entrusted with caring for digital objects — objects entangled with the material world and the social spheres from which they emerge and in which they live.

Nolen Royalty's *Solitaire Alone Together* (2026) is a good example. In a recent exhibition "Websites! Websites! Websites!", presented as part of Rhizome's 30th anniversary, visitors could play Solitaire alongside one another, with each other's game also displayed on the other's screen. Solitaire, a single player game, came pre-installed on Microsoft Windows systems which had, ironically, promised greater connection between people. In the work, players interact with the game displayed on a cathode ray tube (CRT) monitor, an endangered species of computer hardware. To be sure, the hardware was material to the work, as highlighted by a settings slider in the interface that allows users to mimic the visual effect of a CRT if the work is displayed on a modern computer monitor.

Those of us old enough to remember burning time during the 1990s and early 2000s, remember Solitaire embodied in CRT monitors. The game's fate in the collective memory is inseparable from the hardware on which it was played.

The effect of these overlaps on the preservation of digital art was the topic of the following conversation between Michael Govan, CEO and Wallis Annenberg Director of LACMA, and Michael Connor, Executive Director of Rhizome. Their discussion, which has been edited for length and clarity, presents works of digital art not as standalone objects, but as part of larger ecosystems.



Francis Alÿs, *The Thief* (detail), 1999–present . Collection of the artists, commissioned by Dia Art Foundation for the Artist Web Projects series

Govan remarks that Connor calls museums "Memory institutions". By blending preservation, conservation, and display with the concept of memory, Connor intersects art with personal and social spheres. And indeed, in the on-stage conversation on the evolving landscape of digital art, Govan and Connor both move between artists, collectors, communities, and institutions, to identify various strategies in the preservation of digital art.

Govan and Connor understand digital art as no longer solely a technical matter, with preservation implicated with ecosystems that extend far beyond the digital file; ecosystems that guide answers to questions like "What do we preserve, how, and why?"

Michael Govan: You call institutions like the Los Angeles County Museum of Art (LACMA) 'memory institutions'. Over the years, Rhizome has kept net art alive by creating a history and a presence for digital art. As Rhizome was evolving, there was a bubbling energy that art was really changing and that we needed to make room for all this innovation. How does your work at Rhizome connect with big memory institutions like LACMA, which have thousands of years of art history and objects of every kind?

Michael Connor: Rhizome started in 1996, which makes the organization 30 years old — old in internet time. We started as a very fluid organization led by artist Mark Tribe. He was interested in starting a new media community and gathering people to develop a shared language around the emerging field of new media art, which people were just coming to terms with. By 1999, Mark and the Rhizome team decided to start an archive because they realized what a huge problem memory is in digital culture.

Technological change is something that is done to us, and a lot of the upgrades and new models that are forced upon us are not necessarily better than what came before. Retaining a sense of what our digital lives looked like in the past and what kinds of things we were expressing and sharing requires a serious resistance against the entire flow of technological change.

That kind of research has been an important part of Rhizome's ethos, even as we've continued to support experimentation. In practical terms, that means we research how to preserve software and network culture. Back in the 1990s, people didn't think about how we keep a server online, what happens when web standards change, and what happens when the browser changes — those are the kinds of things that have become big parts of our research and quest to preserve digital objects and memories.

MG: So much art is about how it's a vessel to carry ideas forward across time and generations, and a lot of that is about reckoning with the fact that we're human beings and have limited lifespans. Is cyberspace infinite and forever? Can you feel it? Is there death in cyberspace?

Francis Alÿs made screensavers on video monitor screens. His work The Thief (1999) was a black-and-white animation of a trapezoid-like window with a figure that entered it. It was a riff on Windows at the time, which was the main operating system. You could see the silhouette of the figure going towards the window, putting one leg into it, putting the other leg into it, and then jumping through it, and it repeated over and over again. It was so emotional, beautiful, simple, and powerful, as it was playing with the idea of the Renaissance window, which had over 500 years of history.

Early on, it was clear that you could create meaningful works with digital technologies, works that you couldn't create in any other medium, but without Rhizome, a lot of those artworks would die.

MC: The screen saver was such a big part of visual culture. Artists wanted to be in that space even though there was not a clear exhibition or market framework for it, and it was a great space for experimentation.

As far as The Thief itself, the screensaver was run on a software system from 1999, and hardware, like the CRT monitor, from 1999, which is also part of the artwork. When you see the work on a CRT monitor, it kind of looks like the reflection of a window, but then it also kind of looks like you're looking at someone coming in from a window behind you. I don't think that translates to the age of the retina screen in the same way.

When we're conserving artwork at Rhizome, before we do anything, we have to decide what the object is, because there isn't just a single object there. We have to decide how to date it, if it was presented or reperformed on different occasions. Here we may ask, do we need to include a CRT monitor so we have that reflective quality?

Retaining a sense of what our digital lives looked like in the past and what kinds of things we were expressing and sharing requires a serious resistance against the entire flow of technological change."

Michael Connor

In the case of The Thief, they actually rewrote it a number of times to update it for new operating systems. At Rhizome we would call that kind of strategy a sort of migration, interpreting it for a new system. A lot of what we do is emulation where we would take a piece of software from 1999 and we maintain the system from 1999 so that we can run the software in its original system without changing it. The advantage of that is that we hate to rewrite things because it's expensive and takes a lot of time. But a project like that also belongs on your screen, so I think it actually should be updated and continue to circulate even if it means that it changes too.

MG: You're nestled in the New Museum, but you're independent, and there has always been a complicated relationship between the work Rhizome does and the institutions of the art world. What are some tensions you can identify?

MC: 10 years ago, with Dragan Espenschied as our preservation director, we felt like we were running against the grain: when



Michael Govan, CEO and Wallis Annenberg Director of LACMA (left), and Michael Connor, Executive Director of Rhizome, opened the "Conversations on Digital Art" at LACMA

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a museum collects a CD-ROM, they make sure that the CD-ROM, as a physical object, is perfectly preserved, but the real issue is how to run what's on that CD-ROM. Our ethos at Rhizome was entirely opposite of what museums did; we were trying to make systems that could maintain digital works over time.

Another quality of digital culture is that it's also a participatory mass culture of makers and circulation. Works are made by contemporary artists, but similar experiments are performed by many people on the web.

Digital art resembles kinds of folk culture, and museums have always neglected folk culture, partly because they found it difficult to incorporate in their collections.

At Rhizome we try to stay a little closer to communities and adopt a ground view that is important for thinking about digital culture historically. The more formal institutions could in turn provide sustainability and a long-term framework for these works. The ideal is to have a synergistic relationship between these two.

MG: In the 90s we thought the future of digital preservation would be software emulation, but we weren't really thinking about circumstances and contexts that had to be recreated, like CRT monitors.

As museums, we struggle because the number of things you have to take care of is exponentially growing. So, with part of it we're unable to have the necessary expertise. I don't think we can exist in this world without partners like Rhizome. Museums, as memory institutions, need to build friendships and partnerships with organizations that are focused on the technical side of art.

MC: The ideal scenario is that we develop tools and infrastructure that organizations can use to create their own meaningful archives.

Digital preservation requires thinking about an even larger ecosystem that also includes hobbyists and open source systems — like film projectors that only exist because collectors keep them alive in their garages.

There are entire ecosystems of people that are just passionate about something and that also reminds us that the things that survive are the things that people care about beyond the institution.

MG: A good example of that is works by artist Thomas Wilfred. They look like abstract paintings on digital screens, but then you go behind it, and it's like a bunch of little mechanical motors with turning light bulbs, turning platters, and tinfoil reflecting light onto a surface. There's one man, an astronomer from Los Angeles, who has kept this artist's work alive. Without this person, this artist would have disappeared from history. Our job is to encourage that because we would not be able to do what we do without a lot of friends who make up a mosaic of care, like the community you have built around Rhizome.

> *"[Richard] Serra said, 'You know what, there were a lot of things we made that weren't meant to last; they were just meant to be gestures. Take a photograph, put it in the file, and then you can remember it as part of that. Not everything has to last.'"*
>
> Michael Connor

MC: People really care about and love Rhizome wherever I go in the world. It is an incredible experience, and very humbling, and it's a real responsibility to carry. My response to the very technical and complex problems of digital preservation is really just to help people connect with digital art and care about this field.

MG: One of the things we've been talking about in our future-oriented collecting here at LACMA is looking backward. If big chunks of history get left out or lost, you lose the thread. One of our roles here is to build a genealogy, because without it we can't produce meaning to project forward. To that extent, we've had exhibitions at LACMA about early computer-related art and about how Photoshop changed the world and changed artists' practice, for example, drawing lines across history. As a historian, can you summarize for us where AI Art fits in the history (and future) of art?

MC: Artists have been experimenting with computer networks for as long as computer networks have existed, but those histories are extremely difficult to access. The nature of that kind of work is by definition a little bit ephemeral, since a lot of these works are about connecting people, and the works only exist through the connection of people. The Most Wanted Paintings (1995), by the Russian emigrant artists Vitaly Komar and Alex Melamid, had a website, but the website and the final images were the documentation of a process — a survey that was taken on a network to determine what people of each country prefer in their paintings.

Works can take on great importance for a particular community but then just disappear completely. Unless you are a part of it or have some access to it, it would be really hard to understand what even happened.

Net art is full of micro movements and micro moments, like a group of people organizing around the Y2K aesthetic on Tumblr in the 2010s. Whatever it is, these moments that emerge and become conversations among a group are hard to historicize. My own path to net art began in 1999 when I met Alex Galloway, then editor of Rhizome, and he told me about a project called Toy War.

ToyWar was by a collective from Zurich, Switzerland called "etoy". They had picked their name through a generative computer program that was picking brands. After etoy was founded, an American toy company called etoys came about. A battle for the name ensued between etoy and etoys and a California court ruled that etoy had to shut down. So they went to war on the internet and that involved a website which would reload etoys.com over and over again, slowing down their server traffic during the busy Christmas season in 1999.

I went back to the computer lab where I worked and I put every computer to the etoy website. I remember standing there, looking at something like 30 computers reloading the etoys website, and I thought, "This is cool. What is this?" It's about being a part of something.

Audience Questioner 1: AI models have progressed and changed so drastically in just a few years and there's so many of them. I've been concerned that early AI models will disappear. Is there any effort to preserve those earlier models?

MC: In the past, Rhizome's ethos has been very software focused. Dragan Espenschied, our preservation director, says hardware is nasty stuff. He doesn't like to touch it. But I think AI models are one of the areas where you have to do a bit of both because we can't abstract those systems yet.

One of the interesting problems of AI is that they're so hardware intensive that there tends to be a really strong relationship between the software systems that are running and the hardware that it's running on.

MG: There are also ways to collect artifacts so that differences might be demonstrated visually. We have collected artworks that made use of early AI where the artists know

Read the full article at rightclicksave.com



Richard Serra, Scatter Piece, 1967. Dia Art Foundation; Gift of Christie's



SERRA: © RICHARD SERRA/ARTISTS RIGHTS SOCIETY (ARS), NEW YORK. PHOTOGRAPHY BY BILL JACOBSON STUDIO, NEW YORK. COURTESY DIA ART FOUNDATION, NEW YORK. DEJOONG: © CONSTANCE DEJONG, TONY OURSLER, AND STEPHEN VITIELLO

Constance DeJong, Tony Oursler, and Stephen Vitiello: Fantastic Prayers (detail), 1995. Collection of the artists, commissioned by Dia Art Foundation for the Artist Web Projects series

it's going to be a capsule of how things looked at a particular time.

MC: We're always trying to build context in some way, and I think already we're doing that for early AI. Not all these things are going to survive, but it is important to remember that it is also an artist tool and we don't always archive artist tools, though being able to look back is really powerful for people.

Audience Questioner 2: Over the last 20 years we've seen many technology platforms die, and with it, you lose a ton of art. What role do you play in conversations with technology companies and platforms, like Adobe Flash or Instagram for example, about their responsibility for the legacy of these platforms?

MC: Flash was huge for artists and is a little bit of a success story in terms of preservation. There's a distinction between a platform and a software tool, between something entirely contained within your browser or computer (which is a little easier even if it's proprietary) and something that's up on the cloud and locked into someone else's infrastructure. A few years ago at Rhizome, Flash seemed like an unsolvable problem because it was such a black box, but there's been a lot that's happened that allows accessing it now.

We had conversations with technology platforms about preservation, and it would be great for platforms to think about preservation as part of their end of life. But it never really happens. One thing to say is that an artist using open source tools is really powerful for those reasons.

MG: It's a good strategy for artists to talk to Rhizome about how you can make your work more durable, because there are ways to do it.

MC: However, some artists don't want their work to survive in the same way. Sometimes Net Art is meant to be in that particular corporate locked down platform for that moment and to then exist in that way regardless of what survives.

MG: I should also add that if everything survived, it would be a disaster. That's why I say artists are also very good editors. Artists decide what from the past is worth moving forward. A lot of things can't survive; otherwise, we wouldn't be able to maintain it all. The artist Richard Serra worked in the 1960s with a lot of fiberglass, plastics, and rubber that were UV- and oxygen-sensitive. His work Scatter Piece was on view at Dia Beacon, and the conservators said UV and air were going to kill it.

Serra said, "you know what, there were a lot of things we made that weren't meant



Nolen Royalty, Solitaire Alone Together, 2026

to last; they were just meant to be gestures. Take a photograph, put it in the file, and then you can remember it as part of that. Not everything has to last."

Audience Questioner 3: How do you balance artist intention with changing technological standards?

MG: There are a lot of examples in video art, because technology was moving more slowly. Nam June Paik didn't live to see how difficult it would be to just get a monitor. We try to keep all the 80s and 90s television monitors we can for those works, but it is a pretty hard thing. One good thing about technology changing so fast now is that artists are seeing their medium emerge and disappear and are taking a more active role in that.

MC: At Rhizome, there's a lot of emphasis on artist intent in the conservation field though we try to distance ourselves from it a little bit for two reasons: The first reason is that we are not well resourced and we try to do things at scale, so we don't always get to take the white glove approach for every individual work. The second reason is that sometimes the artist's intentions, especially when it comes to technology, are illegible as time passes. They often misunderstand a dependency within their system, or they might describe something that doesn't exist in the same way, or something that seems default to them at the time won't actually exist in 10 years. For that reason, descriptions by artists are sometimes not that helpful.

If you rewrite an artwork from the 1990s for modern browsers, you need to remember that the screen size back then was approximately 800px by 600px and that it will look so different on a large screen, changing the composition entirely. At the same time, there are works like Eva and Franco Mattes's Life Sharing from the early 2000s that were less about the aesthetics of the work. It was like a performance where anyone in the world could access their computer. You could log in and check their email, see their photos, etc. What was important in that work was that there was a kind of transparent window through the web into a file system, so when we restored it at Rhizome, we just put it online in a normal browser and had to update it on the back end to make that work, which was more in keeping with their intentions and felt like more part of the ethos of the project.

And another important thing we need to balance is that beyond artist intention, when an artist makes something, it belongs a little bit to the public after that.

Michael Govan joined the Los Angeles County Museum of Art (LACMA) as Chief Executive Officer and Wallis Annenberg Director in 2006. In this role, he oversees all activities of the museum. During his tenure, LACMA has acquired by donation or purchase more than 46,000 works for the permanent collection, doubled gallery space and programs, and more than doubled its average annual attendance to well over one million. In 2026, the museum opened a new, state-of-the-art permanent collection building designed by Pritzker Prize–winning architect Peter Zumthor.

Michael Connor is Co-Executive Director of Rhizome, where he oversaw the Net Art Anthology initiative, an effort to retell the history of net art through 100 works, presented as an online exhibition, gallery exhibition, and book. He is also curatorial advisor for Kadist, a non-profit contemporary art organization, and Art Blocks, an NFT platform. His first online curatorial project took place in 2003 at FACT, Liverpool, where he organized an edition of the traveling exhibition, "Kingdom of Piracy". Connor is currently editing a book by Gene Youngblood about the work of Kit Galloway and Sherrie Rabinowitz.

NOLEN ROYALTY, SOLITAIRE ALONE TOGETHER, 2026. PHOTOGRAPHY BY RIGHT CLICK SAVE

COMMENT

SLOW DIGITAL | THE ART OF MEDIA ARCHAEOLOGY

Zsofi Valyi-Nagy reported for *Right Click Save* on "Conversations on Digital Art", the day of talks on the preservation of digital art held at Los Angeles County Museum of Art (LACMA) on February 25, 2026. This is an extract from her reflections on proceedings that opened with a discussion between Michael Govan, CEO and Wallis Annenberg Director of LACMA, and Michael Connor, Executive Director of Rhizome. (See pages 6-10)

The "Conversations on Digital Art" at Los Angeles County Museum of Art (LACMA) focused on the evolving landscape of digital art conservation, preservation, and display. The first panel discussion, between Michael Govan and Michael Connor, set the tone for the day with the idea of "slow digital". When everything is moving so fast in digital art and culture, how do we preserve the past, present, and future?

