AI X ANIMATION

FOREWORD

Welcome :) This report is our way of synthesising and sharing with the wider world our observations, resources, outcomes, and learnings from the ‹STORY&CODE› program.

In 2023, Generative Media was everywhere. OpenAI's DALL-E 2 and Midjourney offered images in any style a user could describe. Stable Diffusion and open source models gave tinkerers more control, with community built tools that took storytelling in new directions. ChatGPT offered up an interactive partner for solving problems and storytelling.
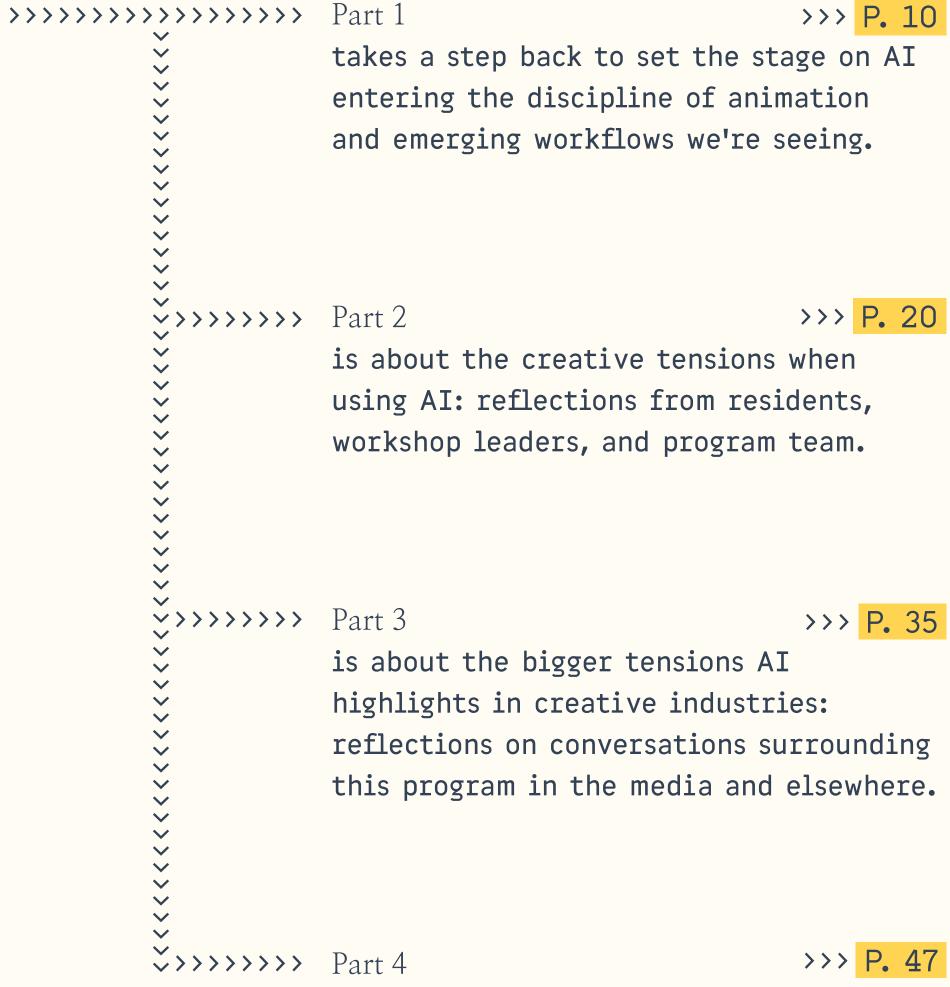
The initial gravity-defying stunt of automated image generation soon landed back on earth with a heavy thud. The tools were powerful enough that fears emerged over their use in replacing visual artists and storytellers.

This is where the ‹STORY&CODE› program began. We wanted to know how artists, animators, and storytellers could use these tools.

This report looks at AI through the lens of tensions: not conflict per se, but as a series of balancing acts. By naming these tensions, we hope to encourage thoughtful approaches that weave their way through these tensions, rather than land on one or the other.

This experiment aimed to discover new workflows and tools, but with a critical eye. This report isn't a hyped up guide to mind-blowing new technologies, though we recognize when there is room for optimism. It also isn't a scolding rejection of AI technologies.

Instead, we hope it provides grounded and honest insights useful to curious but skeptical artists.

INDEX

ABOUT ‹STORY&CODE›

‹STORY&CODE› is a collaborative research-by-making program and artist residency exploring AI in animation specifically, and filmmaking and storytelling at large.

AIxDESIGN partnered with Sublab, the R&D of Submarine Channel - a film and animation production house, to move past the buzz and explore AI's creative potential & challenges which resulted in launching this program.

We invited 12 artists, each with a background in either creative technology or film, to experiment with the use of AI tools in their creative practice and to reflect critically on the impact on their output and process as storytellers and makers.

As program organisers, we wanted to practice a mode of 'critical engagement', hold space for honesty and not knowing, facilitate individual and collective sense-making, and question how to continue situating ourselves and our practices as creatives within an rapidly-changing landscape.

While this program's focus was on AI in animation - we feel the questions asked and lessons learned in this program ring true more broadly for AI in relation to other creative disciplines.