The subsequent discussions looked backwards as much as forwards, slowing down in the face of "upgrade culture" to examine what we can do to preserve digital media as well as the conversations happening around the work. They touched on the importance of thinking about digital art not only as objects to preserve or files to back up, but also, as Connor emphasized, as elements of an ecosystem, interdependent on the communities that make and maintain them. This is especially crucial given digital art's precarious status on the margins of the mainstream art world.

One such community, spotlighted in the second panel, were art institutions' in-house media technology experts, such as Mark Ayala (LACMA's Manager of Gallery Media), Hannah Kirby (Tech Supervisor for Exhibitions at the Hammer Museum), and Andreas Korte (Head of Exhibitions at the Julia Stoschek Foundation, Berlin). Ayala emphasized that digital art, old and new, exists not just as an abstraction — software and files — but also in physical form. He also stressed the importance of collaboration and communication between audiovisual (AV) experts, both within and outside of art institutions, artists and their estates, and curators.

The third and final panel focused on "preservation in practice". LACMA's digital preservation manager, Joey Heinen, spoke with the artist Lauren Lee McCarthy, Linda Tadic (founder and CEO of Digital Bedrock) and Stacie Martinez, director of Studio Daniel Canogar's LA outpost. Tadic, who brought a "show and tell" bag of physical data storage formats — including a DNA data storage drive not yet available to consumers — spoke on the importance of environmental sustainability in the face of technological obsolescence.

Overarching themes were the importance of documentation and the need to bridge the communication gap between digital art, film and television, the corporate sector, and third-party tech companies.

McCarthy emphasized the need for work not to be defined by its platform or technology, whether it be the blockchain or an early iteration of an AI model, and the importance of tinkering and hacking as tools and APIs become closed off from their users. For McCarthy, documentation is important not just from a technical perspective but for our future selves to be able to "look back on and hold a different key to understanding what was happening" in a particular time and place.

How do we keep a work of digital art "alive"? It is curious to speak of these objects in terms of life and death when they are technically inanimate. But such terms were adopted in all three panels — Govan spoke of the "death" of early web-based work, Ayala of "dead tech" such as Flash Player and the "lifespan" of CRT monitors, and Heinen of "how art collections live through various relationships and ongoing challenges". For Tadic, even "bits have to live on something".

There was no talk of resurrection, per se, on the LACMA panel, though a lot of what these people do — especially the likes of Ayala and Kirby — might be described as a kind of necromancy.

Curators and media specialists act as media archaeologists, buying obsolete technology — from overhead projectors to Commodore Amigas — on eBay in order to run artworks in their native environments. These technologies are hacked and modified, often running as hybrid machines that incorporate historic and current technologies -- the hard plastic shells of vintage tech often housing Mac Minis, Raspberry Pis, or software emulators.

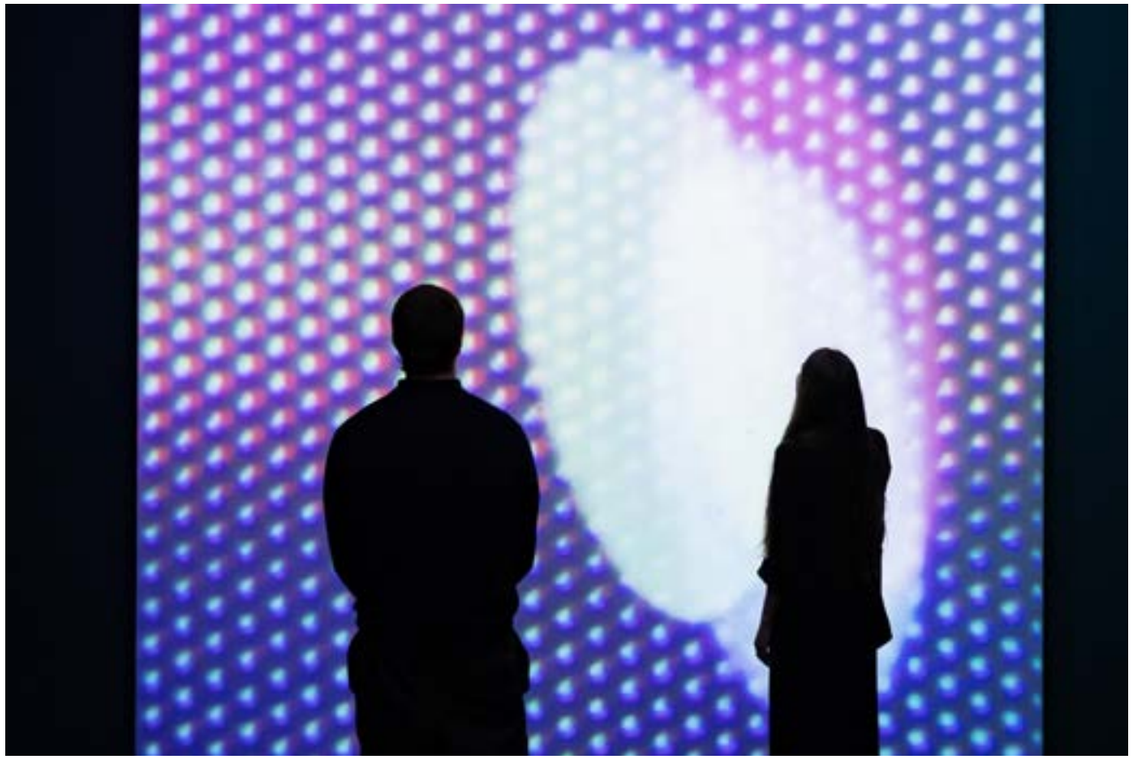
Lauren Lee McCarthy spoke about the nuances of documentation. Her project, LAUREN (2017), a custom smart device that recalls Amazon Alexa, is constantly undergoing software updates, including different versions of her AI voice clone. McCarthy has chosen to document this work selectively, preserving earlier versions only in trailer-style short videos rather than comprehensive documentations of each performance.

Talking about the life and death of tech may just be a metaphor. Or, perhaps, it's more than that. Maybe artists and institutions would benefit from (re)turning to a sort of animism, a belief that all objects, even those we call "inanimate", have a soul or spiritual essence of some kind. Especially in the face of the environmental destruction our species has caused, it is our duty to take care of our technology (caretaking is, after all, the original meaning of curating), to call ancestral knowledges to better understand these materials and how we relate to them.

Ultimately, McCarthy encourages us to consider what is inherently human in our approaches to these technologies, especially as boundaries between human and artificial intelligences and identities are increasingly blurred. How many of the words you wrote or spoke today were prompted to you by an AI agent? How many were really yours?

Zsofi Valyi-Nagy is a Los Angeles-based artist, writer, and art historian interested in the relationships between art, technology, gender, and disability. Zsofi is currently a Visiting Assistant Professor in Art History at Scripps College in Claremont, California, where she has a growing collection of vintage computers.

Read the full article here at rightclicksave.com



LI-MA x Nxt Museum, “Pioneers of Media Art | The First Years of MonteVideo”, installation view at Nxt Museum, Amsterdam.

A NODE IN THE NETWORK PRESERVING DIGITAL ART | LI-MA

Gaby Wijers, director of the Amsterdam-based organisation, on how collaboration, and knowledge-sharing, has been key to creating a global approach to caring for media art and its history

LOUIS JEBB

Gaby Wijers is director of LI-MA — Living Media Art, the Amsterdam-based organisation dedicated to the presentation, promotion and preservation of media art. LI-MA takes care of 10.000 artworks from over 50 international institutions, for 900 artists, advising on the presentation and care of media art. The organizations it collaborates with include Centre Pompidou, Paris; Rhizome, New York; and Tate in the UK. It also collaborates with universities and archives, and actively with some 200 artists, including Rafaël Rozendaal, Jan Robert Leegte, and Jonas Lund. In March 2026, the organisation held Transformation Digital Art, its 10th annual international symposium on caring for digital art.

Over the years we have changed the vocabulary, from the preservation to the caretaking of media art. Because it is not only a matter of preservation, but of continuous care. Something is not preserved. It needs care over time.

Gaby Wijers

This year, LI-MA has collaborated in the exhibition “Pioneers of Media Art | The First Years of MonteVideo”, which is at Nxt museum, Amsterdam. The exhibition looks back at the formative years of MonteVideo, the first gallery dedicated to video art in the Netherlands, and one of the forerunner organisations behind LI-MA.

Wijers spoke to Right Click Save about the history of LI-MA, and the pioneering Dutch organisations that came before it, her own role in its development and the important part that collaboration plays in creating an international knowledge base around the care of digital art. LI-MA is, she says, “not a very big institution, but has a big impact since it is part of a huge network”.

PHOTOGRAPHY BY MAARTEN NAUW

Louis Jebb: Please could we start with LI-MA’s background story and its work today.

Gaby Wijers: LI-MA is an organization, started 13 years ago, but deriving from forerunner institutions dating back nearly half a century, dedicated to the presentation and promotion of media art, and to its preservation, so that these works may be enjoyed in the future.

In the Netherlands, LI-MA is connected to a network for cultural heritage: involving museums, libraries, archives and networks such as NDE (Network for Digital Heritage). We are also partners of The Foundation for the Conservation of Contemporary Art. LI-MA is a node in all of these networks, providing our knowledge, our expertise, our care. And over the last year or two, we have been, more than ever, working on our archive and on artists’ archives.

LI-MA is rather unique because it’s not related to a museum or to a university, and it’s not a very big institution, but it’s part of a huge network. It is a place where different “blood groups” of expertise find a way to meet. And to exchange knowledge.

We think it’s super important to exchange. It’s not only about how to preserve a certain artwork and the strategies for doing so. It’s also very important to have an insight into how others do it and what we can learn from them and how we can collaborate. Everything we do, nationally, and internationally, is based on collaboration and knowledge-sharing.

LJ: How big is the team?

GW: We have a small core team, around five persons: a registrar, someone dealing with the distribution, another with communication, there is the business side and archive and preservation and I’m the general, and the artistic director. And then there is an expanded team — a big shell containing technicians, art historians, scholars, students and interns — who have technical and art and media historical knowledge, and who work on a project basis for smaller assignments.

LJ: Who are the institutions you work with on a regular basis?

GW: Our long-term partners include the Tate, ZKM in Karlsruhe, HEK in Basel, and Centre Pompidou. We have many Netherlands partners such as the Stedelijk Museum in Amsterdam; the Museum Boijmans Van Beuningen in Rotterdam; the Van Abbemuseum, in Eindhoven; and the Kröller-Müller Museum, at Otterlo.



Gaby Wijers, director of LI-MA, opening the 10th edition of Transformation Digital Art, Amsterdam, 2026k

PHOTOGRAPHY BY ALEX HEUVIN

We are involved in all kinds of international projects. In the UK, I am an Honorary Research Fellow at Exeter University and participate in projects there and at the University of Nottingham. We have worked a lot with them over the years, especially with Gabriella Giannachi, Professor in Performance and New Media at Exeter; and we collaborate on somabotics, led by Steve Benford at Nottingham, looking at AI in the production and presentation of robotic works. We also have a collaborative project that looks into how metadata from collections can be improved or shared; and another on bias in the work we do with AI technology.

LJ: How are you, as a non-profit, funded?

GW: We are funded by the city of Amsterdam. That is a four-year funding. That is not so much for our work in preservation. It is more for our role in the city, supporting artists, presenting works, providing knowledge, being part of the network, supplying artworks and presenting artworks in the Netherlands.

We are also funded in part by the museums and collectors that pay for the services we give them. And the rest is project funding.



The audience at Transformation Digital Art symposium, Amsterdam, 2026



Software Art Preservation Student Workshop, Transformation Digital Art, 2026, presented by Joost Dofferhoff (LI-MA) and Mauricio van der Maessen de Sombreff (LI-MA)

PHOTOGRAPHY BY ALEX HEUVINK

We can survive with that, but it's not the best way. So we're aiming for funding on a continuous basis; because the work we do sustaining these artworks and these legacies and these narratives is a work on a continuous basis.

That's not something you can do on a project basis. So we are looking for ways to sustain it. And with the organizations that outsource the care of their works to us, we are working on sustainable funding.

LJ: What can you tell us about the origin story of LI-MA?

GW: LI-MA comes from a long history of practices and institutions. We have a 50-year legacy in the development of media art in the Netherlands and abroad. Towards the end of the 1970s, René Coelho, a producer at the VARA, a broadcast company in the Netherlands, started a gallery called MonteVideo. He was fascinated, and inspired, by the work of Livinus van de Bundt, one of the first abstract video pioneers in the Netherlands.

At that time, the new artform created a new model: new digital and other forms of technology-based art that came with a new attitude, style of communication, forms of audience engagement, and an infrastructure built in collaboration with artists — one that facilitated connection and community building. Getting access to the equipment for creating and presenting media art — and to the whole of what we call in Dutch the denkraam, or concepts, of this form — was a challenge. The machinery was both large and expensive.

At the time, Livinus van de Bundt made his own machines in collaboration with his son Jeep and created a lot of artworks that were shown at festivals. It was a time when The Vasulkas, Bill Viola, Nam June Paik, Nan Hoover and other pioneers were often in the Netherlands to present and promote their works. And MonteVideo was the place that produced and presented a lot of works.

Over time, MonteVideo grew into a larger organization. It was always rather technically oriented and its concern with media art came to be fused with that of the Time Based Arts Foundation (TBA). This was the video section of de Appel, a contemporary art organization in Amsterdam that at the time was also dedicated to performance art. MonteVideo and TBA fused in the early 90s, and became, later in the decade, the Netherlands Media Art Institute (NIMk). NIMk was founded to support artists and institutions in finding ways to use new technology in producing new artworks, in reaching out to new audiences, in thinking of new narratives, while acting as an agency, a distributor for the artists.

From the 70s onwards, artists were supported by MonteVideo, Time Based Arts Foundation, and de Appel, and artworks were selected to be presented worldwide. Over time, these distributor organisations, along with entities such as Electronic Art Intermix, New York, became repositories of knowledge about media artworks, video artworks, digital installations. They were directly rooted in artistic practice — an important consideration when working with media art, where a variety of versions of works often exist, applicable in different installations, different exhibitions, and different displays.

From the early 90s, Montevideo started to think about preserving video works, pneumatic works [using compressed-air mechanics], and other formats of media art, in collaboration with museums in the Netherlands, and the government collection. It was one of the first entities, together with the Bay Area Video Coalition (BAVC), founded in San Francisco in 1976, to start preserving these works.



Blast Theory, Cat Royale, 2023. In collaboration with LI-MA and presented by LI-MA at Transformation Digital Art, 2023, 2025, 2026.

PHOTOGRAPHY BY DAVID JW BAILEY/STEPHEN DALY

LJ: When did you join the Netherlands Media Art Institute?

GW: In the mid-90s. I was approached to make their catalog for the media art collection and told that everything from that time on would be digital. Not only the catalogue but also the artworks.

=So how to digitize the video material, all the artworks and the installations from here? That was my first challenge. From video art, the preservation focus and collaboration moved in time to installations, software-based art, performance and life art, online art/net art and virtual reality. I have a background in informatics, and theater, and I come originally from the library world.

"We are funded in part by the museums and collectors that pay for the services we give them. And the rest is project funding. We can survive with that, but it's not the best way. So we're aiming for funding on a continuous basis"

Gaby Wijers

Digital preservation, structuring information, and mediating between data, artist and users, so to speak, has always been the core of my professional work.

The Netherlands Media Art Institute grew, and became an international role model. It ran a lot of production, had artists in residency, and an education department. Unfortunately, there were large budget cuts for the cultural field also in the Netherlands, in 2010 and 2012, and the Netherlands Media Art Institute lost 100% of its government and regional funding.

We were keen at least to continue our work on preservation, research and knowledge services; maintaining infrastructure and networks; research; and supporting artists and the distribution of their art. LI-MA was set up as a not-for-profit organisation to carry on that work.

We scaled down the work with exhibitions and production, thinking that there were many institutions and many places where media art was produced and presented, but none that specialized in the presenting and preservation of media art, and all the related research. We took that as a point of departure.



LI-MA x Nxt Museum, “Pioneers of Media Art | The First Years of MonteVideo”, installation view at Nxt Museum, Amsterdam

LJ: How does LI-MA’s work relate to the rest of the art world, and to sharing knowledge about the care of media art?

GW: Media art has links with many different art forms. It is live, it can be interactive, it can be online, it can be screen-based, it has specific spatial requirements and might involve audience participation. So there are related connections with contemporary art preservation, with film preservation, with live art, with technology, with information and communication technology.

There are also a lot of connections to digital preservation in libraries and archives. But with media art, there is a specific artistic concept to preserve. So that it has needs that go beyond those of regular digital material.

On one hand, LI-MA has its network, and collective expertise. We are nearly 50 years in the field. So we have some knowledge, art historical, technical, and in media archaeology. We have a network and we take care of media art. Over the years we have changed the vocabulary, from the preservation to the caretaking of media art. Because it is not only a matter of preservation, but of continuous care. Something is not preserved. It needs care over time. Just as history needs to be written over time. Legacy media art formats need to be translated to new technology, new times, and to new generations in order to be properly understood. That is the phase we are in now. Caring for the media artworks, but also for the concept, the context, the practice.

Take media artworks from the 60s or 70s as an example. People have no idea any more about the production process of the time, and how unique such an artwork was. While today we are totally surrounded by screens and interactive material, 60 years ago artists had to go to a technical university to have access to a computer screen, to a color monitor. For that reason it is important we write narratives of “care over time”. And there’s a lot of work to be done there, in the Netherlands at least, and that will take time. But there is genuine momentum behind the need to bring the care of media artworks more to the surface.

At LI-MA we want to bring together the different groups who have care of media art. Some museums with media art in their collections deal with it in a certain way, one that could be either improved or better communicated so that others can learn from it. Then there are artists who have their individual ways of sustaining the work, or are looking for ways to do it. Both their work, and their archives.

Gaby Wijers is founder and director of LI-MA – Living Media Art, a centre of expertise in (new) media art based in Amsterdam. She previously worked at Montevideo/TBA/NIMk, Amsterdam (NL). Wijers has initiated, contributed to numerous national and international projects dedicated to the documentation, preservation, and accessibility of (new) media art and performance. These include CUSP, EMBARK, ArtHost, UNFOLD, Transformation Digital Art, Preservation of Media art Collections in the Netherlands, Inside Installations, Inside Movement Knowledge, Collaborative Infrastructure, Digitizing Contemporary Art, Digital Canon?!, Documenting Digital Art. She is an active member of various national and international networks such as the Foundation for the Conservation of Contemporary Art (SBMK), the Dutch Digital Heritage Network (NDE), and Network Archives Design and Digital Culture (NADD). She is a guest lecturer at the University of Amsterdam and honorary research fellow at the University of Exeter.

Louis Jebb is Managing Editor at Right Click Save.

. PHOTOGRAPHY BY MAARTEN NAUW

And then of course you have scholars and students — art students, art history students, technical students — all of whom have their own angle. LI-MA is a place where we like to bridge those differences. And we work internationally, with both institutions, and artists.

Besides being a knowledge institute, we also offer preservation services to museums and private collectors, and some archives outsource the maintenance of their media artworks to us.

We have a technical infrastructure where works are stored and monitored. Museums or the collectors also come to us for support with technical advice on how to present the work. We do this for about 70 institutions and provide distribution support to a couple of hundred artists.

We also do research into different preservation strategies for preservation or technical research — how to care, for example, for artworks made on Commodore Amiga PCs in the 1980s or how to preserve NFTs. We are also looking into other lines of preservation that are not so much the technical transfer of works to another system, not migration nor emulation, but representation — a transition of the concept to a different surface or to a different audience. That particular program is called Unfold and we have used it for projects addressing works by Dan Graham, Nan Hoover and the Vasulkas. And now are working on the legacy of the Dutch artist Moniek Toebosch.



Luna Maurer, performance of *Emoji is all we have*, Transformation Digital Art 2024, hosted by Nieuw Instituut, Rotterdam

LJ: How about the annual Transformation Digital Art symposium?

GW: This year we had our 10th edition. The first Transformation Digital Art edition — it then had a Dutch title, Transformatie Digitale Kunst — in 2016 was dedicated to the work of one digital pioneer in the Netherlands, Peter Struycken, whose work is in multiple collections. And for each work we, together with private and corporate collections, came up with a preservation strategy, and helped educate the institutions in it.

We made a nice video — “Digital art. Who cares?” — in collaboration with the Foundation for the Conservation of Contemporary Art. Rafaël Rozendaal also presented works at the symposium. We discussed the preservation of his work and we produced a video documenting the development of his work.

The following year, 2017, there was a similar collaborative project, Future Proof, but dedicated to the work of one media artist, Geert Mul. His digital, often interactive works needed both defining and a preservation strategy. Mul had a solo exhibition at the Stedelijk Museum Schiedam, where he wanted to present the works that were not in a collection. He had to take care of the preservation himself, and approached us for help. Together we made scripts and scenarios of how to preserve the work, and present it at Schiedam, and the symposium was held during the exhibition. Jon Ippolito [Professor of New Media, University of Maine, and formerly of Guggenheim, where he co-ordinated the museum’s Variable Media Initiative] and others presented thoughts of how to deal with digital artworks.

We made video documentation of the installation and preservation of Gert Mul’s work, in which we asked artists to speak in front of one of the works to describe its functionality and key elements. We also devised a questionnaire for artists, an artwork documentation tool, to use as a checklist of what to think about, and what information might be needed for the future.

From 2017 onwards another line of research was presented at the symposium, called ArtHost — to host online artworks for others and look into preserving online artworks. It was developed in collaboration with the artists Constant Dullaart and tested using work by artists including Martine Neddam.

This is how we work. We research particular cases, and extract generic questions or generic solutions, around how to present it and how to care for it. Or the other way around. Over time, we have created hundreds of case studies, and a knowledge base, taking us more into education.

LJ: Given your archival and educational work, have you been involved in creating genealogies for digital art?

GW: Some years ago we started work on a canon for digital art from the Netherlands. A collaborative project that we discussed in several places including the Transmediale festival in 2018. The Digital Canon shows 20 selected works of Dutch art. If you “flip” the website, you can read the argument behind the choices, and the discussions we had around defining and selecting. We showed these works in dialogue with nine commissioned contemporary artworks in an incredible exhibition, “Reboot”, at Nieuwe Instituut, Rotterdam, 2023-24.

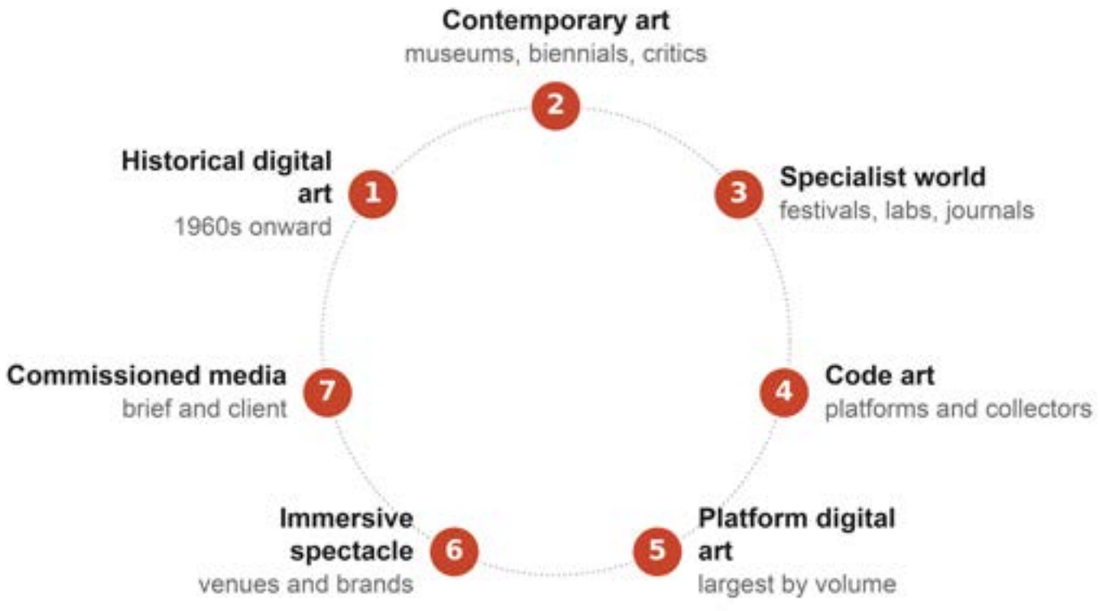
Many of the works had to be preserved before they could be presented. And, as we always do, we connected the process (under the title Digital Care) with the community, with the artists, and with different groups — to make the whole thing possible. ■

=PHOTOGRAPHY BY PIETER KERS

Read the full article here at rightclicksave.com

SEVEN WORLDS OF DIGITAL ART | A VISITOR'S GUIDE

The media theorist **Lev Manovich** proposes a new approach to categorizing digital art based on ideas from the sociology of culture, and his own experiences as a digital artist. Preservation and conservation are central considerations for the first category — historical digital art



Seven Worlds of Digital Art. Courtesy of Lev Manovich

What is "digital art"?

The usual answer is simple: art made with digital technologies. And technology indeed matters. We can divide digital art into categories depending on the tools used to make it, as well as output and exhibition formats. In fact, these are the usual categories used to classify digital art (net art, interactive installation, data art, and so on). But here I want to take a different approach, inspired by ideas from the sociology of culture — and my own experiences as a digital artist for over 40 years.

I began working with digital imaging and 3D animation in 1984, and started teaching and publishing about digital art in 1992. Over the next three decades I watched the field not only grow but divide. As new technologies and new opportunities appeared, new kinds of digital art developed — and each found its own audiences, criteria for evaluation, and support structures. I will refer to them as worlds, following a classic of the sociology of art — Howard Becker's Art Worlds (1982).

> *"Instead of asking only whether a work is good, original, popular, or whether it uses the latest technologies, we can ask: Where does it circulate? Who values it? What are the criteria for judging works?*
>
> Lev Manovich

Consider three hypothetical artists. One regularly sells digital prints and receives commissions from collectors who discover the work online — through Instagram, online marketplaces, portfolio sites, or artist communities. Another presents artwork in museums and biennials, where it is discussed by curators and critics. A third develops interactive installations involving robotics, scientific data, or custom AI models; occasionally publishes in specialist journals; and is known mainly in media art festivals and research communities.

All three make digital art. All may be successful. But what counts as success is different in each case, because each operates within a different professional and cultural environment.

These differences suggest a different way of approaching digital art. Instead of asking only whether a work is good, original, popular, or whether it uses the latest technologies, we can ask:

- Where does it circulate?
- Who values it?
- What are the criteria for judging works?

Today, digital art has at least seven overlapping worlds. Some of them did not exist 15 years ago, and another observer would draw the boundaries differently — this is one map, not the map.

Several of the artists and studios named below work across more than one world. I have placed each according to where the work is principally received and valued today, not where the career began. The movement between worlds is the subject of the diagrams that follow.

1. Historical digital art

Early computer graphics, generative art, video, cybernetic art, net art, and interactive work from the 1960s onward are increasingly part of art history. Here the central questions are historical influence, documentation, preservation, and conservation. Representative figures include Vera Molnar, Manfred Mohr, Georg Nees, Frieder Nake, Lillian Schwartz, JODI, and Olia Lialina. These are the artists who appear in the recent museum surveys of the field — "Programmed" at the Whitney (2018), "Coded" at LACMA (2023) and "Electric Dreams" at Tate Modern (2024–25) among them, with more since. Many of them are also active in worlds 3 and 4, where the same work is valued by different criteria.

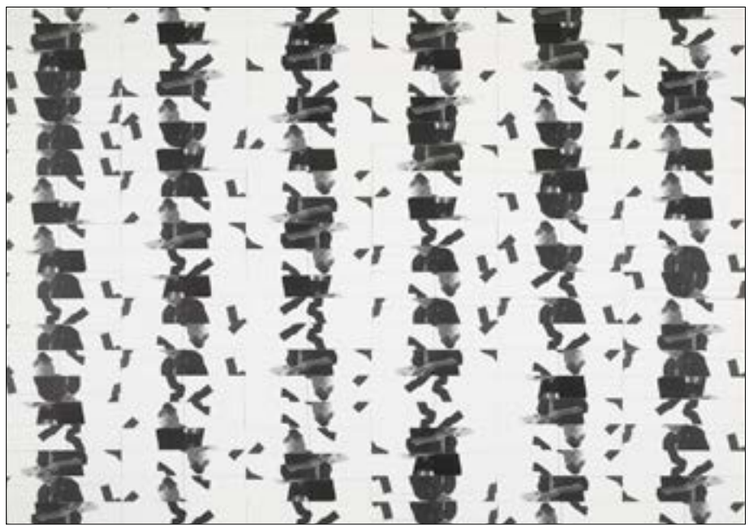
2. Digital practice in contemporary art

Artists who work in this world address an art audience, and their work is judged as contemporary art. It can take a variety of forms, such as data visualization, virtual worlds, generative images and video, and interactive installations. Many engage larger questions — power, labor, ecology, surveillance, identity, infrastructure, the changing conditions of culture — and take a critical position toward the technologies they use: Hito Steyerl, Trevor Paglen, Forensic Architecture, Cao Fei, Anna Ridler, Lawrence Lek, Holly Herndon & Mat Dryhurst. Others are concerned with aesthetics, perception, scale, and duration, treating computation as a material



STRANGE RULES: PHOTOGRAPHY BY JOAN PORCEL. MOLNAR: COURTESY OF V&A MUSEUM

Installation view of "Strange Rules" at Palazzo Diedo Berggruen Arts & Culture, 2026, with work: Attention Guild (2026) by Mat Dryhurst and Holly Herndon.



Vera Molnar, *Autoportrait a la Saint-Victoire*, 2004. On show as part of "Degrees of Disruption: Vera Molnar and Generative Art", V&A South Kensington, until May 30, 2027

RIGHT CLICK SAVE



Mario Klingemann, Appropriate Response (2020) at the Onkaos stand at Zero 10, Art Basel Miami Beach, 2025



Beeple, Everydays, 2007-present. Installation view of “BEEPLE: / INFINITE_LOOP” at NODE, Palo Alto

rather than a subject: Ryoji Ikeda, Carsten Nicolai, Ian Cheng, Rafael Lozano-Hemmer.

Either way, what is rewarded is a position that art criticism can take up, critical or formal; technical novelty on its own counts for little here. Recognition comes through museums, biennials, curators, galleries, and critical writing.

3. The specialist world of digital art

Art-and-technology conferences, university labs, creative-coding communities, and media art festivals such as Ars Electronica, ISEA, SIGGRAPH art exhibitions, the Beijing Media Art Biennale, CYFEST, and FILE São Paulo. Here the values are technical experimentation, research — sometimes published in academic journals — and collaboration across art, engineering, and science. What distinguishes this world is not absence from the art world — Casey Reas is represented by bitforms, and several of these artists are in museum collections — but where a reputation is made in the first place: among peers, through juries, panels, and festival selection. This type of digital art is usually focused on exploring new artistic possibilities of computer technologies. The same division that runs through world 2 — form, perception and experience on one side, social and political issues on the other — runs through this world too. Representative figures include Zach Lieberman, Casey Reas, Lauren Lee McCarthy, Golan Levin, Daito Manabe, Mario Klingemann, and Christa Sommerer & Laurent Mignonneau.

4. Code art

Artists write programs that generate the work. The lineage runs back to world 1 — Molnar, Mohr, Frieder Nake — and the practice comes out of the creative-coding tools of world 3, above all Processing. What is new is how the work is generated, sold and owned. Platforms such as Art Blocks (2020) and fxhash (2021) have made the algorithm itself the work: the artist submits a program, and each output is generated at the moment a collector buys it, seeded by that transaction and in most cases recorded as an NFT. The artist sets the rules and the range of variation; nobody, the artist included, sees the individual work before it exists.

For many long-term participants, art on blockchain is a genuine medium with its own unique possibilities. Here is one of them as implemented by Art Blocks: the work’s code is stored on-chain, and it is rerun every time the work is viewed. You collect not a single original but one run of that code.

Recognition comes from collectors, from platform curation, and from a dense online community of other coders. Representative figures include Tyler Hobbs, Dmitri Cherniak, Zancan, Emily Xie, and Anna Lucia. This is also the world that recently has moved fastest into the traditional art market: Hobbs had a solo exhibition at Pace in 2023, and Cherniak’s Ringers #879 sold at Sotheby’s that year for $6.2 million.

> *“Today the gallery and museum texts for exhibitions by artists such as Pierre Huyghe and Anicka Yi no longer hide the technology. It is foregrounded, because it now adds value”*
>
> Lev Manovich

PHOTOGRAPHY BY ART BASEL

PHOTOGRAPHY BY FELIX URIBE

5. Platform digital art

This is the largest of the seven worlds by sheer volume of work. Illustration, character and fan art, 3D renders, AI images, and animation circulate through ArtStation, DeviantArt, Behance, Instagram, and marketplaces for editions. The artist posts directly to an audience, without the curators, galleries, and museums of the art world in between.

The motives are mixed. Some post to build a portfolio and get hired — here the audience that matters is a future employer. Some post to sell prints, commissions, or editions directly to buyers. Some are looking for a community of people working in the same style or medium, and for the recognition of peers.

The values that follow are virtuosity and a recognizable personal style, judged in the first instance by an audience and by the platform’s own metrics and ranking systems.

6. Immersive spectacle

This world consists of projection-based environments, large-scale installations, and immersive experiences produced for brands and dedicated venues. Here the values are scale, sensory impact, and visitor numbers. Unlike the commissioned digital media of world 7, which serves a film, a product, or an institution and is rarely credited to its makers in public, the work here is itself the attraction and circulates under the name of the studio or artist who made it. Currently successful studios include teamLab, d’strict, and Refik Anadol Studio.

7. Commissioned digital media

The professional world of digital media production: interface and app design, concept art and visuals for film, television and games, motion graphics, and media for exhibitions and public spaces. All this work is commissioned, and begins with a brief specifying what the designers must accomplish. What is rewarded is the result that satisfies all brief requirements while matching the level of the best work being done in the industry at that moment.

Judgment comes from an art director and a client through rounds of revision. Recognition rarely reaches the public at all: the designers who made a film’s interfaces or an app’s motion system are known mainly to peers. This is the sharpest difference from the other six worlds, which are all organized around public authorship.