>>> AIXD ON WEBSITE / INSTAGRAM / LINKEDIN
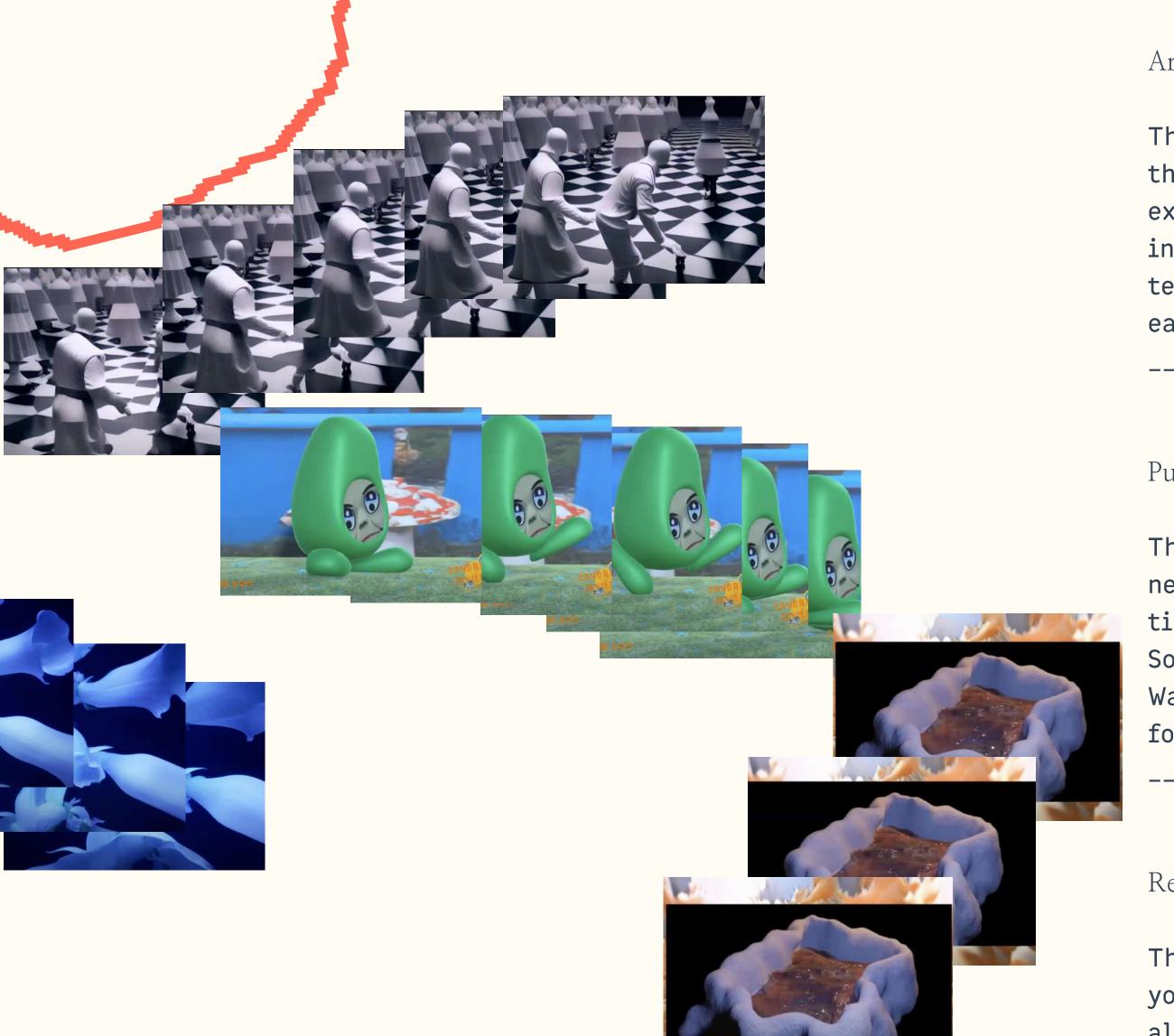
>>> SUBLAB ON WEBSITE / INSTAGRAM / LINKEDIN

>>> ORIGINAL PROGRAM ANNOUNCEMENT

>>> WATCH RESIDENTS SPEAK ABOUT THEIR INTENTIONS AT THE START OF THE RESIDENCY

ABOUT <STORY&CODE> =============== WHAT WE DID

Artist residency

The **12** artists-in-residence went through many rounds of experimentation, ultimately resulting in the production of 6 AI animation teasers created in collaboration with each other and AI tools.

>>> SEE THE ARTIST PROJECTS

>>> STAY IN THE LOOP FOR UPCOMING SCREENINGS

Public event program

The **4** input sessions we hosted, with new media artist talks and hands-on tinkering workshops by Erik Peters, Soyun Park, Fabian Mosele, Amritha Warrier, were recorded and available for anyone to (re-)watch.

>>> AIXD ON YOUTUBE

>>> MORE ABOUT THE SESSIONS

Research stream

The research culminates in the report you're now reading, and learnings we'll all bring into future work.

AIxAnimation _ AIxDesign & Sublab _ Story&Code

COLOPHON & CREDITS

Program Lead
Nadia Piet

Learning Experience + Host
Eryk Salvaggio

Sublab Coordinator
Morris Rohof

Residency _____

Storytellers
Connie He   +
Guido Duijn   +
Cody Gallo   +
Nick Cremers   +
Vilja Achte   +
Stein Louise   +

Creative Technologists
Maria Than   +
Cailean Finn   +
Chloé Michel   +
(Diarmuid Farrell)   +
Leda Sadotti   +
Ioana Mischie   +

Mentors
Marc Veerkamp
Marlyn Spaaij
Bobby de Groot
Rachel Brennan
Alex Dowding
Wip Vernooij

Speakers
Erik Peters
Soyun Park
Fabian Mosele
Amritha Warrier

Report _____

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Special Thanks to
Fabian Mosele, Amritha Warrier,
Swarna Manjari, Julie Ditetova,
Mathilde Zamour for contributing to
<STORY&CODE> along the way <3

Here for a good time not a long time? Fair enough. Here are some anecdotal take-aways in the spoken words of residents, mentors, and the team about how they will (not) look to work with AI moving forward.