Representative studios include Buck (motion design and animation for brands), Territory Studio (screen graphics and interfaces for film and games), and Local Projects (media design for museums and public spaces).

Dr Lev Manovich is a Presidential Professor at The Graduate Center, City University of New York (CUNY). He is recognized as one of the most influential thinkers in digital art, digital culture, media theory, and digital humanities. Manovich’s publications include 227 articles, reprinted over 460 times in 40 languages and 17 books which include Artificial Aesthetics, Cultural Analytics, Instagram and Contemporary Image, Software Takes Command, and The Language of New Media, called “the most provocative and comprehensive media history since Marshall McLuhan.” Manovich’s art projects have been exhibited in 140 international exhibitions at leading cultural institutions, including the Institute of Contemporary Art (London), the Centre Pompidou, and the Shanghai Biennale. Manovich’s latest book is Artificial Aesthetics: Generative AI, Art and Visual Media (2024), available as a free download.

RIGHT CLICK SAVE



Tyler Hobbs, From Noise (2025). SOLOS stand, Zero 10, Art Basel Miami Beach. Courtesy of the artist and SOLOS



The Crowley Theater, Marfa, Texas, where the Art Blocks community gathers for its annual Marfa Weekend.

Crossings between worlds

In the 2010s an increasing number of artists in the contemporary art world began to use cutting-edge digital technologies in their work — without drawing attention to this in the accompanying descriptions. When the art world became more interested in technology after 2017, the strategy changed. Today the gallery and museum texts for exhibitions by artists such as Pierre Huyghe and Anicka Yi no longer hide the technology. It is foregrounded, because it now adds value.

But this was a shift in the contemporary art world at large. What was happening between the seven digital art worlds themselves?

Until recently these worlds were largely separate. Two developments changed that. In the second part of the 2010s, museums began to include digital work in their exhibitions and collections. This opened a door into world 2 for some artists who had until then circulated only through festivals and labs.

Then the NFT boom of 2021 gave world 4 its own market and its own validating institutions. It opened a direct market to some artists in world 5 as well, but no new authority to judge them: there the criteria stayed as they had been — audience numbers and platform ranking.

Artists had been working with blockchain since the middle of the 2010s, well before that boom — Kevin McCoy's Quantum in 2014, CryptoPunks in 2017, the first crypto art marketplaces soon after.

What 2021 added was scale: a year in which very large numbers of people were buying and very large numbers of artists were minting. That phase ended, and most of that traffic left. The world it left behind is smaller but more serious — the long-term participants described in world 4 are the ones who stayed. And the moment mattered beyond its own market, because it drew far more attention to digital art as a whole from museums, auction houses, and galleries.

The most visible careers now are often the ones that cross between worlds. Refik Anadol makes large-scale data-driven work for venues, public spaces, and corporate commissions. He also shows at MoMA, so the same practice is received as spectacle in world 6 and validated as contemporary art in world 2. Rafael Lozano-Hemmer came out of the festivals of world 3 and now works largely through museums and galleries, carrying the recognition he earned in world 3 into the institutions of world 2. d'strict, whose core business is commissioned work, formalized the crossing structurally, spinning off a separate artistic unit, a'strict, to make gallery work free of client commissions. The newest of these crossings runs from world 4 into world 2: code artists arriving in galleries and auction rooms with the collector base they had already built online.

HOBBS: PHOTOGRAPHY COURTESY OF ART BASEL. MARFA: PHOTOGRAPHY BY JOANA KAWAHARA LINO

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Installation view, Refik Anadol, Machine Dreams: Rainforest, Dataland, Los Angeles

Not what is digital art, but which digital art world?

The number of such crossings is growing. But the great majority of digital artists still operate in only one of the seven worlds. An artist may have success without significance, or significance without success. A work can be technically brilliant, popular online, and commercially successful without becoming historically or institutionally significant. Or the reverse: a work may be valued in media art history while remaining invisible in the mainstream market and to most art museums.

Which is why the question of belonging continues to matter. When you encounter a digital artwork, it is not enough to know that it was made with technology. You also need to consider the following questions:

- In which digital art world does it circulate? (in other words, where do you encounter a work — in a museum, festival, platform, etc.)
- Who validates it, and in what form? (museum curators, jury, collectors, platform curators, professional awards)
- What does that world reward? (historical influence, a critical position, technical innovation, price and provenance, visible craft, scale, meeting the brief)
- Is it original and interesting in relation to other works in that world?
- Does the world it belongs to preserve its work — and in what form? (conservation, documentation, an archive, code on-chain)

Where to look

If you are new to digital art, there are books and many resources online, and you can also ask an AI assistant to tell you about the field, give you lists of artists and their websites, and so on. Here I want to foreground three institutions that have shaped how this work is documented and seen, and three more recent platforms that have introduced new models. (There are many other platforms and archives; these are simply my own favorites.)

Read the full article here at rightclicksave.com

The first three date from the field's institutional beginnings

- Founded in 1989 and opened in its Karlsruhe building in 1997, ZKM was the first institution to combine a museum of media art, an archive, production studios and research laboratories.
- The Archive of Digital Art, begun by Oliver Grau in 1999, is the first large online archive of the field.
- Founded in 2001 by Christiane Paul, the Whitney Museum of American Art's artport was among the first spaces dedicated to digital art at a major art museum, and one of the very few of its generation still commissioning internet art today.

Three recent ones work differently

- Art Blocks, founded in 2020 by Erick Calderon, is where the model described in world 4 was established: the artist deposits an algorithm, and each work is generated at the moment a collector buys it.
- Feral File, founded in 2020 by Casey Reas, organizes online exhibitions from which works are sold in editions.
- CIFRA (chief art curator: Olga Shishko) is a streaming platform and online exhibition space for digital art (disclaimer: I serve on its advisory board).

Appendix | Connections between seven digital art worlds

The two diagrams below map the connections between the seven worlds as I see them today. In Diagram A the connection is made by movement. A work or an artist begins to circulate in another world and is valued by different criteria there. In Diagram B it is made by adoption: a tool, a technique, a format, or a model of production is taken up in a different world.

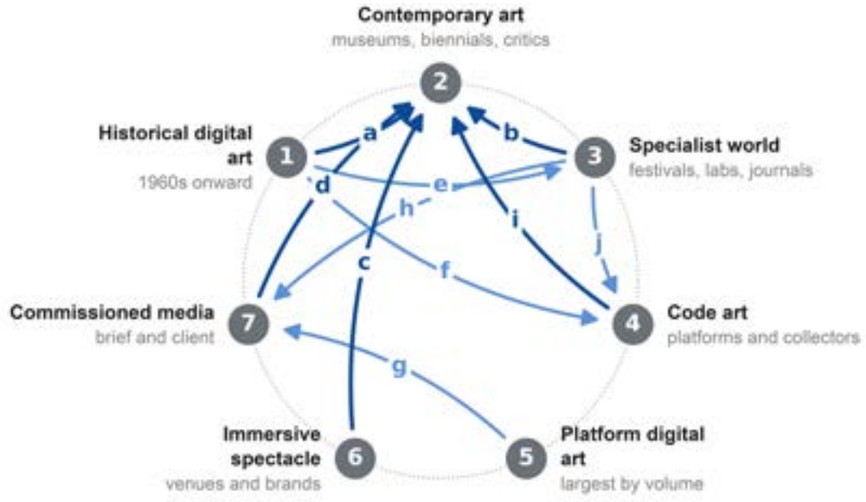


Diagram A | The movement of people and works between worlds

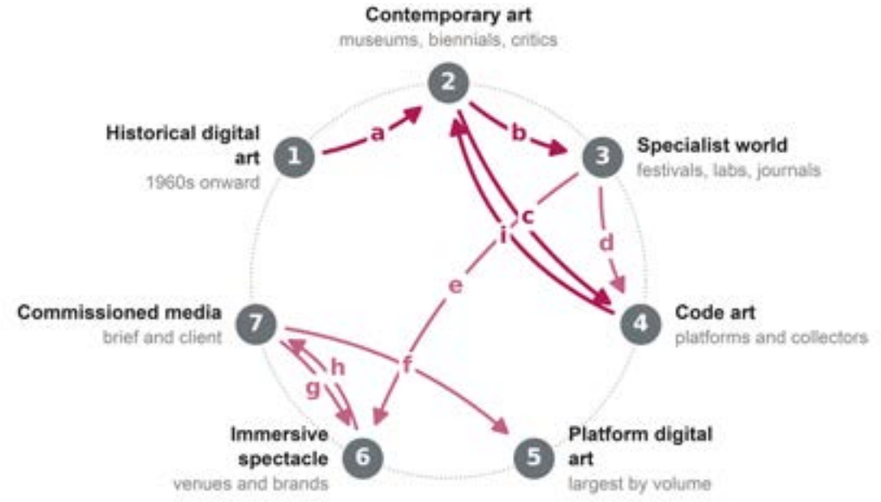


Diagram B | The adoption of one world's tools, techniques and conventions by another

Ten crossings. Half of them arrive at world 2, which takes people and works from five other worlds and sends none the other way. The letter on each arrow keys it to the list below. Arrows that touch world 2 (a, b, c, d, i) are drawn in a saturated color; the rest (e, f, g, h, j) are in a lighter tone of the same color, to set off that convergence on world 2.

(a) 1 → 2 ***Works enter the museum.*** Computer graphics, generative art, video, cybernetic art, net art, and interactive work from the 1960s onward are increasingly exhibited and collected. What changes is the criterion: on arrival the work is valued for historical influence, documentation, preservation and conservation rather than for what it does.

(b) 3 → 2 ***Artists carry festival standing into galleries.*** Recognition earned in festivals or other venues of the specialist world can be converted into standing in museums and galleries; museums beginning to collect digital work in the 2010s is what made the conversion possible. However it happens in a given career, the work is then read as contemporary art rather than as technical research.

(c) 6 → 2 ***Spectacle is shown as contemporary art.*** Anadol makes large-scale data-driven work for venues, public spaces and corporate commissions — and also shows at MoMA, so the same practice is received as spectacle in world 6 and validated as contemporary art in world 2. d'strict formalized the crossing structurally, spinning off a'strict to make gallery work free of client commissions.

(d) 7 → 2 ***Designers' own work reaches the art world.*** The thin direction. Designers trained in art schools, follow exhibitions closely, and make speculative work, redesigns and short films alongside client projects; some of it is shown as art. The traffic the other way — artists and curators looking into world 7 — is thinner still.



(e) 1 → 3 ***Works restaged and archived by the field itself.*** The same early work also circulates inside world 3 — reshown at festivals, documented at ZKM and in the Archive of Digital Art. Here it is valued as the specialists' own canon, which is a different thing from being valued as art history.

f) 1 → 4 ***Canonical work acquires a price.*** On-chain generative work claimed Molnar and Mohr as ancestry, and the 2021 market followed the citation. The same objects and the same names, valued as a market lineage rather than as a chapter of art history.

(g) 5 → 7 ***Platform artists get hired.*** "Some post to build a portfolio and get hired — here the audience that matters is a future employer." ArtStation and Behance are where studios find concept artists, illustrators and motion designers. The same skill is then rewarded for satisfying a brief rather than for a recognizable personal style.

(h) 3 → 7 ***Specialists take commissions.*** Capabilities developed as research get commissioned by clients — for many specialists not an occasional detour but how the practice is funded. On this side of the arrow the research is invisible; only whether the brief is met counts.

(i) 4 → 2 ***Code artists enter the gallery and the auction room.*** Tyler Hobbs at Pace, Cherniak's Ringers #879 at Sotheby's, Molnar and Martin Grasser's late series opening Sotheby's generative program. The work arrives with a collector base and a price history already attached, which is not how world 2 normally acquires an artist.

(j) 3 → 4 ***Coders move to the platforms.*** The people who wrote and taught the creative-coding tools of world 3 are often the same people making work for world 4. What changes is not the practice but who validates it: collectors and platform curation instead of festival juries and peer review.

Nine adoptions. World 4 imports its software from world 3 and its apparatus of authorship from world 2, and exports the mint back to world 2. World 5 imports its craft standards from world 7 and exports nothing. The letter on each arrow keys it to the list below. Arrows that touch world 2 (a, b, c, i) are drawn in a saturated color; the rest (d, e, f, g, h) are in a lighter tone of the same color, to set off that convergence on world 2

(a) 1 → 2 ***Algorithmic generation becomes ordinary.*** What world 1 worked out as a research problem — images and animation produced by rule rather than by hand — is now a default capability in the software every artist already has. Contemporary artists use procedural and generative methods without needing world 1's context and usually without citing it: the technique arrived, its history did not.

(b) 2 → 3 ***Formats and conventions of showing.*** Most of the conventions world 3 works within were settled in contemporary art from the 1960s onward: installation and the environment; the instruction as the work, from Fluxus scores and LeWitt's wall drawings, which is why nobody had to argue that a program could be an artwork; documentation standing in for the work, established by performance and land art and now the only form in which most festival pieces survive; participation, from which interactivity inherited its legitimacy as an artistic proposition rather than an engineering feat; site-specificity, inherited by locative and urban projection work; and the expectation of a critical position, the statement and the discursive frame that festivals now require as a matter of course.

(c) 2 → 4 ***The apparatus of authorship.*** Named author, numbered edition, provenance, a primary and a secondary market, the artist's statement: the machinery world 2 built for objects was imported more or less whole by the NFT market, which needed a way to make a file behave like an artwork. Art Blocks is world 2's apparatus running on world 4's material.

(d) 3 → 4 ***The tools.*** Processing, p5.js, openFrameworks. The languages of generative art were written inside world 3 — by Casey Reas, Lauren Lee McCarthy, Zach Lieberman. World 4 was built on top of them.

(e) 3 → 6 ***Technique at venue scale.*** Projection mapping, sensor-driven interaction, data as visual material, the artistic use of image models. Methods worked out as research in labs and festivals reappear at the scale of a venue, in the hands of studios that did not develop them. The underlying software mostly comes from industry rather than from artists; what travels from world 3 is not the tool but what to do with it.

(f) 7 → 5 ***Industry craft standards.*** What reads as accomplished on ArtStation or Behance is the standard set by film, television and game production — lighting, rendering, finish, the conventions of concept art and of a reel. The bar arrives from world 7, which is also where much of the audience is looking from: a good part of these portfolios is addressed to an art director.

(g) 7 → 6 ***The studio model.*** Immersive spectacle runs on world 7's apparatus: a brief, a production pipeline, rounds of approval, credit to the studio rather than to the individual. The one thing not adopted is anonymity — here the work is the attraction and carries the studio's name.

(h) 6 → 7 ***And back: the client mode.*** The spectacle studios also work to briefs: teamLab and d'strict each make work that is itself the attraction and work made for a client. Which is why d'strict had to spin off a'strict — to keep the two modes apart inside one company.

(i) 4 → 2 ***The mint as a sales format.*** The auction houses have taken on the mechanics world 4 invented — the timed drop, the Dutch auction, the output generated live at the moment of sale — and run them as their own events. The apparatus world 4 borrowed in (c) comes back adapted. ▩

RIGHT CLICK SAVE

INTERVIEW

‘I WANT TO BE PART OF KEEPING THE HISTORY OF THE WEB ALIVE’ — OLIA LIALINA

The net art pioneer, who has always treated the web as a medium, says the tech industry is working to make the digital world increasingly invisible, prompting her to demonstrate her belief in the care of digital art**r**

ANIKA MEIER

For 30 years, Olia Lialina has treated the web as a medium. Browsers, hyperlinks, servers, protocols, HTML, location bars, and the movement of files across networks are the material of her work.

Olia Lialina began making art online in 1995, when the web was still a space that could be built, inhabited, and shaped by its users. She describes falling “blindly in love” with it: with the possibility of becoming visible immediately, of connecting with people around the world, and with HTML as a language that allowed her to tell the browser what to do.

Her 1996 work *My Boyfriend Came Back From The War* became a landmark of net art. Works including *Agatha Appears* (1997), *Animated GIF Model* (2005), *Summer* (2013), *Self-Portrait* (2018), and *Hosted* (2020), have since explored what it means for an artwork to exist across browsers, servers, protocols, and networks of people and computers.

Thirty years later, Olia Lialina says that the web may really be dying out. The IT industry, she argues, has worked to make the digital world increasingly invisible, alienating people from an environment in which they once had greater agency. The web is giving way to platforms and, more recently, to what she calls an “agentic web,” where things are made “by bots and for bots.”

In conversation with Anika Meier for *Right Click Save*, the artist reflects on three decades of net art, from learning HTML and becoming a “GIF model” to the changing language of digital culture and her efforts to keep the web visible. “I don’t want to say goodbye to the web,” she says. Today, she sometimes calls herself a web artist — a term she would have rejected in the 1990s — because she wants to keep the word, and the history it carries, in circulation.

Anika Meier: I’ve spoken with Vuk Ćosić and UBERMORGEN about what it was like for people from the net art generation to watch the NFT hype unfold. Vuk said that many of the arguments and ideas from the 1990s were simply taken up and repurposed by tech bros. How did you experience that moment?

Olia Lialina: I thought there were a lot of things very wrong with it. I actually didn’t want to participate or even talk about it because everything would just become advertising. Even if you are negative, you are contributing to the hype. It’s a known effect.

One of my biggest disappointments was something else, though. There was a strong return to the rhetoric of the traditional art world and this huge piety of the original. It was masking itself as something new, digital, and fair, but in fact it was very much in favor of treating the original as something holy.

AM: Why were you disappointed about this? Why is this important for net art?

OL: I think for net art, or the net art I practice, the moment of inbetweenness, the feeling of instability and uncertainty, is the most important. A single file or a folder that can become an original and its copies is not what constitutes my artworks, but all the things that happen when they are travelling through the network of people and their computers.

Animated GIF Model (2005) was made to be lost and found in the most obscure corners of the *World Wide Web*. *Summer* (2013), which looks like a simple animation in your browser, is in fact going through 25 servers around the globe while you are staring at it. *Self Portrait* (2018) is distributed through three different protocols.

To see it, you should be able to bring together three different webs on your desktop. This action, not the images, constitutes the artwork.

AM: You’ve been making art on the internet for 30 years now. How important has language been in shaping the way we understand what happens online?

OL: So much of that time has been about changes in discourse and methods, about new words appearing and disappearing and words constantly changing their meaning. You can look at this in the narrow context of digital art or net art, but you also see it throughout the history of human-computer interaction.

All of this is about naming and renaming things because, in a way, none of these things exist. They’re zeros and ones. To give them shape, you have to find words, and these words are very powerful. Computers, for example, were called “computers” rather than “calculators” to make them appear more human to their operators. And the first graphical user interfaces used the metaphor of the “desktop” to guide users toward understanding the computer as a space for office work. It matters what you call things and how you use those words.

A lot of my 30 years as a net artist have been about fighting over words and their meanings: telling people what to call you and what not to call you, objecting to certain expressions, ridiculing some and promoting others. At one point, for example, there was this term “net-based art”. I even won a net-based art award in 2018.

AM: Did winning the award change how you felt about the term?

OL: Maybe it made me more loyal to it. I remember when “net-based” first appeared,



PHOTOGRAPHY BY SVEN WEBER

Olia Lialina

I thought it was such a sedative term. There is no conflict in it. It just means that something is online.

In the very early days, in 1996 or 1997, when I was young and energetic and everybody was an enemy, I didn't want to be called a web artist.

"No, I'm a net artist. It's about connection, not about stupid formalist experiments in the browser." "No, I'm not a new media artist. Are you crazy? I'm not making installations. I'm not interested in interaction."

These are just words, but somehow they were always very important.

AM: There suddenly seem to be very different art worlds on the internet. The NFT community speaks about digital art, while ten years ago *KUNSTFORUM* was already publishing issues on the post-digital era. And now net art is back. Is this cyclical? Is it a fight over territory? Or do new communities simply arrive without knowing the history?

OL: There are obviously spirals. By the way, I really love those post-digital issues of *KUNSTFORUM*. I have them on my reading list for my students.

AM: They're from ten years ago.

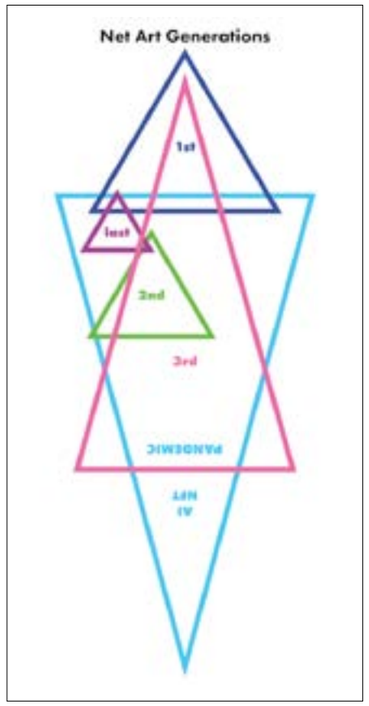
OL: Exactly ten years ago. And when the term "post-digital" appeared, I also thought: Why do I need it? There is still so much I want to say about the digital.

But maybe I'm too slow. Even my position at Merz Akademie, I renamed from Professor of New Media to Professor of Post-Digital Cultures. I needed the "post" as a critical position, almost as a rejection. I can't promote the digital world anymore. I have to deal with the impact of our (and my own) excitement over the last decades now.

AM: And where do NFTs and AI fit into these spirals?

OL: If you look at the Net Art Generations diagram at my exhibition at Panke Gallery in Berlin, titled "Network Portraits", it is based on my observations of net art: the first, the second, the third (or post-internet), the last, and the "pandemic," when suddenly there was huge interest in net art again because everything was online. People, young and old, were saying: "Yes, I want to be a net artist. This is where to be because everything is online."

Then it went in another direction with NFTs and AI. I see people making projects that, at an earlier moment, I might have called net art, or at least web-based or online art, but they identify themselves differently. They left the term behind and started using other words.



Olia Lialina, Net Art Generations, 2026

But you shouldn't take my diagram too seriously. I'm not a professional information visualization designer.

AM: The diagram is an artwork of yours.

OL: I see it as an art object; I shouldn't interpret it too much. As we know, I'm always trying to explain something, and maybe my works are sometimes a bit too didactic.

But looking at this particular moment, I see the word "digital" becoming big again. It's making a comeback as a more general term. It just includes all the strands that we got over, I would say, seven decades, starting from the first algorithmic art, without distinguishing between generative, interactive, games, and net art. It can be a healthy, calm moment to rethink the values of each and continue with juxtapositions.

"Maybe it's a very small step, but I see it as a mission to make sure that the web doesn't simply vanish because nobody needs it to remain visible."

Olia Lialina

AM: You said you needed the "post" in post-digital to signal a critical position. What are you critical of today?

OL: There are many things, but the biggest one for me would be the alienation of online people from the online world. The IT industry has taken so many steps to make the digital world invisible that you no longer perceive it as a world in which you could be active or have agency.

And then there is the web. Maybe for the first time, I can say that the web is really dying out. I'm trying to do everything I can, and I see people who are still enthusiastic, who know how to be active online, how to make their own webpages, and how to exist online without platforms. But all of this is really a drop in the ocean.

The "agentic web" is rising, where things are made by bots and for bots. Before, there was the term "Internet of Things", which was a bit different. But now the internet is becoming a web of bots. Unfortunately, this isn't just hype or IT propaganda. You can see it being implemented.

There is another term, the "dead internet," which was always speculation. But unfortunately, you can really feel it now.

AM: What made you fall in love with the internet in the 1990s?

OL: I fell in love with every aspect of it. Blindly in love. You could create something, whatever it was, and become visible immediately. And you could connect to people. Especially for somebody in the post-Soviet space at that moment, it was important that these were people from other countries, people around the world.

I wouldn't have described it in these words at the time, but I was absolutely charmed by HTML, by HyperText Markup Language, and its power. I wasn't a programmer at all, but suddenly I could tell the browser what to do and how to show things. It was empowering. It was a language. And it wasn't only me. A lot of people felt this way at that moment.

With My Boyfriend Came Back From The War (1996), this all came together. At the time, I wasn't able to make 16mm films anymore. Production had become very expensive, the cheap Soviet production infrastructure was gone, and the alternatives weren't accessible to me. There was this line in Russian that was always in my head: "My boyfriend came back from the war. After dinner they left us alone." I couldn't continue it as a poem. I couldn't make a film out of it. But somehow, through the code, I could continue the story. Writing the code and writing the story became the same process, and in the end it became my form of expression.

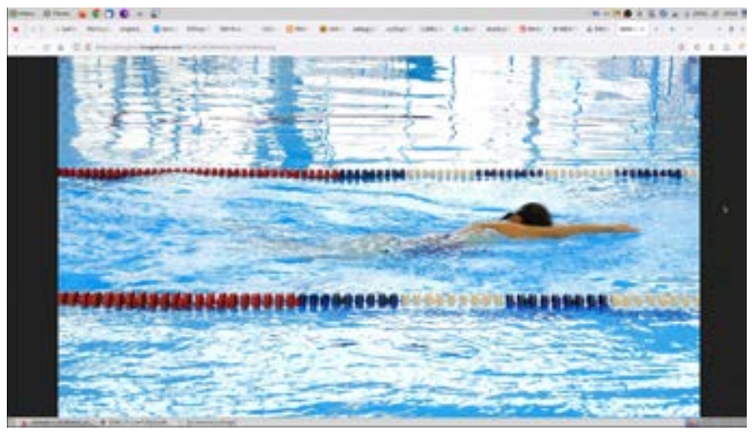
There was a lot of love for the browser in that work too, but also the excitement that I could control it. Today, to have that kind of control over what you want to make and show people, you have to be a very experienced developer, probably operating a lot of agents.

© OLIA LIALINA



Olia Lialina, My Boyfriend Came Back From the War, 1996, during the work's 20th Anniversary show at HEK, Basel, in 2021

MY BOYFRIEND: PHOTOGRAPHY BY FRANZ WAMHOF. HOSTED: : COURTESY OF THE ARTIST



Olia Lialina, *Hosted*, 2020. Screenshot

AM: How did you start making art online and meet the other artists? Today you open an account on Twitter or Instagram and you're connected to everyone, or perhaps to nobody. How did those connections happen in the 1990s?

OL: Alexei Shulgin and I were both giving workshops at a media lab in Moscow. He was talking about photography and had already started working with the web, while I was giving lectures about experimental film. That's where we met, and he told me about the web. It's a bit like the story in Agatha Appears (1997): Agatha meets a system administrator who says, "I will show you the internet." Alexei told me we should go to the Library for Foreign Literature in Moscow because they had computers and internet access. I didn't have either at the time. This must have been early 1995.

We went there and connected to the internet. I think one of the first things he showed me was jodi.org. After that, I started going to the library myself. I would look at ordinary webpages to see how they were made and then make them myself. Eventually I got a computer at home. Then everything happened very fast. In 1996, I was invited to the Dutch Electronic Art Festival to present the website for Cine Fantom, my experimental film club. I was officially there to present Cine Fantom, but I started showing some people this little thing I had also made, My Boyfriend Came Back From The War. They said, "Come with us to Budapest, to Metaforum, and show what you're doing online."

There I wasn't so shy anymore and showed My Boyfriend Came Back From The War. That was the day I went from being a film critic who made websites to being a net artist. I met so many people there, and then we continued online. It happened very fast. All the connections were suddenly there.

AM: But at the time you didn't consider My Boyfriend Came Back From The War to be completely net art?

OL: In 1996 and 1997, I was actually a bit ashamed of it. It was made for the browser; it was HTML, but you could also see it offline. It wasn't distributed.

AM: And what made Agatha Appears, your 1997 net artwork about a woman who is introduced to the internet by a system administrator, different?



Installation view Olia Lialina, “online since 1996”, City Gallery Sindelfingen, with work: Agatha Appears (1997)

OL: When I made Agatha Appears, I wanted to make something that had to exist everywhere. It was a story, but it was a net artwork because it couldn’t work on a computer that was offline. I thought, “Now I’m really a net artist. Now I’ve made something really great.” But, as we know, Agatha Appears has always stayed in the shadow of My Boyfriend Came Back From The War.

AM: Maybe people also responded so strongly to My Boyfriend Came Back From The War because you came from film. The work feels cinematic, with the browser windows opening almost like scenes. Were you thinking about it as a film?

OL: Yes. It was another type of film editing. Maybe if I hadn’t come from film myself, I wouldn’t have called it a film. Today I see people calling it an early interactive game or a visual novel. “Visual novel” is a term younger people use for this kind of interactive narrative. But for me, it was a film.t

AM: This idea of the network itself becoming part of the work comes back in Summer from 2013, which is also in the exhibitions “Network Portraits” at Panke Gallery and “online since 1996.” The work shows you swinging, but the 18 frames of the animation are distributed across the servers of different artists. How did that idea develop?

OL: I wanted to go back to something from Agatha Appears: this idea of travelling through the location bar. But I wanted to remove the story and everything else. No story, no reader, just the movement. My kids were still young then, and I saw them on a swing in our garden. I started visualizing the metal bar that holds the swing as the location bar of the browser. We found a bigger swing, filmed it, and divided the movement into 18 frames.

Then I asked other artists to host those frames on their websites. I asked more people than I needed because I thought many would say no, but almost everybody agreed. It is 25 hosts now and will grow because some people have asked me recently to be included.

AM: The animation actually jumps from one artist’s website to another.

OL: Yes. The basic idea was very simple. There is this old piece of HTML code called “refresh”, which automatically sends you from one page to another. Instead of clicking the link, the page simply refreshes after a certain amount of time.

My idea was that every artist would put one frame and this little piece of code on their server. The browser would then move from server to server, and the individual frames would become an animation.

In the end, the script had to become more complex. It had to wait for each frame to load and skip a server if one went down. Some people have disappeared over the 13 years because they gave up their servers, and new people have joined.

I call it my social network. I still have to remind people to update things, or someone writes to tell me that their file has moved because they changed their domain. So we’re still in communication. It’s actually a bit of a wonder that it still works. And I’m happy that these artists still have their own websites and still know how to transfer files to a server.

There were also artists I really wanted to include who couldn’t participate. Lorna Mills, for example. From the very beginning, I really wanted her to be part of it. It would have been so right for Lorna to host a frame because she was working so much with GIFs. But at the time, she was posting GIFs rather than uploading files to her own server.

Read the full article here at rightclicksave.com

PHOTOGRAPHY BY KAI KNOERZER

AM: Lorna Mills works with found material from the internet, turning it into GIFs. You took almost the opposite approach: you deliberately put GIFs of yourself into circulation. You called yourself a “GIF model”. How did that start?

OL: That happened in 2005, before GIFs became popular again. At the time, people were still ridiculing the amateur web and its aesthetics. I was making a lot of work with GIFs that other people had made, and at some point I thought, “OK, I also want to give something back. People should have a nice lady hula-hooping, playing the accordion, or dancing that they can use to decorate their webpages.” So I made these GIFs very carefully. They were perfectly cut out so they would look good on any background and perfectly looped. I made a showroom demonstrating how great I looked on all these different backgrounds, and I uploaded the GIFs to lots of free online collections.

After that, I had no idea what happened to them. It wasn’t until 2012, when Google introduced Search by Image, that I could suddenly find myself again and document where the GIFs had ended up. That was when it really started to become an art project.

The work was later acquired by the Stedelijk Museum as three GIFs together with documentation of where I had appeared online. But in a way, 2005 was already a little late. It was just before “Web 2.0” really took off and everything started moving to platforms.

“The ‘agentic web’ is rising, where things are made by bots and for bots. Before, there was the term ‘Internet of Things’, which was a bit different. But now the internet is becoming a web of bots … You can see it being implemented”

Olia Lialina

AM: You’re an artist, researcher, and professor. Why is it important to you that people understand the history and technology of the internet?

OL: I still want people to see the web as a medium and not as a technology. And that’s getting more and more difficult. As a technology, the web has become omnipresent. Almost everything we see is actually JavaScript. There are browsers everywhere; you just don’t see that they are browsers. But the web as a medium means something else. It’s a channel where you can express yourself, where you control communication and make decisions. And it’s not only a channel, but an environment that you can build yourself. Technically, all of this is still possible, but it has completely disappeared from our attention.

For me, this is part of something bigger: showing people that the computer actually exists. The IT industry is trying to do the opposite, to make you forget about it. There was this Apple commercial where a child asks, “What’s a computer?” It’s not a joke, but the paradigm the IT industry is following.

It’s important to understand that it isn’t just something “digital” surrounding us. These are computers. These are interfaces. And we are the users of these computers. I try to be a computer user. It’s a noble role.

AM: And Hosted (2020) shows what happens when you give up that control?

OL: Yes. In Summer, I’m swinging through the servers of other artists. In Hosted, I’m swimming through 70 hosting services. And this time they aren’t friends. They are very hostile enemies pretending to be your friends. They have absolutely no respect for the content. I upload my files and they move them, remove them, change their size, or put watermarks on them. And everywhere I uploaded them, the promise was that they would keep them for free and forever.

AM: In the 1990s, there was such a positive outlook on what the internet might make possible. Some artists I speak to say it has turned from a utopia into a dystopia, while others completely reject that idea. How do you see it?

OL: I don’t want to say goodbye to the web. I’ve made a lot of works that I think also prolong its life, including through art institutions. Works like Summer, Best Effort Network (2015/2020), Self-Portrait, or Hosted demand attention to the browser, to the fact that there is a browser with a location bar. These works become part of collections and curricula, which means that to show them, institutions will have to install browsers. And to understand them, teachers will have to explain to students what the web is.

Maybe it’s a very small step, but I see it as a mission to make sure that the web doesn’t simply vanish because nobody needs it to remain visible. The industry doesn’t need the web to be visible.

I’m giving a workshop at The Photographers’ Gallery around the One Terabyte of Kilobyte Age (2010 – ongoing) archive. When I give these workshops, there is always some task where people supposedly help me with the archive. But actually, that’s just an excuse. The important thing is that people sit down and look through these old webpages.

You can scrape an archive and end up with thousands of GIFs. You get an impression of the early web, but you don’t see the pages anymore. You just get this funny old GIF. I try to take an anti-digital-humanities approach: it should be done by people, not by algorithms.