" USE AI TO IMAGINE PAST / PRESENT / FUTURES THAT WE HAVEN'T SEEN OR HEARD ENOUGH OF "

" TELL HUMAN STORIES FIRST "

don't chase automation, rather find the storytelling that best suits you

" EMBRACE THE UNIQUE AFFORDANCES AND NEW POSSIBILITIES OF THE MEDIUM "

Lean into abstraction instead of chasing realism

>>>

"HONOUR THE VALUE OF CREATIVE LABOR"

resist the pressure of creating more for less

"ACKNOWLEDGE THE BIASES, ETHICS, LIMITATIONS OF THE TOOL"

"ONLY USE OTHER ARTIST NAMES IN PROMPTS IF THEY'RE NO LONGER PAYING RENT"

"CREDIT GENEROUSLY"

Be transparent about your tools, prompts, and value chain. Share your references, inspirations, open-source code.

// PART 1:
// ANIMATING
// WITH AI

Before we talk about ‹STORY&CODE›,
let's contextualise the program within
this technical and culture moment.

There isn't just one way of working with
AI in animation or film. We are already
seeing people inventing, hacking, and
stitching together all sorts of AI-
assisted approaches, tools, and inputs to
create their work. In this chapter, we
analyse emerging AI workflows and the
projects they've created.

Let's look at what's been happening in
AI and animation so far.

A BRIEF HISTORY

A brief history of AI in animation

EMERGING WORKFLOWS

Augmented Storytelling
Text-to-image
Video-to-video
Text-to-video
Image-to-video
Overview

NEW FORMS OF STORYTELLING

AI gives rise to new forms of storytelling

A BRIEF HISTORY

When did animators and filmmakers start using AI? While the technology has developed incredibly quickly, it didn't happen overnight.

>>>
HYSTERESIS BY ROBERT SEIDEL

2021
VQGAN+CLIP models to create generative moving images.

September 2023 / We are here now
At the time of writing (September 2023) we anticipate the featured projects & tools to be outdated shortly, but believe the thinking & questions we put forth to remain their relevance.

2020
People begin experimenting with StyleGANs and Latent Space Interpolation for video creation.

>>>
LESSONS FROM MY NIGHTMARES BY KIRA BURSKY

2022
On the back of Midjourney, people create cinematic animated shorts by sequencing frames, at times mixing 3d composites.

>>>
THE TALK IN TOWN BY KAREL

2023
It's really happening! Runway drops GEN-1 and GEN-2 with friendly user interfaces bringing generative video to the masses.

>>>
LIVING VINYLS BY STABLE REEL

EMERGING WORKFLOW: AUGMENTED STORYTELLING

Augmented storytelling refers to the use AI-driven tools to help create stories, characters, and settings. For instance, text-generating models can assist with coming up with ideas, co-writing scripts, and exploring different story possibilities. Meanwhile, image-generating models can help bring our ideas to life quickly by creating storyboards or showing us different routes or options for character designs.

These AI tools can help us:

> get unstuck and make confident choices in our creative process;

> push our creative boundaries by presenting ideas we may not have considered on our own. This can be especially helpful during creative exploration when we explore possible routes, endings, or plot twists; and

> craft persuasive communication — like a pitch — to get your story produced, distributed, or seen by others.

>>> LITTLE MARTIANS
BY VANESSA ROSA

A sci-fi tale about humans who mutate to adapt to a changing environment expressed through handmade ceramics, scanned through photogrammetry and animated using AI.

STACK:
PHOTOGRAMMETRY, GAN 2

EMERGING WORKFLOW: TEXT-TO-IMAGE

A text-to-image model takes a text input — also referred to as a prompt — and produces an image matching that description.

We've seen films use text-to-image generators like Midjourney and Dall-E to create animated montages with a stop-motion effect.
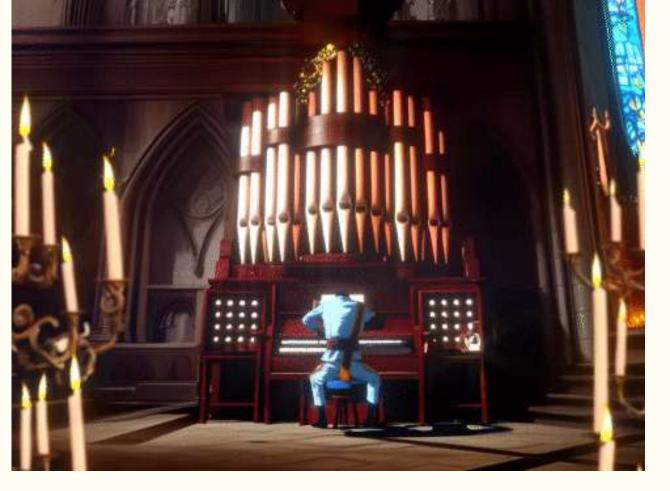

>>> /IMAGINE BY ANNA APTER

This short has been praised for its direction and criticism, winning many awards and showcasing the triumph of AI aided storytelling for independent filmmakers.

STACK:
MIDJOURNEY

>>> READ MORE

EMERGING WORKFLOW: VIDEO-TO-VIDEO

A video-to-video model combines a video input with other reference material to produce a new video. There are various ways to video-to-video models can be used:

> NEURAL STYLE TRANSFERS - these algorithms can help you take the style of one image and apply it to the content of your input video, rendering your input video into a different aesthetic.

> DIFFUSED FRAMES - this feature allows storytellers to input text or image prompts and define how much they would like the algorithm to adjust the input video based on that prompt. Things can get weirder if the storyteller does not define a change prompt and allow the algorithm to change the input video based on the model own 'uncontrolled hallucinations'.

> VIDEO INPAINTING - these tools help us mask or replace a elements within a video composition for something else.

>>> CUBIST SIMPSONS
BY PAUL TRILLO

Using Runway GEN-1, creator Paul Trillo reimagines the Simpsons intro in experimental cubist stop-motion style.

STACK:
RUNWAY GEN-1

>>> ANIME ROCK PAPER SCISSORS
BY CORRIDOR DIGITAL

This VFX studio stirred conversation with this video which was pre-recorded in live action format and transferred into an anime aesthetic.