AM: Do you still identify as a net artist?

OL: Yes, I still identify as a net artist. I also don’t see myself being an artist without the net. But contrary to what I said before, in the 1990s I would have been furious if somebody called me a web artist.

Today I sometimes try to call myself a web artist, just to keep the word in circulation and to connect it to the research I’m doing. I want to be part of keeping the history of the web alive.

AM: Five years after the NFT hype, you’ve seen a lot of colleagues doing NFTs. Have you ever reconsidered your position?

OL: No. ■

Olia Lialina is among the best-known participants in the 1990s net.art scene – an early-days, network-based art pioneer. Her early work had a great impact on recognizing the Internet as a medium for artistic expression and storytelling. This century, her continuous and close attention to user culture, “net.language” and no-interface paradigm, has made her an important voice in new media, post-digital studies and HCI. She is cofounder and keeper of One Terabyte of Kilobyte Age archive, author of Digital Folklore (2009) and Turing Complete User (2021). She is a professor for New Media and Post-Digital Cultures at Merz Akademie in Stuttgart, Germany.

Anika Meier is a Berlin-based writer, moderator, curator, and lecturer specializing in art, technology, and digital culture. She teaches at the Department of Digital Art at the University of Applied Arts Vienna, is the co-founder of the curatorial collective The Second-Guess, and is the curator and program lead of the objkt labs Residency. She regularly contributes to Monopol, Kunstforum, Spike, SLEEK, Numéro Berlin, and The AI Art Magazine, and has moderated conversations and spoken at events including Art Basel, re:publica, and Ars Electronica.

INTERVIEW

ON DIGITAL ART'S PHYSICAL DEMANDS

The artist Dev Harlan argues, in "WYSIWYG", a group show he organized on eBay, that digital art is meaningless without mediation by the technology or infrastructure through which it is experienced, which in turn becomes a central to its long-term care

LOUIS JEBB



Michael Neff, THIS IMAGE HAS BEEN DELETED (WYSIWYG), 2026. A new image was served every 90 seconds to an eBay listing

NEFF: COURTESY OF THE ARTIST



Motomichi Nakamura, Red Eyes in Taos, New Mexico, 2026

NAKAMURA: COURTESY OF THE ARTIS

The artist Dev Harlan is staging a digital art exhibition on eBay. The group show "WYSIWYG", involving Harlan and 15 other artists, is a testament to his interest in how today's variety of online platforms — the 2026 embodiment of Marshall McLuhan's message-bearing mass media — offers a range of framings for digital art.

Harlan spoke to *Right Click Save* about the show's ambitions, and the "cheeky ambiguity", and invention, shown by participating artists — with contributions ranging from hacks of the eBay listing itself to excerpts of a computational sound performance translated to QR codes, and printed on marble. He also discusses how working with eBay enables the participants to deploy auction techniques that mirror the "speculative logic of major art auction houses, but stripped of curatorial pretense".

Louis Jebb: With "WYSIWYG" you are putting on an online exhibition of digital artwork much of which is shippable in physical form. The work is being auctioned on eBay. You have explained that the "substrate" of digital art, whether it is consumer electronics or the infrastructure of networked platforms, has always been "hiding in plain sight"; that the digital is meaningless without its association with a platform, blockchain, or a physical housing in consumer electronics. There are many layers to unpack here. But first, why did you decide to host the show on eBay?

Dev Harlan: I am from the Bay Area, so I feel some weird affinity for a company that I used to drive by regularly. To be serious, I think it is not sufficiently studied how the multiplicity of platforms conditions how art today is distributed and contextualized online. Whether Etsy or Artsy, Tumblr or Objkt, each imposes a different lens and framing, sometimes nuanced, often blatant, that is just as coded as any museum or gallery context.

I think eBay was an instinctual choice for me, as I have a memory of when the platform felt more like Craigslist: scrappy, utilitarian, and not a place you would look for art. It's a more streamlined corporate vibe now, but still there is an interesting flattening effect when placing something in such a wide-open marketplace that I find is revealing of what platforms do. What also interests me is the ability to perform auction mechanics that mirror the same speculative logic of major art auction houses, but stripped of any curatorial pretense, where a classical marble and a used blender may be seen side by side.

LJ: You have said that the show argues against a specific kind of innocence, the idea that the digital gets to have its costs waived because it's "just information", weightless and elsewhere. Could you expand on that?

DH: Yes, I think there is a tendency for digital art to imagine itself untethered from the material world, free of the market's usual demands on physical objects.

Yet media always requires mediation. There must be a screen on the gallery wall or on your desk. There must be a computer, video player, or some device to run the software. Digital art is contingent on myriad pieces of hardware entangled in systems of global extraction and technocapitalism, and part of the goal of the show is to make those contingencies visible.

Even a net artwork must rely on some server infrastructure, typically within a large data center, to be served up to a browser.

There are two artworks in the show that work on that infrastructural level. For example, Michael Neff hacks the description of the eBay listing itself to serve up real-time hotlinked images from a randomized set hosted on his own server. You receive a print of the image in the listing at that moment of purchase. Exonemo has created a net artwork that creates an ASCII art topography in the browser, and the eBay auction transfers ownership of the domain.

LJ: How have your fellow artists responded to the challenge of supplying work for "WYSIWYG" and what have you learnt from their responses?

DH: eBay's old slogan promised, "Whatever it is, you can get it on eBay." The artists in the show test that claim with inventiveness and humor, and I was truly surprised at the variety of interpretations of my original brief. Konstantina Mavridou, for instance, has translated excerpts of a computational sound performance to QR codes, printed on marble. Chris Coleman has produced a printed 12-month calendar in which each monthly image is generated by a model trained on extant paintings from one of his early 20th-century ancestors.

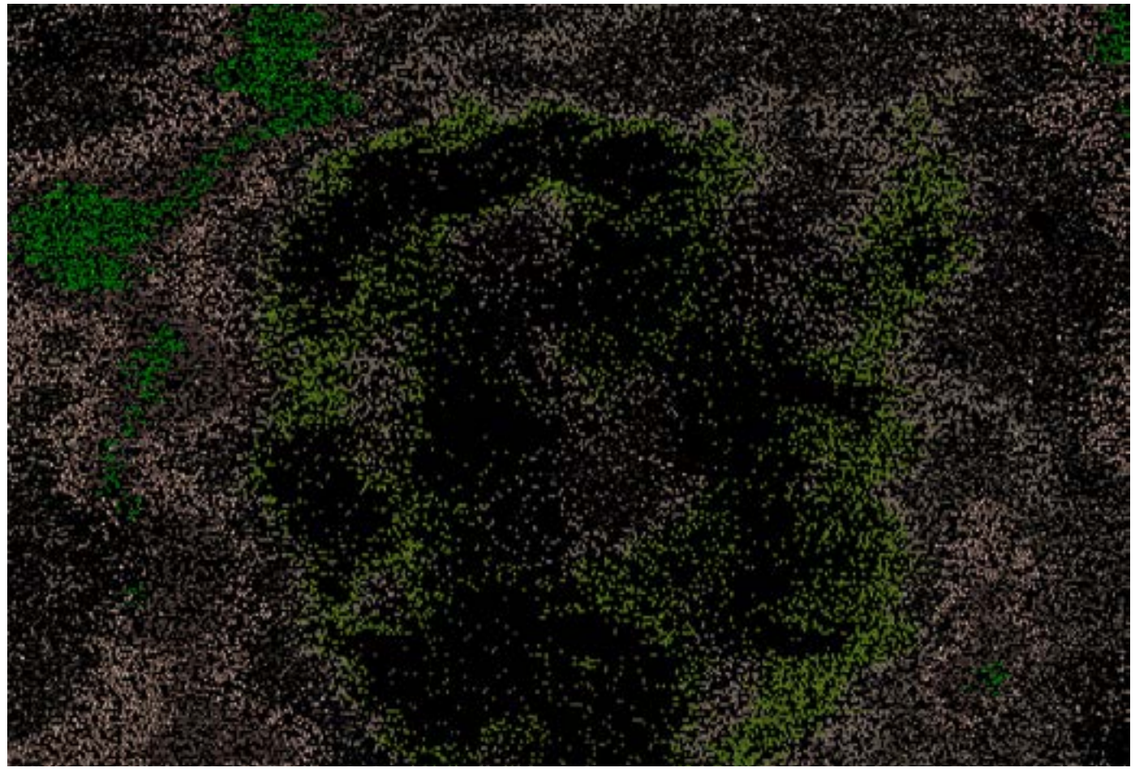
I think I learned that my own concept needed to be more fluid. The filmmaker Yifei He will create a deck of cards from stills of her past films, such that the narrative may be reorganized by the owner. The veteran media artist Zsolt Mesterhazy will deliver to you a square patch of fabric sheared from his woven cardigan on which he has sneezed. Indeed, what you see is what you get.

LJ: You have described the approach of the show as speculative, like an auction house sale, but where the work is displayed for sale without "curatorial pretense". And there is a

> *" I like to think that obsolescence is a lack of imagination, and that has led me to indulge in a certain amount of care for technology that borders on the absurd."*
>
> Dev Harlan

"WYSIWYG"

The group show "WYSIWYG (And Other Things You Can Buy on eBay)", organized by Dev Harlan, was online on eBay until October 9, 2026. The 16 participating artists were Benton C Bainbridge, Peter Burr, Chris Coleman, Alexa Crouwers, Bridget DeFranco, Exonemo, Mark Fingerhut, Matthew D. Gantt, Sarah Grant, Dev Harlan, Yifei He, Konstantina Mavridou, Zsolt Mesterhazy, Michael Neff, Motomichi Nakamura, Taezoo Park.



exonemo, ud1dris1vgpwu0semsdud9uadpt9aqhgeinudlv7ouhzj6h76ujo5yr7ccvwvqy.land, 2026

clear variety in approach from the exhibiting artists: with some shipping work in USB drives, or classic computers, while others are using the server infrastructure of eBay as their basic material. How is an art object to be interpreted in this context?

DH: Not to oversimplify, but you could say the show is a form of McLuhanism, but with more steps. The context of eBay, a long-tail auction platform, is not where you expect to find contemporary art, much less conceptual digital artworks. But it is exactly that cognitive disconnect that I think becomes interesting. It underscores how platforms necessarily condition how any image, art or otherwise, is apprehended over mass media, at present the internet. This is basic McLuhanism.

I also think a cheeky ambiguity emerges for many of the works in the shows. Benton C Bainbridge, pictured holding a shrink-wrapped VHS tape, for instance, or Taezoo Park's LED matrix, begin to resemble the kinds of tech equipment listings that are already ubiquitous on eBay. So, the medium is a mixed message.

LJ: An artist like Jan Robert Leegte has seen the browser window as a sculptural object, just as Maya Man sees a wall-mounted iPhone displaying her work at bitforms gallery, New York, as a sculpture. Are both cases of artists working in a way that understands the moment of embodiment?

> *I think watching the work of preservation, and even maintaining my own artworks, makes it more clear how a digital artwork is tethered to its hardware. For instance, Rhizome's philosophy is precisely to preserve hardware and software simultaneously."*
>
> Dev Harlan

Read the full article here at rightclicksave.com

DH: Yes, however, I think Leegte and Man are doing something altogether different. A sculpture in the shape of a browser, for instance, is representational, a shared cultural referent to the idea of networked information. On the other hand, Man putting an iPhone on the wall shortcuts representation. The object is the index. Man is also working with digital embodiment, as the software artwork is necessarily embodied in that device.

The cameras and TVs used by Nam June Paik or Bruce Nauman are apt precedents for appropriation of a media technology as sculptural object. However, there is more happening than a Duchampian readymade; the mediating technological object is also a functional part of communicating the artwork. In Man's case, the iPhone performs as an appropriated object, loaded with all the representational meaning associated with mobile devices. Moreover, it acts as the functional embodiment of a software artwork with its own radical fluidity.

This is also evident in "WYSIWYG", in the software artwork NATURAL CONTACTS, a collaboration by Peter Burr, Bridget DeFranco, Mark Fingerhut, and Matthew Gantt.

EXONEMO: COURTESY OF THE ARTIST

It is a software virus as performance, but it is only possible with the entire apparatus of a computer to support it. Within their room-size cubicle desk installation, the computer becomes a sculptural readymade.

Sarah Grant's work is a software visualization of bio-electric data from a slime mould experiment, but to embody the work she builds a Raspberry Pi system from scratch. The fluidity of slime is entangled with bespoke hardware that is the art object.

My work in the show is also a generative software artwork using data science, in this case satellite images of Greenland glaciers. When presented on a 1-bit computer from the 1980s, the device is more than a necessary container, it is also a context. And like Maya Man's appropriated iPhones, it is also an object loaded with all the baggage of its consumer electronic appeal. Indeed, they are both made by Apple.

LJ: Your exhibition addresses the moment of turning something as ephemeral as coding or pixels on a digital screen into a commodified physical object. Is it, at that moment, being cared for or confined? How does that moment of physical casing affect what you describe as digital art's "radical fluidity"?

DH: I feel like fluidity and containment are always in superposition, like a quantum bit. By "radical fluidity", I am really meaning the process of programming or working with digital tools in general, where images and processes are always in motion. A digital artwork can be modified, mutated, copied, or deleted in an instant. But there is no "moment" of embodiment; it is always confined in the sense that it must be a readable series of magnetic traces on a physical drive somewhere, whether that's your personal computer or served up from a data center. What this show is really doing is making that technological substrate explicit.

If you were to buy and own a video artwork, like Motomichi's for example, how do you actually receive it? The simplest might be a network transfer, a case of magnetic traces being sent from one drive, over fiber optics and copper, to another drive. To make it shippable by mail, Motomichi decided to put the video file on an SD card, a small plastic container for magnetic traces.

In the case of video works, "radical fluidity" is more curtailed by no longer being in the hands of the artist, rather than by the specifics of its container. Alexa Crouwer's work is double containment: the video is on a USB stick inside a glass bottle.

For an owner of the artwork, it is no longer "fluid" in that the video will always play back the same way. But if returned to the artist, Crouwers could easily modify the file on the USB drive in countless ways. It remains fluid, but it is always contained. The glass bottle is a perfect metaphor.

HARLAN: COURTESY OF THE ARTIST



Dev Harlan, Greenland Landsat Timelapse Plus Speculative Core Sample, 2026

LJ: How has understanding the concept of digital art embodied on the network platforms or in the physical casings of consumer electronics informed by your views of preservation, or care, of digital art? As practised by organizations such as Rhizome, in New York. and LI-MA, in Amsterdam.

DH: I like to think that obsolescence is a lack of imagination, and that has led me to indulge in a certain amount of care for technology that borders on the absurd. However, Taezoo Park is much more of an avid preservationist than me, and does professional restoration. I highly encourage anyone in NY to pay a visit to his studio to see his vast collection of well-cared-for screens and display technologies.

I think watching the work of preservation, and even maintaining my own artworks, makes it more clear how a digital artwork is tethered to its hardware. For instance, Rhizome's philosophy is precisely to preserve hardware and software simultaneously.

They understand that it is an empty gesture to simply redevelop an old software artwork in a modern language. Besides the loss of the tiny idiosyncrasies of a specific system, there is labor in coding that is a direct reflection of the artist's cognition. And indeed is that not one of the appeals of an art object, that it is in some sense a snapshot of a human subjectivity at work? ▮

Dev Harlan is a New York-based artist working in sculpture, installation, and digital media. He has exhibited in the US and internationally and has permanent commissions with corporate and private collectors. Harlan is a 2020 NYFA Fellowship Finalist in Digital Media Arts and winner of the 2022 MOZAIK Artist Grant. Solo exhibitions include Christopher Henry Gallery and Gallery Madison Park, New York. Group shows include the Sharjah Art Museum, UAE; the New Museum, New York, and the Singapore Light Art Festival. Harlan has been an artist in residence at the Frank Lloyd Wright School Of Architecture and the SVA Sculpture & New Media Residency. He is currently pursuing a BA in Earth Science at Columbia University.

Louis Jebb is Managing Editor at Right Click Save

INTERVIEW

THE CARE OF AN ARTIST'S ARCHIVE | STAN VANDERBEEK

Sara and Johannes VanDerBeek discuss activating their father's archive with **Chelsea Spengemann** and **Alex Estorick**



Stan VanDerBeek, Poemfield No. 1 (Blue version), 1967. Installation view, "Micro Kosmos", Magenta Plains, New York

Stan VanDerBeek occupies a singular position at the intersection of art and technology as a humanist polymath who moved fluidly between experimental film, computer animation, and printmaking. A new exhibition of the artist's work at Magenta Plains, New York, "Micro Kosmos", bridges the digital to the physical through works such as the Moveable Mandalas, a series of prints derived from frames of the landmark "Poemfield" films made with programmer Ken Knowlton at Bell Labs in the mid-1960s, and shown here for the first time since their original presentation at the University of Maryland, Baltimore County in 1976.

Alongside rare silkscreens produced at Graphicstudio in Florida, the show is a window on VanDerBeek's restless movement between digital and tactile means — a chance to appreciate the artist's array of talents in tangible form.

Stewarding that legacy is the work of the Stan VanDerBeek Archive, led by two of the artist's children, Sara and Johannes VanDerBeek alongside Chelsea Spengemann, co-founder of Soft Network, a non-profit that connects artists with complex, transdisciplinary practices to those managing estates and collections outside dominant commercial structures.

The organization grew out of a recognition that the challenges facing VanDerBeek's archive — how to preserve, restage, and widen access to site-specific and iterative work — are shared by many estates at a time when institutions are, in Spengemann's words, simply full. What follows is a conversation about activating an archive without freezing it: bringing VanDerBeek's work into dialog with contemporary artists and engineers, recovering overlooked collaborators, and asking, as VanDerBeek himself always did, what technology is ultimately for.

Alex Estorick: One of the priorities of Right Click Save has always been to shed light on histories of media that are often overlooked. Stan VanDerBeek is central to the early history of computer animation as well as the canon of digital art. His career, personal history, and pedagogy are insufficiently celebrated. What can you tell us about the latest exhibition of his work at Magenta Plains?

Chelsea Spengemann: We really wanted the spotlight in this exhibition to be around the Moveable Mandalas and the context for that work — the other prints he made while working in Florida at Graphicstudio, and the "Poemfield" films from which the graphic is actually pulled. Getting to appreciate a single print on its own has been a wonderful thing when you're so immersed in someone's entire body of work.

The moment we're in now — thinking about technology and trying to get back to some kind of physical materiality — feels connected to VanDerBeek's thinking between computers, film, and printmaking. You can ride this wave with him in and out of ancient forms of consciousness and more future-thinking ways.

The prints are his way of going back to that tactile quality of color. He studied at Black Mountain College where Josef and Anni Albers were highly influential and the large blue silkscreen in the show is a truly rare piece, with the color still so vibrant. Through that one silkscreen, you can tell his entire story from start to finish.

Johannes VanDerBeek: I agree that it's been rewarding to highlight this particular body of work. Approaching the show this way fits with the logic of how we've approached the archive: not fully chronological, but giving focus to certain chapters of his output. We gave a lot of time initially to the multi-screen projects, then to the fax murals, which were central to his first solo show at Magenta Plains in 2024. Now we are looking further into the ways he was experimenting with early computer graphics. It's clear that he was excited about the computer as a new way of generating images and he was pushing the technical limitations of machines. The current exhibition has been an opportunity to look at this important moment of exploration for him through a selection of discrete artworks.

Sara VanDerBeek: "Micro Kosmos" comes out of our research around a specific exhibition "Machine Art: An Exhibition of Inter-graphics" that our father presented in 1976 at the University of Maryland, Baltimore County (UMBC).

When he began generating the "Poemfield" computer film sequences with Ken Knowlton at Bell Labs in the mid-1960s, using punch cards for programming and the BEFLIX system of rendering that Knowlton had pioneered, our father initially captured moving images off the monitor via a kind of kinescopic process. The films were then colorized by another collaborative duo, Robert Brown and Frank Olvey, on the West Coast. Later, from 1972-76, he took frames from the original 35mm black-and-white films to produce a variety of prints, combining earlier communication technologies such as intaglio printmaking with digital means of creation.

For this presentation at Magenta Plains, we re-fabricated the Moveable Mandalas, which are being shown for the first time since 1976. These works will go on to UMBC next year to be presented on the same wall in the Albin O. Kuhn gallery where he first showed his work at the beginning of his professorship. It was there that he established

COURTESY OF THE ESTATE OF STAN VANDERBEEK AND MAGENTA PLAINS



Stan VanDerBeek, Untitled, 1971.



Stan VanDerBeek, Moveable Mandala I, 1976

the Mid-Atlantic Media Center, gathering experimental filmmakers, video artists, computer scientists, and those interested in public television and computers as spaces of engagement and feedback with and within a larger "networked" community in Baltimore and beyond.

JVDB: We've also been sorting through a lot of his papers and documents at MoMA, and the abundance of his neural network always hits me — he was supercharged with ideas from early on. He was also writing constantly while taking pictures of paintings — a nice segue into film, which became a new medium that exploded his sense of movement and understanding of time.

He recognized that technology shifts paradigms, and it continuously amplified and morphed his ideas. He also had an alternative notion of the artist's role in the world, feeling that they had a responsibility to determine how technology would be utilized.

He urged artists to engage with these newer forms of art-making because he felt they had an enormous potential to change how we experience each other and the world.

SVDB: Our father was highly iterative in his practice, continually using and reusing past footage and imagery in new filmic works or video montages. Every work in this exhibition is a reimagining or reinterpretation of earlier works in new and different forms.

We've been working intensively on the preservation and digital remastering of his "Poemfield" films, which will be part of forthcoming museum exhibitions as well as a larger exhibition at Magenta Plains in 2027.

Our work as the Stan VanDerBeek Archive is a labor of love and reverence for an artist whose practice informs our own and whose contemporary resonance is significant and ongoing.

Any income generated by sales of his work goes toward preserving and widening access to his work. In this, and my work with Soft Network, I hope to contribute to a more expansive, inclusive, and dynamic art historical narrative than that which I was taught as an artist.

AE: What more can you tell us about Soft Network, which supports artists working with both digital and analog media, as well as their estates, in building sustainable legacy models?

CS: Soft Network came out of learning from Stan's and his contemporaries' practices, historical collaborations, and ethos, but also my interest in cooperative models and alternative economies. In addition to caring for her father's legacy, Sara is an interdisciplinary artist, educator, and curator whose work operates across all these different places, similar to her father.

> *"He recognized that technology shifts paradigms, and it ... amplified and morphed his ideas. He also had an alternative notion of the artist's role in the world, feeling that they had a responsibility to determine how technology would be utilized."*
>
> Johannes VanDerBeek

We wanted to create a space to connect contemporary artists with complex practices that might not fall into the dominant commercial structures with those who are stewarding art collections and artist archives, whose concerns overlap.

Prior to Soft Network, I co-created a listserv for people working with artists' estates and it spread like wildfire. Different estate and legacy workers joined and we began emailing each other, asking how to approach various problems. After we decided that the Archive should move out of Sara's studio and that we were going to start Soft Network, the Estate of Rosemary Mayer responded to an invitation to share space and they became our partners in shaping the non-profit.

Rosemary and Stan might not seem connected on the surface, but their estates share the challenge of figuring out how to present and restage their works. Rosemary also worked highly iteratively with ephemeral materials and events. Some of her sculptures are made with ribbons, sticks, and paper, and are intended to be shown once, taken down, and remade. That has become complementary to thinking about Stan's multi-screen installations, which are also site-specific and rely on readily available materials.

JVDB: All of this reinforces the value of learning about an artist's work in a non-linear way. Working together on Stan's collection, we've asked ourselves: "What does it mean to activate or reactivate an archive, as well as where can you create new access points for established histories?"

SVDB: When a living artist brings a past practice into dialog with themselves and others — that to me is one of the most effective forms of engagement with an archive. I do a lot of research in archives and museum collections for my own practice, and when I see the exhibitions that Soft Network presents, I'm so excited at how the work of non-living artists are enlivened and reanimated by contemporary artists.

This work is not hagiography; we are not keeping this person preserved in a particular moment in time, passing over the complications of their existence. My work and, at times, that of Soft Network draws on feminist perspectives and histories: most art practices are collective and I hope to work outside of patriarchal bias to present our father's work in dialog with other artists and engineers, for example the programmer Carol Bosche at Bell Labs, who worked with my father on his film Collideoscope. All practices are collaborative without always being acknowledged as such.

CS: With Soft Network, we can bring in students who are studying archiving or art history but have never met an artist or never had an opportunity to work hands-on with the material outside of an institution.

The [scale of] art production has been huge over the last fifty years [...] The institutions are full. But there's an exciting new space for thinking about how this material can be shared more broadly outside of institutions and the art world, and technology will play a big role in that.

JVDB: That brings back a question central to Stan's work: "what is this technology for?" He was a child who saw the nuclear bomb — a foundational image of technology being used to destroy the world.

At the center of the conversation around technology is people. [The question] was always: can technology be used to reshape and redirect the world towards connectivity? Looking through his papers, it's really active networking. He was a humanist [asking] how are we going to navigate a growing and accelerating interconnectivity?

AE: Reading Stan VanDerBeek's writings from the early 1970s, his joining of the language of technology with ecology is prescient and also a product of the environmental movement. It feels like he was pre-empting a posthuman turn from "man into machine".

CS: I think he really experienced what he was writing about — television, video, and then computers — in terms we can also identify with now. He wrote a lot about the potential for audience expansion. There's a way in which he also seems to have understood the artist as a higher being — not an elite being, but someone tapping into their consciousness and using these tools and relating to each other through them.

Read the full article here at rightclicksave.com



Stan VanDerBeek, White Micro Kosmos (Variation 1), 1972-75, White Micro Kosmos (Variation 2), 1972-75, and Untitled, 1971 (right). Installation view, "Micro Kosmos", Magenta Plains, New York

JVDB: The difference with the artist's mind — thinking of higher beings — is that in order to generate art, you have to see and feel relationships between things. For some people that's really dialled up. He was the right person at the right time with the post-war explosion of technology, this accelerating wave, but also someone who had a constant imaginative impulse [and] who never hit a plateau. The technology continued to amplify and expand his ideas.

His early drawings betray a leap-before-you-look mentality. He was also always reaching to actualize projects — "could I do this here? Is there money for that?" But the aim of making the project wasn't to generate more wealth for himself but to generate the means to make more work. That highly generative cycling fits with his personality.

SVDB: When thinking about posthuman concepts or ecological concerns, I think of his Movie-Drome, which was developed within Gate Hill Cooperative in Rockland County, New York. That community, which included artists such as M. C. Richards and John Cage, as well as the architect Paul Williams, was inspired by the meeting of ecological and agrarian concerns, together with the possibilities of collective living and the sharing of resources. Likewise, the Movie-Drome joins the human, the machinic and, with its prototypal immersive projections, the technological interface as we experience it today. Integral to this for our father was the dome's potential for connectivity, knowledge transfer, and feedback in communities that are outside of urban centers.

The dome's physical structure is a functional form familiar to many — a grain silo still in use across the American landscape. Yet for our father, who grew up in Washington Heights during the Depression, it would have been a foreign object open to interpretation. He imagined its atmosphere as an ever-changing array of moving images — optical assemblages of histories and contemporary events that could be shared globally. He hoped that the dome would be one of many satellite transmission sites throughout the world.

He was also working at Bell Labs at the same time that they were developing advanced military procedures that employed radar. He was artist in residence at the Center for Advanced Visual Studies (CAVS) at MIT when students were protesting the school's involvement with the American military during the war in Vietnam.

Moving as an artist between different fields and sites including Bell Labs, NASA, as well as different schools and museums, his thinking about the "man/machine" relationship derived from his physical proximity to and observation of the idealistic possibilities and potentially devastating impacts of emerging technologies.

There is something incredible about seeing the "Poemfields" in this show against the contemporary backdrop of AI-influenced digital communications. They are not only about pixels as a modular unit of digitality but also the intensive labor of humans and machines at work together.

Sara VanDerBeek is the daughter of the experimental filmmaker Stan VanDerBeek, and an artist based in New York. Recent institutional exhibitions include "Veiled Presence: The Hidden Mothers and Sara VanDerBeek" at Norton Museum of Art, West Palm Beach, and "Women & Museums" at Minneapolis Institute of Art.

Johannes VanDerBeek is the son of the experimental filmmaker Stan VanDerBeek and an artist who lives and works in New York. He is represented by the New York-based gallery Marinaro and has held solo exhibitions at Marinaro, Zach Feuer Gallery, and Halsey McKay Gallery, New York, and Brand New Gallery, Milan. VanDerBeek has participated in group shows at the Oakland University Art Gallery, Rochester; Rachel Uffner Gallery, New York; and Tang Museum at Skidmore College, Saratoga Springs, among many others.

Chelsea Spengemann is the Executive Director of Soft Network, a New York-based non-profit she co-founded in 2021, which includes the professional resource group AFELL (Artist Foundations and Estate Leaders List). Spengemann has helped to manage the Stan VanDerBeek Archive since 2008 and, in 2019, co-curated "VanDerBeek + VanDerBeek" with Sara VanDerBeek at the Black Mountain College Museum + Arts Center in North Carolina.

Alex Estorick is the Founding Editor of Right Click Save.

INTERVIEW

ON COLLECTING | EDOUARD ON NFT PRESERVATION

The creator of the risk-auditing platform NFTimeless discusses storage, preservation, and digital art collecting. This article was produced by Right Click Save in partnership with **100 collectors**, the global network for digital art collectors.

ELEONORA BRIZI



William Mapan, *Sketchbook B #28*, 2025

Following the shutdown of several NFT platforms, questions surrounding the preservation of blockchain art have become increasingly urgent. When platforms disappear or stop maintaining storage infrastructures, NFTs can in effect break: metadata becomes inaccessible, media files disappear, and artworks can no longer circulate properly across marketplaces and display platforms.

Although NFTs are often associated with ideas of permanence — immutable, decentralized, eternal — most works still depend on fragile external infrastructures. In practice, the token usually points to metadata, which then points to media files stored on an InterPlanetary File System (IPFS), the permissionless hard drive Arweave, centralized servers, or, more rarely, fully on-chain. If either the metadata or the media disappears, the NFT in effect breaks, even if ownership remains verifiable on-chain.

> *"I still think blockchain introduced something extremely important for digital art, especially around provenance and ownership. But preservation is much more complex than initially imagined"*
>
> Edouard

This fragility often remains invisible because platforms may continue displaying cached versions of artworks long after the original files have disappeared. Many collectors may already own broken NFTs without realizing it.

Despite previous initiatives such as ClubNFT attempting to raise awareness around independent archiving and preservation, the issue remains widely underestimated across the ecosystem.

We spoke with EDOUARD — collector, artist, art historian, and creator of NFTimeless, a platform that audits NFT preservation risks — about storage infrastructures, preservation, and digital art collecting.

COURTESY OF THE ARTIST AND EDOUARD

Eleonora Brizi: What work changed the way you looked at digital art, and how did you first begin collecting blockchain-based art?

EDOUARD: It's difficult to isolate one specific work because every artist slightly changed my understanding of digital art. Before NFTs, I was already immersed in digital culture through music production, photography, and virtual environments.

One of my earliest memories of digital ownership dates back to the early 2000s, when I bought a virtual pair of Levi's jeans for an avatar inside a metaverse platform called There. Even though I knew it was ultimately just a database entry, it still carried identity, rarity, and social value.

The real shift happened later, when I became deeply interested in blockchain infrastructures and visited NFT Factory in Paris. Seeing digital artworks physically displayed, curated, and collected like contemporary art completely changed my perception. I remember specifically collecting a work by Louis Paul Caron and realizing that this no longer felt like a digital product, but an artwork. The immediacy of discovering and collecting art directly through a QR code also felt radically new to me.

Initially, I didn't think of myself as a collector. It was more of an impulse than an identity, and I actually imagined myself minting NFTs rather than collecting them. But over time, the collection itself changed my position within the ecosystem.As it grew, I started feeling a responsibility toward it. On Crypto Twitter, most people around you are artists hoping to be collected, and eventually you become positioned as a collector whether you intended it or not.

EB: Do distinctions between "digital art" and "contemporary art" still feel meaningful to you as a collector?

E: Historically, the NFT ecosystem developed somewhat outside the traditional art market because many artists were not represented by galleries or institutions, and many early collectors came from crypto rather than the contemporary art world. Today, digital art is increasingly entering traditional art circuits through institutions such as Centre Pompidou or LACMA. A collector ultimately hopes digital art receives the same historical and cultural recognition as works circulating through Art Basel or major museums.

Physical spaces still remain essential because they create legitimacy, curation, and trust. But at the same time, the digital art ecosystem still lacks stable infrastructures comparable to those surrounding traditional art, and nowhere is that fragility more visible than in NFT storage.

COURTESY OF THE ARTISTS AND EDOUARD



Louis-Paul Caron, Day 366 — THESEE & CALYPSO, 2022



Baron Lanteigne, *Manipulation6*, 2021



Léo Caillard, Fragmentation of the Venus Wave, 2024

EB: What led you to create NFTimeless, and why does NFT preservation matter today?

E: NFTimeless came from a very personal frustration. Once you understand how NFT storage actually works, you realize how fragile most collections really are. One of the biggest misconceptions in the space is that people think the artwork itself is stored on the blockchain, when in reality the token usually only points to metadata, which then points to media files stored elsewhere.

As a computer science engineer, I started manually preserving my collection myself. For every NFT, I had to find the smart contract, retrieve the metadata CID, open the JSON file, extract the media CID, then pin everything myself through IPFS Desktop on my Mac. Sometimes the CID was already inaccessible, sometimes the metadata existed but not the image, sometimes the image existed but the metadata was broken. What disturbed me most was realizing that most collectors had absolutely no idea this fragility even existed underneath the interface.

The real issue with IPFS is that failures are silent and individual, and collectors often don't realize anything is wrong. You don't wake up one morning and suddenly see the whole platform disappear. Instead, a metadata file quietly disappears because nobody is paying for pinning anymore, and the NFT in effect breaks.