STACK:
STABLE DIFFUSION, DREAMBOOTH, DAVINCI RESOLVE
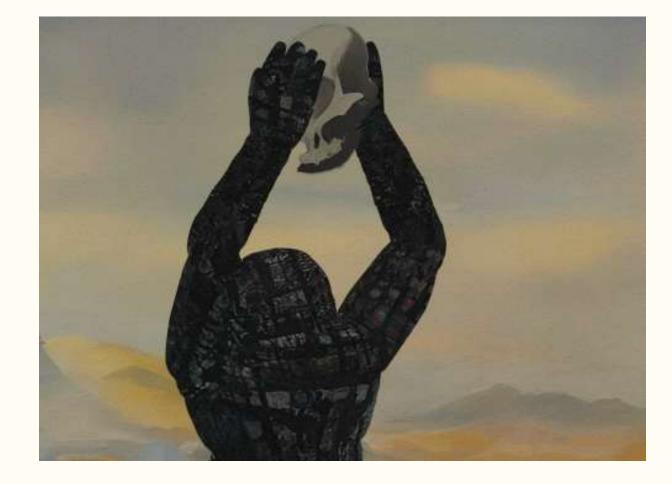
EMERGING WORKFLOW: TEXT-TO-VIDEO

As of writing in September 2023, tools like ZeroScope or GEN-2 are able to output ± 5 seconds of moving images from a text prompt. These ± 5 second clips can then be manipulated, stitched together, and edited with soundscapes or voice-overs to craft a film.

>>> DO THE EVOLUTION
BY RICARDO VILLAVICENCIO

The second part of an animated trilogy that explores the concept of Posthumanism. Through a nonlinear narrative style and surreal visuals, the artist represents the intriguing relationship between humans and technology.

STACK:
RUNWAY GEN-2
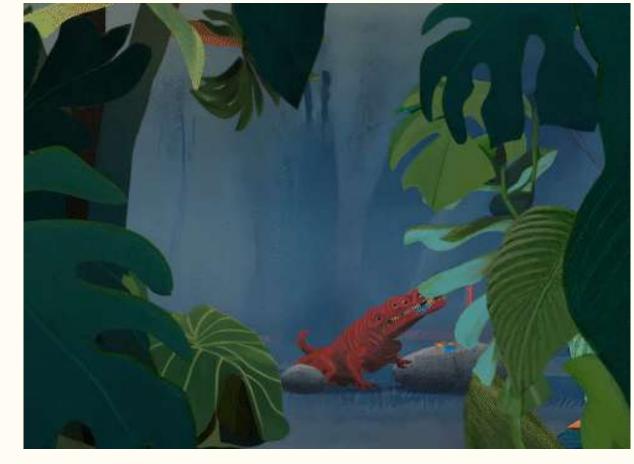
EMERGING WORKFLOWS: IMAGE-TO-VIDEO

Recent tech advancements enable tools
such as Runway's GEN-2 that can
automatically animate and bring motion
into still / static images.

>>> THANK YOU FOR NOT ANSWERING
BY PAUL TRILLO

A film exploring adult loneliness with an
accompanying melancholic voiceover and
surreal scenes. Still images were
generated with Stable Diffusion through
text prompts describing the scenes. The
images were fed into Runway's Gen-2 with
additional text prompts describing
camera movements to create moving
visuals, then selected, sequenced, and
completed with a voice-over.

STACK:
STABLE DIFFUSION, RUNWAY GEN-2

OVERVIEW: EMERGING WORKFLOWS

Output	Text	Image	Video	Sound
Input **Text**	///////////////////////////// AUGMENTED STORYTELLING / STORYMAKING /////////////////////////////////	/// (TEXT-TO-) IMAGE SEQUENCING /// ///////// GENERATING ASSETS ///////// TO MANUALLY COMPOSITE	////////// TEXT-TO-VIDEO //////////	/// GENERATED /// SOUNDSCAPES /// SYNTHETIC /// VOICES
Image			////////// IMAGE-TO-VIDEO //////////	
Video			////////// VIDEO-TO-VIDEO ////////// › DIFFUSE › STYLE-TRANSFER › RENDER ON TOP OF VIDEO	
Sound	///////////////////////////////////// USER INTERACTIVE GENERATIVE INTERFACES /////////////////////////////////////			

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

NEW FORMS OF STORYTELLING

While these new workflows are exciting, we are most excited to explore how AI can create wholly new ways to tell and consume stories.

Film is traditionally a passive medium for the viewer. You sit and let it wash over you the way its director intended. But with AI, we can create interactive generative films where the storyteller and audience become co-creators; shaping the story in real-time.

What new forms of storytelling is AI giving rise to?

> INFINITE CINEMA
Using generative AI, we can generate an infinite numbers of frames in real-time like Fabian did for their Mo & Laa show; producing and streaming stories of which only the parameters have been decided, and runs itself.

We also seen this approach in 'Nothing, Forever' - an endlessly generative Seinfeld episode - and AI_Sponge - doing the same with Spongebob. The latter has an interesting interactive element where chat messages from viewers are incorporated into the storyline in real-time.

>>>

THE MO & LAA SHOW BY
FABIAN MOSELE

NEW FORMS OF STORYTELLING

> INTERACTIVE STORYTELLING

By bringing AI into storytelling experience, new interactions can take shape. Generative tools can create interactive experiences between audience and storyteller, inviting and viewer input to steer, modify and personalise the story along the way, opening up for new ways of collaborative story-making and inviting the viewer as a maker.

Perhaps the story talks to you and you talk back like in the House of Saturn trailer. In the case of The Zizi Show, you can mix and match characters, motion, and storylines - resulting in a slightly different experience for every individual viewer. A variation of this can be seen in live performance, like in the God Mode project by DMSTFCTN, where the audience shapes the story alongside the artist, resulting in each performance to evolve differently.