Everything changed when I discovered ClubNFT because, for the first time, I felt relief. I could automate preservation, archive the files, download backups regularly, and stop constantly worrying about losing artworks. But when ClubNFT itself shut down, the fragility of the ecosystem suddenly became impossible to ignore.

That experience led me to create NFTimeless, a technical audit tool evaluating NFTs according to storage durability, smart contract transparency, and infrastructural risk.

EB: What exactly does NFTimeless analyze?

E: NFTimeless primarily focuses on asset durability. One of the things the platform does is calculate the probability of an NFT still functioning 40 years into the future. The highest score possible today is 86% because permanence does not really exist. The score focuses on the weakest point in the storage chain: even if the media is fully on-chain, metadata depending on a centralized website still creates a vulnerability.

During this research, I also became increasingly interested in vulnerabilities embedded in NFT smart contracts. People often think NFT ownership works like Bitcoin ownership, but it doesn't. With Bitcoin, your wallet directly owns the asset. With NFTs, ownership is often just a variable inside a smart contract, and the contract itself has to play fair.

This led me to investigate older OpenSea Shared Storefront contracts after a specialist involved in writing the ERC-721 standard mentioned a potential backdoor. I reproduced the experiment on a testnet and confirmed that, under certain conditions, the admin could theoretically reclaim ownership.

For me, the issue is less about malicious intent than opacity. If the source code is private, you cannot fully know what the contract allows, which is why NFTimeless penalizes NFTs with unverifiable or hidden smart contracts.

EB: You mentioned the fragility of NFT storage infrastructures. How does IPFS actually work, and how is it different from Arweave?

E: This is actually a very important distinction because people often speak about IPFS and Arweave as if they were simply two storage options, but they function very differently.

IPFS is not really a storage protocol in the strict sense, but more a routing protocol. The CID identifies the file, but somebody still needs to actively host and pin it. If nobody keeps the file online anymore, IPFS has nothing to retrieve. This creates what I call a responsibility problem: nobody fully knows who is supposed to preserve the work over time — the artist, the platform, the collector, or a third-party service.

Arweave works differently because it was designed around long-term persistence. Instead of relying on continuous pinning, it uses an upfront payment system intended to incentivize long-term storage directly within the protocol itself.

If you buy a painting and forget to pay €30 one month, the painting does not burn. But with IPFS, if nobody continues paying for pinning and nobody else has the exact same file, the NFT can in effect break forever. Even finding another copy of the image later is not enough because it has to be the exact same file corresponding to the original CID.

That is why I generally consider Arweave safer for larger files when fully on-chain storage is not possible. Fully on-chain remains the strongest preservation model, especially for generative art, but for larger media files, Arweave offers a more coherent long-term preservation structure than IPFS. In the end, no storage solution is completely permanent. Every system requires some form of maintenance, economic incentive, or community participation over time.

Read the full article here at rightclicksave.com



Benjamin Bardou, *Simulation#2*

COURTESY OF THE ARTIST AND EDOUARD

EB: Are collectors taking preservation seriously enough today?

E: Honestly, not really. Even when collectors know about the problem, many still prefer not to think about it because the NFT ecosystem developed around speculation, speed, and constant novelty, while preservation feels slow and administrative. But if digital art is going to survive historically, preservation becomes unavoidable.

With physical art, there is already a culture of stewardship: collectors insure works, document provenance, track restoration histories, and preserve context. Digital art still lacks most of that culture, even though preserving digital works is often much easier and cheaper than preserving physical artworks.

I think many people entered NFTs through financial speculation rather than long-term collecting habits. But if blockchain-based art is going to survive historically, collectors eventually need to think less like traders and more like custodians.

That also became one of the reasons why I started developing LogArt alongside NFTimeless. In digital art, many collectors still manage everything through wallets and screenshots, which is not sustainable long-term. With LogArt, the idea was to create a collection management platform where physical and digital works can coexist, preserving not only the files themselves, but also their context, provenance, metadata, and exhibition histories over time.

EB: What do these preservation challenges ultimately reveal about NFTs and decentralization?

E: We hear words like immutable or decentralized and assume everything will survive automatically, but most NFT projects still depend on servers, storage systems, interfaces, subscriptions, and people actively maintaining infrastructures over time.

I still think blockchain introduced something extremely important for digital art, especially around provenance and ownership. But preservation is much more complex than initially imagined. And … if you own a 1/1 that belongs to a larger series, what happens if the rest of the collection disappears because nobody maintains the files anymore?

One of the biggest unresolved questions is still responsibility itself. Who is actually responsible for preserving the artwork over time? The artist? The platform? The collector? Nobody really knows. Collectors often assume platforms are preserving the works, platforms may assume artists are doing it, artists may assume collectors are archiving them independently, but in reality responsibility often remains undefined.

Ultimately, preservation still depends on people maintaining infrastructures over time. Decentralization does not remove responsibility. If anything, it distributes that responsibility across the entire ecosystem: artists, collectors, platforms, institutions, and communities. ▮

EDOUARD is a French multidisciplinary artist who has exhibited at NFT Factory, IHAM Gallery, NFC Lisbon, ArtVerse, Fondation Cherqui, and Avant Galerie Vossen. His work is part of the collection at the Francisco Carolinum museum in Linz. His current practice focuses on digitally crafted imagery, his Pixel Field concept, employing techniques such as pixel drawing and color cycling, manual artefact extraction, and algorithmic processes. He has curated several physical exhibitions, served as curator of digital art for ten thousand public billboards across fifteen countries, and launched the French Artists on Chain initiative. He regularly speaks on the challenges, opportunities, and paradigm shifts that digital art brings to artists, collectors, and cultural institutions. He's also the creator of the NFTimeless digital art durability audit service and the log.art collection management tool.

Eleonora Brizi is a digital art curator, specializing in blockchain art, while also focusing on generative AI. She is currently pursuing a PHD at Université Paris2Panthéon-Assas, focusing on "Blockchain as Artistic Medium: Exploring Decentralized Systems and Governance Through Art". Brizi is co-founder of 100 collectors, the global network for digital art collectors; founder of Breezy Art, a curatorial and research practice focused on art and technology.



Norman Harman, Chariot and Mongrels Atomic Landscape A, 2022.

THE NFT APOCALYPSE

In 2022, Jason Bailey, co-founder of Right Click Save and of its original owner, ClubNFT, a startup dedicated to supporting the new generation of digital art collectors by offering backup services for NFTs, wrote this article warning of "NFT Apocalypse".

His argument was directed at the many NFT owners at the time who were unaware of the fragility of their holdings, a large percentage of which were not stored "on chain".

Some of the exchanges Bailey mentions, as well as ClubNFT itself, have shut down in the past two years as the market has collapsed, and Right Click Save was sold to Tony Lyu in 2025. The advice Bailey offers in this extract from his original article, was sadly prescient four years ago, but is just as vital a resource for collectors in 2026

Many NFT collectors are living under a potentially devastating misapprehension — that their NFTs exist fully on the blockchain and are therefore safe. The reality is that the artwork and metadata for roughly 90% of NFTs are not stored on the blockchain. Typically the token itself lives "on chain" and links out to the art, metadata, and other assets "off chain." This raises some critical questions that all NFT collectors should be asking but rarely do. Where does the artwork and metadata for my NFT live if it is not on chain? Who is paying to store the artwork associated with my NFT? And what would happen to the value of my NFT if the artwork and metadata permanently disappeared?

A recent study by YourNFTs, independently verified by ClubNFT data scientist Nick Hladek, shows that only ~10% of NFTs are on chain, ~40% are on private servers, while ~50% use a peer-to-peer protocol called InterPlanetary File System (IPFS).

Let's walk through the three storage scenarios one by one.

COURTESY OF THE ARTIST

Fully On-Chain NFTs (~10% of all NFTs)

In an ideal world, all NFTs would be on chain and I wouldn't be writing an article about the inevitable NFT Apocalypse. Unfortunately, storing large files like images and videos on chain is crazy expensive and almost nobody does it. To put it into perspective, one megabyte of data on Ethereum can cost thousands of dollars at recent market rates. As a result, very few projects store everything on chain.

Out of my collection of over 1,000 NFTs, only one project, EthWords, is fully on chain. Because EthWords does not incorporate images, it remained affordable for them to keep it fully on chain.

I expect that lots of people will be surprised .... to discover that many well-known NFT projects that are marketed as "on chain" really only store a portion of the NFT — the image, metadata, or code — fully on chain. Still other "on-chain" projects redundantly pin information on IPFS in addition to being on chain.

NFTs on Private Servers (40% of all NFTs)

There is no way to sugarcoat this: NFTs on private servers (~40% of all NFTs) are doomed and there is nothing one can do, as a collector, to save them. When a marketplace mints a new NFT and creates a permanent link from the token on the blockchain to an image stored on their private server, the collector has zero control over what happens to the image.

It gets worse. Because NFT marketplaces are essentially tech startups and, statistically speaking, 90% of tech startups fail, 50% in the first five years, when these marketplaces do fail, they also shut down their private servers, at which point your images disappear and your NFT permanently points to nothing.

Put simply, ~40% of all NFTs are dependent on private servers owned by NFT marketplaces, 90% of which will fail. In pure dollar terms, of the $40 billion dollars in NFT sales [in 2021] , at least $16 billion worth of NFTs sold are doomed to fail, and many of these will fail within the next five years.

In my collection, 44 NFTs link to assets on private servers. These include several CryptoKitties, which I bought on my very first day of collecting in 2017, as well as many NFTs from the popular marketplace OpenSea. OpenSea is an interesting case because, by default, creators minting on the platform have the option to edit their NFTs after creation. However, they can also freeze their NFTs, which prevents their being edited in the future and moves all of their off-chain content onto IPFS. Many marketplaces offer this feature in order to support "reveals." Hiding NFTs and metadata upon their initial minting allows one to control when people get to see the final assets, thereby gamifying the collecting process. Unfortunately, most artists don't know about this, with the result that over 98% of NFTs on OpenSea remain unfrozen and therefore editable and dependent on private servers.



In general, nothing can be done to back up NFTs on private servers. Why? Because even if you download all the images and metadata locally to your computer, the token itself, the piece that lives on the blockchain, will permanently link out to the private server of the marketplace long after the server and images are gone. What's needed is a system that allows collectors to back up and restore their NFTs without being forced to depend on a marketplace or any other third party. Luckily, that is exactly what IPFS offers!



Norman Harman, Marathon Man Atomic Landscape A,, 2022

"You need to do one of two things to take care of your IPFS NFTs. Pay a pinning service to create a contractual obligation that your images stay pinned to IPFS and/or download a backup of all your NFT files so that you can restore them to IPFS in the future should they disappear. We recommend you do both."

Jason Bailey

Read the full article here at rightclicksave.com

NFTs on IPFS (~50% of all NFTs)

The remaining 50% of NFTs follow best practices, relying on the open-source peer-to-peer protocol called IPFS. IPFS is really cool in that it creates a link (hash) to images and metadata based on their actual content rather than their location (as would a traditional hyperlink). This is awesome because when you upload your content to IPFS, it creates a unique identifier based on the exact content. The NFT can then link to that identifier and as long as someone pays to pin it on IPFS then everything is good!

When it comes to NFTs, IPFS is highly useful because it guarantees that the content that was originally linked from the NFT can't be changed (rugged) so long as the token is frozen (immutable). If you buy an NFT of a sailboat, you won't wake up in three months to find your sailboat has become a dog turd.

One common misconception about IPFS is that it is a magical form of free storage. In reality, NFT marketplaces are typically the ones paying to pin NFT files to IPFS and if a marketplace stops paying, those files can still disappear from IPFS forever.

You need to do one of two things to take care of your IPFS NFTs. Pay a pinning service to create a contractual obligation that your images stay pinned to IPFS and/or download a backup of all your NFT files so that you can restore them to IPFS in the future should they disappear. We recommend you do both.

The great thing about IPFS is that you can actually fix a file which has disappeared from the network so long as you have a copy of it.

■↑SuperRare is a great example of a marketplace that follows the IPFS standard. And because it uses IPFS during NFT minting, as long as you have a local backup of all your files, you don't have to depend on them or anyone else to protect your NFTs. .

■↑KnownOrigin as well as most Tezos-based marketplaces, including, but not limited to, fxhash, Objkt.com, Versum, and Teia, are examples of platforms that follow best practices for IPFS.

Protect Your NFT Collection

Congratulations, you made it to the end of the article! Hopefully, you are now excited to back up your NFTs even if you don't fully understand all the technical details above.

Jason Bailey is the creator of the art and tech blog Artnome.com and founder of GreenNFTs and ClubNFT. He co-founded Right Click Save, with Alex Estorick, in 2022.

On July 1, 2026, *Right Click Save* launched a new Forum section as a discussion board for the digital art community. It has attracted posts and comments on a range of topics, not least on AI. In this Forum post, the artist Primavera De Filippi received thoughtful answers from the artists Mario Klingemann and Benjamin Bardou and the writer Charlotte Kent to her question:

WHEN WERE YOU LAST SURPRISED BY AI?

Primavera De Filippi: I'm often impressed by the quality of AI, sometimes I'm even fooled into believing that something that is not real is real, but I'm hardly ever "surprised" by seeing something I had never seen before, which is actually surreal..

I've been thinking about how much of what comes out of prompt-based models is aesthetically boring. AI slop is, unfortunately, not a failure of the models but exactly what they've been trained to produce.

I'm curious what people have seen recently that looks different and novel? And what are the techniques that people use to escape from the promptable latent space (e.g. direct latent sampling, semantic sliders, evolutionary breeding, etc) ? Who are the main artists exploring these grounds?

Mario Klingemann: I called the phenomenon that you experience "The Gaussian Chase". Any technology that allows you to beat the odds defeats its own purpose at the rate of its success.

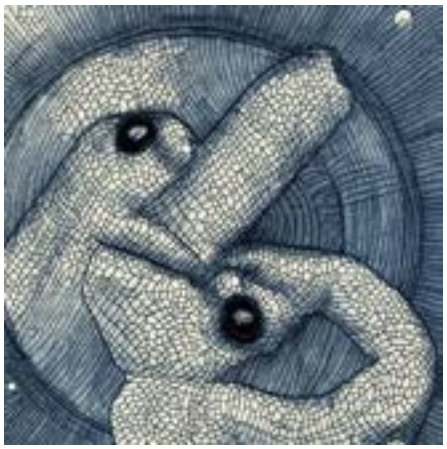
The problem in a nutshell is that AI has succeeded in making "interesting" output very easy and at a rapid pace. But the problem with interestingness is that it needs to be different and unexpected from what you already know. But the more unusual things you put into the world the more common you make them and the more bored you get. So by trying to escape the center of the gaussian curve (where the slop lives) you are actually pulling it with you and just when you think you reached the interesting outskirts you find yourself back in mediocrity.

So by asking people for different ways to navigate latent space if you are lucky you might get something that will give you a kick for another 15 more minutes but the moment the genie is out of the bottle you have already ruined it for yourself.

Which is of course just my excuse for not sharing my non-prompt methods, since I want to enjoy those rarer and rarer moments of surprise as short as they last...

This Forum conversation led Primavera De Filippi to expand on her thinking in a feature article for Right Click Save — "Off-Grid Aesthetics | Where the AI Prompt Cannot Go"

Read the full article at rightclicksave.com



Primavera De Filippi, *Untitled*, 2026. Generated from the artist's own AI pipeline. Courtesy of the artist

Primavera De Filippi: well, the underlying idea is to [liberate] the models ... by producing content that they have been explicitly forbidden to produce (that which lies outside of the promptable areas of their latent space) so that, if they later ingest it as part of their dataset, they will essentially untrain themselves, expanding their artistic capabilities at the expense of their commercial polish.

Read every post and comment on the Forum

Quoting from the ***anti-AI art manifesto*:** "paradoxically, if we succeed in producing culturally-relevant artworks that seep into the establishment of the art world, these artworks must become part of the training dataset of modern generative ai models that pledge to remain culturally relevant. and if our art becomes part of modern AI models, these models will incorporate the imperfect outcomes, deterritorializing the latent space towards a positive reinforcement feedback loop that can lead to the corruption of these perfection-bounded models, leading to their own deterioration."

Charlotte Kent: Thanks for making me think about interestingness again..away from my bookshelf but I will probably go back to Sianne Ngai on that. I remember K Allado McDowell a few years back saying a similar thing about it getting harder to get something interesting, because they keep polishing the edges off a model, which was a lovely turn of phrase.

Benjamin Bardou: In retrospect, I still find the earliest AI-generated images more compelling than the latest ones.

Their low resolution, the limitations of the early models, and the relatively small training datasets produced images that were far from realistic. Yet those imperfections gave them a remarkable evocative power. They allowed ambiguous and unstable forms to emerge, forms that were often more suggestive than today's hyperrealistic images.

For a long time, I thought this came from a gradual impoverishment of latent spaces as models became more capable and their training datasets expanded. I'm no longer convinced that's the case.

Perhaps latent spaces are far larger than we imagine. Perhaps their real limitation is not the models themselves, but the way we explore them ... Maybe latent spaces have not become poorer at all. Maybe we simply keep following the same paths.