>>> THE ZIZI SHOW
BY JAKE ELWES

>>> GOD MODE (EP.1)
BY DMSTFCTN

>>> READ ABOUT AI_SPONGE

// PART 2:
// CREATIVE
// TENSIONS

Generative AI is a space filled with friction. We believe this friction can serve as a catalyst for creativity and innovation, and so we offer the following five tensions observed amongst the makers and thinkers of this program.

Each represents a tension identified across 6 months of conversation with and between the residents, workshop leaders, and program team.

Each offers a lens for sense-making, discussing, and understanding how creatives might navigate their practice in process.

Curiosity _____ x _____ **Resistance**   >>> P. 21

How can we explore our creativity curiosity while staying mindful of ethical concerns and fears?

Possibility _____ x _____ **Focus**   >>> P. 24

With endless imagery at our fingertips, how does AI help or hinder ideation?

Control _____ x _____ **Openness**   >>> P. 26

How can we find the right balance between the stories we want to tell, and the stories AI can tell "for" us?

Story _____ x _____ **Code**   >>> P. 28

How can embrace the unique possibilities and limitations of AI as we bring our stories to life?

Hype _____ x _____ **Hate**   >>> P. 32

What might better conversations about generative AI in storytelling look like?

CURIOSITY X RESISTANCE

This initial tension was the very catalyst of this program. The teams at Sublab and AIxDESIGN were interested to explore the creative opportunities afforded by AI tools. On the other hand, there were reasons for concern, including:

> IP & copyright concerns
> Data bias
> Threat of creative worker's rights
> Commodification of creativity

In a workshop led by Fabian Mosele, residents were introduced to a novel way of addressing copyright. While making the film 'Reflection of a reflection of a reflection,' Fabian trained a custom generative model to create story characters, then asked friends to re-draw those characters in many styles. With consent, all of these drawings were combined into a new dataset. The subsequent model was used to morph Fabian's original drawings - creating a unique collaborative process for animating characters.

>>> FABIAN ON INSTAGRAM

"It's a more ethical way to collect data, because the people who created the data gave consent for it to be part of the training. You could still argue with that, because they were my friends and I didn't pay them. And it built on Stable Diffusion, which was trained on lots of other data, but there's not that much of that in [this]. A whole lot of ethics is needed in generative media."

FABIAN MOSELE ON CREATING THEIR OWN DATASET

>>> LISTEN HERE

>>> MORE ABOUT THE WORKSHOP

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

CURIOSITY

X

RESISTANCE

Soyun Park hosted a hands-on workshop exploring the vast possibilities of AI and expanding the suite of tools we might consider when thinking about storytelling.

Soyun has made use of generative music and images in her work, but also unexpected tools such as maps. Soyun's work plays with what emerges in converting video to video, images into stuffed animals, and working with original images.

It's a worthy reminder that working with digital tools doesn't have to start or end with AI.

>>>>>>>>>>>> SOYUN ON INSTAGRAM

>>> MORE ABOUT
THE WORKSHOP

Do it yourself!

>>> ACCESS THE SLIDES
FROM THE WORKSHOP

>>> ORIGINAL DEFORUM
NOTEBOOK

>>> EASY UI

>>> EASY DIFFUSION

>>> GEN 2 RUNWAY

CURIOSITY

X

RESISTANCE

One way of addressing questions about using AI in storytelling is to tell stories about AI itself, stories that probe our relationships with the technology.

Cody Gallo & Chloé Michel's created a teaser for their interactive project, **House of Saturn**, in which visitors can 'speak' with a AI voice interface that produces a series of increasingly surreal questions and imagery.

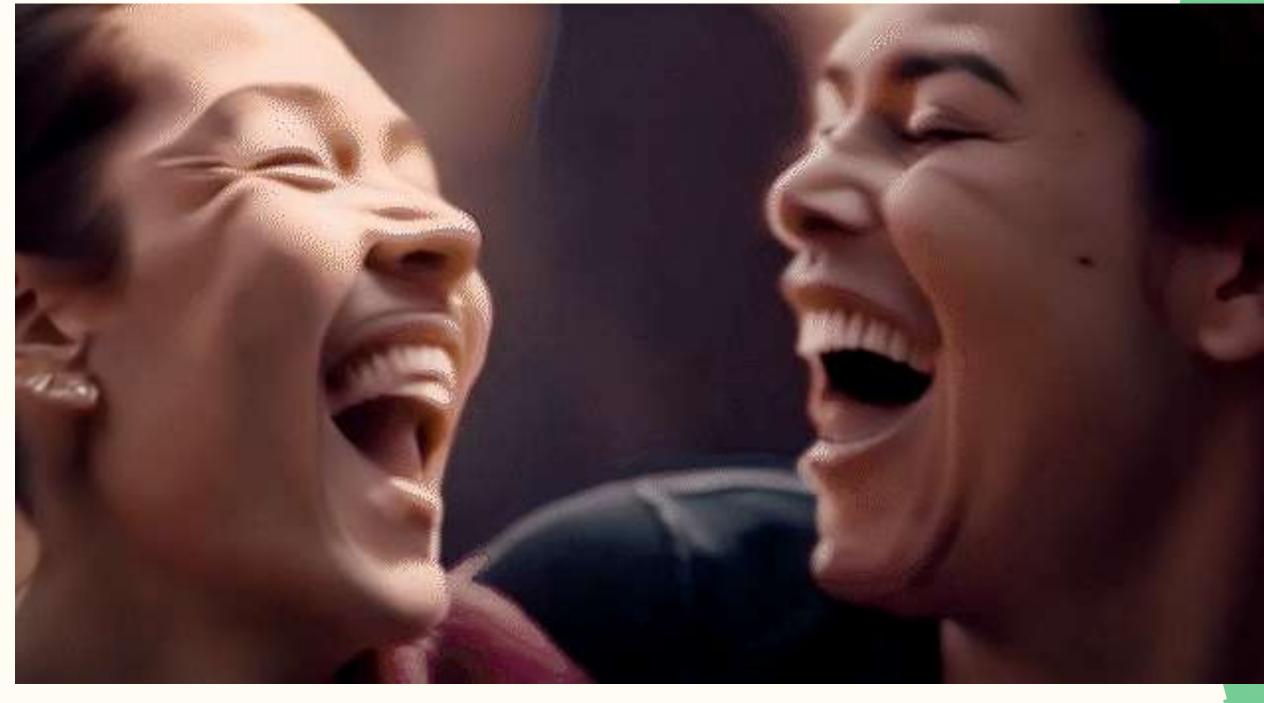House of Saturn is notable because not only does it use AI-generative imagery, but also uses AI to create an interactive experience.
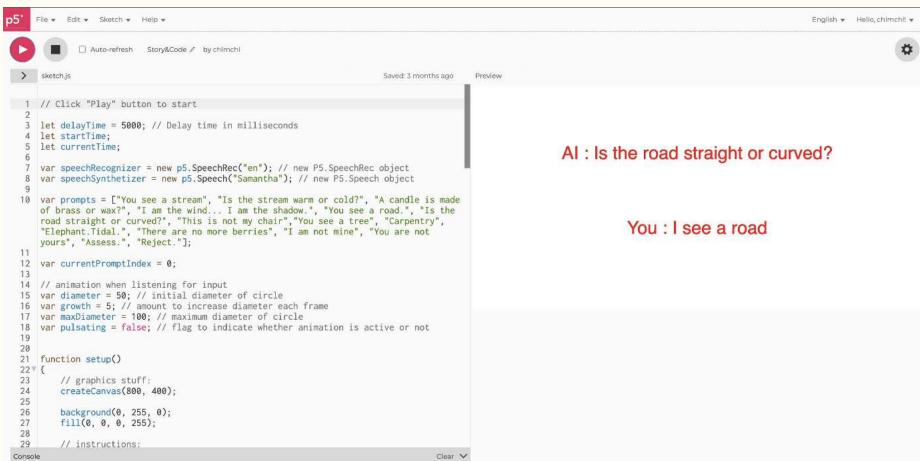

>>> MORE ABOUT THE PROJECT

>>> READ MORE ON NEW STORY FORMATS

Illustration _ AIxDesign & Sublab _ <Story&Code>

POSSIBILITY X FOCUS

The creative process is a messy one. Bringing a vision to life takes time and effort. When something isn't right, parts get erased, re-made. Each iteration serves as an opportunity to make a creative discovery about the character, environment, or storyline.

Working with AI adds unpredictability to an already messy creative process.

Generative AI can create hundreds of images or lines of script while you sleep. While this can be useful in ideation, it can also serve as a distraction when storytelling.

With AI, images appear in near-finished form and they must be wholly chosen or rejected. Each image invites the storyteller to consider a parallel universe the story could live within. Sometimes this is divergent thinking is welcome, other times — not so much.

Some of our residents went down AI-generated rabbit holes, adopting elements of the stories they found in

images produced by AI. Others found that AI-generated content distracted them from telling the stories they wanted to tell. This drove some resident to handcraft more detailed storyboards and even whole scenes so that they could stay true to their original vision.

Finding the sweet spot between possibility and control is a decision for the each storyteller. One should work with AI in ways that support (rather than break) one's craft, artistic integrity, and creative process.

AI is its own creative material and as with any: we must learn how to knead it into our desired shape.

>>> CREATIVE GRATIFICATION

>>> IMAGE BY ERIK PETERS

POSSIBILITY X FOCUS

In a workshop with Erik Peters, we explored this tension. Erik presented the ways they think about storytelling and world-building, centering the artists' intent while using generative AI to imagine new details or uncover new questions.

>>>>>>>>>>> ERIK
ON INSTAGRAM

Do it yourself!

>>> MORE ABOUT THE WORKSHOP

>>> GRAB THE WORKSHEETS
FROM THE WORKSHOP

"It's good to have a lot of material. [When we started] we had a compartmentalized view of limited options from AI. But there are actually a range of possibilities."
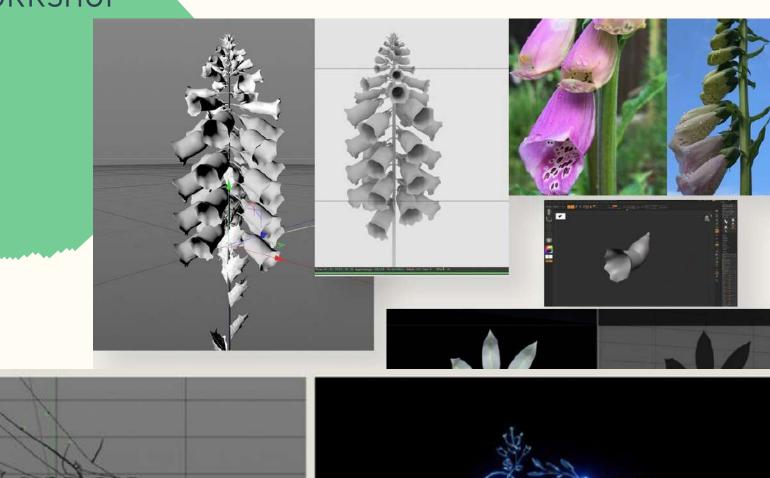
VILJA ACHTÉ ON THE PROCESS OF
CREATING GARDEN OF DIGITAL(IS)

>>> MORE ABOUT
THE PROJECT

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

CONTROL X OPENNESS

For the film **Lorna,** Nick Cremers flexed his creative control, using a combination of traditional VFX and AI to tell his story. Nick filmed himself as the protagonist later replacing his face with the characters' using AI. "I chose to work with a human actor for the voiceover because I couldn't get the same chilling effects with synthetic voice options available," Nick said.

Nick used happy accidents offered by his AI tools including scenes generated from GEN2. But these algorithmically-generated scenes required more work than expected to integrate them into the final trailer. Nick also found himself making difficult editing decisions, rejecting creatively strong algorithmically-generated scenes that didn't align with the story as a whole.

>>> MORE ABOUT
THE PROJECT
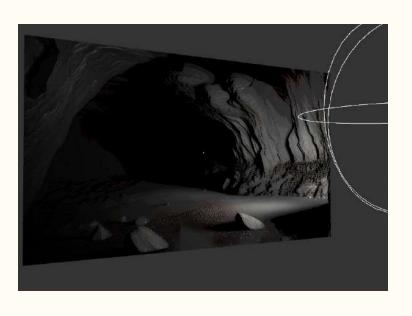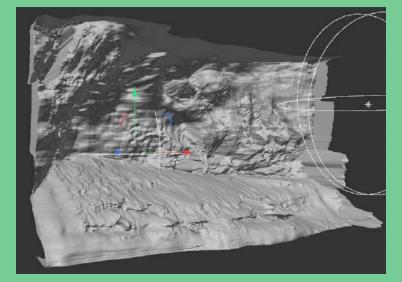
"Make room for happy accidents, but focus and stay practical in your structure."

NICK CREMERS ABOUT
CREATING LORNA

>>> PROMPT
ENGINEERING
/ INPUTS AND
PARAMETERS

>>> STEERING AI
MODELS

CONTROL

X

OPENNESS

Residents Stein Louise & Ioana Mischie approached their work with a more flexible creative vision. Creating many scenes through Stable Diffusion and GEN 2, they selected imagery that fit within a pre-defined concept; they wanted to create an interactive experience in which the viewer can become a prophet for an ancient civilization.
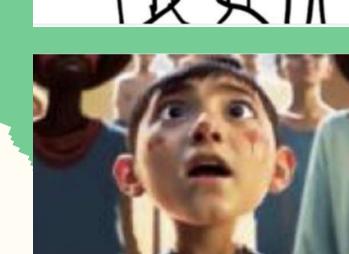
After generating loads of imagery, they chose the most expressive shots that helped tell this story.

"We may have been over–open at first," said Ioana. "We could have been more active and more attentive to details."

>>> MORE ABOUT THE PROJECT

STORY   X   CODE

What exactly do we mean by "happy accidents"? "Happy Accidents" can be a result of seeing something unexpected come back from your image prompt, or it can be the result of finding a unique symbolism or storytelling device in the algorithmic glitches, the pops and crackles that might otherwise be overlooked.

This is the tension between story and code: what story do you want to tell, and how do you adapt it to the limits of the medium, especially an emerging and experimental medium like AI?

One of the most interesting conversations about this phenomenon came about in discussion **Hardwired**, the trailer from Guido Duijn & Cailean Finn.
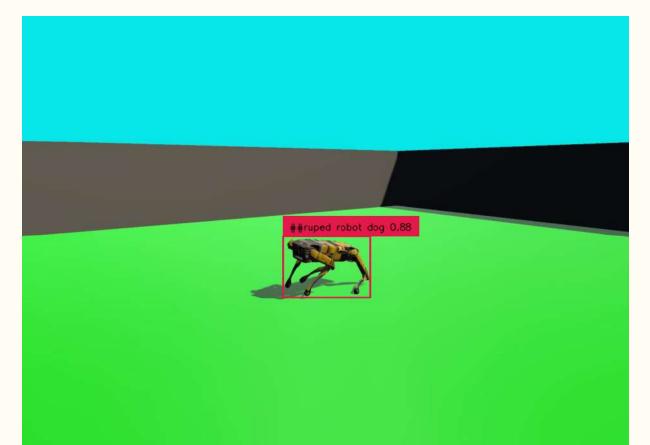
The pair made a series of drawings by hand that were loaded into Stable Diffusion and then animated. Meanwhile, a 3D rendered robot was crafted in Unity, giving the two elements a distinctive look.

One of the artifacts of animating in this way is that the images tended to flicker, as each frame of the animation was crafted from scratch by the AI.

This flickering was seen by many as a challenge — leading some to abandon this workflow altogether. But for Guido and Cailean, it created a point of connection between the robot and the dog, setting them apart from the more stable desert landscape.

In this way, leaning into the 'limits' of the technology made an interesting way to visualize a story.

>>> MORE ABOUT THE PROJECT

>>> MORE ABOUT GLITCHES / LIMITATIONS

" PULLING THE LEVERS, PLAYING AT THE EDGE, SUBVERTING THE DEFAULTS AND EMBRACING THE GLITCH "

NADIA ON ATTITUDES TO WORKING WITH GENERATIVE AI MODELS

STORY

X

CODE

Other groups steered away from these limits, and found new workflows that still shaped the stories they told. One clever example of this is a quick shot found in Connie He and Maria Than's **Dear Upstairs Neighbor.**

With a clear storyboard and hand-rendered animations included from the outset, some of the limits of generative animation inspired moments of creativity in this trailer. Much of the animation was done directly in photoshop, offering a very specific, frame-by-frame control over the production and effects.

The film makes clever use of stock effects in Photoshop to bring liveliness to still images, bringing in tricks from more traditional animation. Zoom and pan effects make still images move. Animating small splashes of detail in otherwise still images make them pop.

A sequenced blur brings the effect of heavy bass into a visual experience. Every shot shows an attention to detail that didn't stop with the image, but made the image a starting point for a creative process. Instead of the image stopping us, it invites us to ask where it could go next.

>>> MORE ABOUT THE PROJECT

STORY

X

CODE
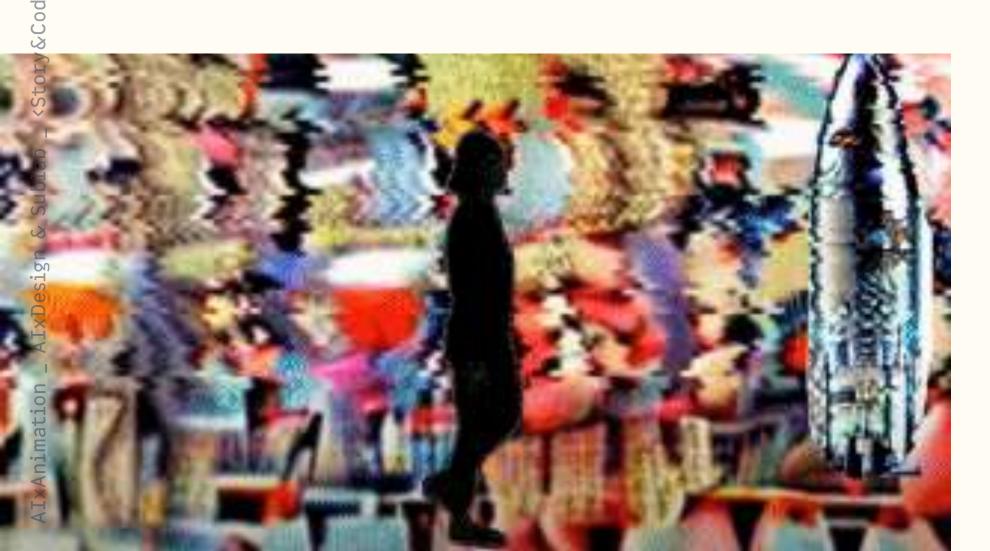
Story x Code can be seen as the struggle between the vision of your story and the realities of crafting that story. One of the best introductions to an advanced workflow came from our final public workshop.
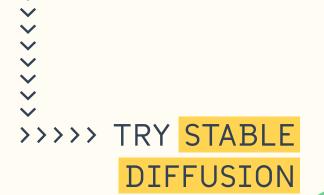
We invited Amritha Warrier, an Indian animator and a huge fan of mixed media art. A practitioner who blurs the boundaries between 2D, 3D and AI to make animation look seamless, she introduced us to hack-y workflows using a diverse set of tools to help us craft our own unique animation styles.

>>>>>>>>>>> AMRITHA ON INSTAGRAM

>>> MORE ABOUT THE WORKSHOP

Do it yourself!

>>>>> TRY STABLE DIFFUSION

>>> VIDEO MANIPULATION WITH RUNWAY ML

>>> ACCESS THE SLIDES FROM THE WORKSHOP

HYPE   X   HATE

What might better conversations about AI look like?

Creators experimenting with AI have been targeted on social media. We even have noticed in ourselves and the <S&C> residents a reluctance to share AI-generated work.

On social media, many artists have completely avoided it, others feel FOMO, and still more churn out AI generated imagery consistently, with little thought, or even build tools that deliberately antagonize working artists — such as training image sets focused on specific artists' works, and generating endless knock-offs.

The only way we'll move forward on a better future for generative AI is through broad engagement from everyone it touches: from the artists inspired to make something with these tools, to the artists who see their work absorbed by datasets.

In a polarizing landscape, we must be careful not to get locked into the false binary thinking trap of naive optimism (utopian) nor nihilistic dismissal (dystopian) that seems so prevalent in the creative AI space atm. Instead, we want to opt for a critical engagement (protopian) that increasingly asks better questions and brings forth better approaches.

>>> MORE ON (NON-)CONSENSUAL TRAINING DATA

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

Resist dismissing the debate

It's important to acknowledge and address the fears and excitement around generative AI. by thinking through what the tools actually do, how they are used, and where we can minimize harms while allowing experiments. It is possible for a tool to exploit one artist while being inspirational to another. It's crucial that we listen to each other, and work together to demand tools that aim to eliminate harm.

Ask better questions. Be honest about the questions we have

Striving for more scoped, nuanced, and generative questions instead of rushing to shallow answers or opinions to settle the discomfort of change. This means collectively listening, reflecting, sense-making, and advocating for those harmed. It might mean challenging the makers of tools you love to be better.

Exploring how to think and talk about AI in less polarizing terms, here are some of the dispositions that felt meaningful to us throughout the residency, the research, and writing this report. It's a useful framework for thoughtful navigation toward the ends we want for this technology.

>>>

Critically engage

Not every artist has to love the tools they use. Sometimes, hands-on engaging & experimenting with the material to learn about it can shape your point of view about how it can be made more ethically.

Allow space for excitement & anxieties

Focus less on technological developments and headlines about promised futures, but gazing inward to how we experience and define creativity, and how we situate ourselves amid mixed feelings. What do we collectively want?

Imagine alternatives

Because what's even more powerful as critiquing what you don't want, is imagining, experimenting, and creating what you do.

// PART 3:
// INDUSTRY
// SHIFTS

In Part 2 we reviewed the tensions
raised by residents, workshop leaders,
and the program team as they
experimented with AI in their
storytelling.

In Part 3, we zoom out to look at the
macro trends surrounding generative AI.
As before, these frictions are not to be
taken as binaries, but as values placed
into conflict. The path forward likely
lies not in choosing one over the other,
but in choosing a way forward that is
mindful of each extreme.

Democratization _____ **x** _____ **Craft**   >>> P. 36

If anyone can make a beautiful image, how does an artist
stand apart?

Commodification _____ **x** _____ **Value**   >>> P. 37

How does AI shift the ways we view commodity, labor, and
value of creative work?

Realism _____ **x** _____ **Data Surrealism**   >>> P. 38

AI images learn from countless other images, but it can't
"contextualise" itself within that world. How will we use these
tools responsibly?

Process _____ **x** _____ **Output**   >>> P. 40

What does "animation" mean, anyway?

Remixing _____ **x** _____ **Newness**   >>> P. 43

What can AI do that other technologies can't?
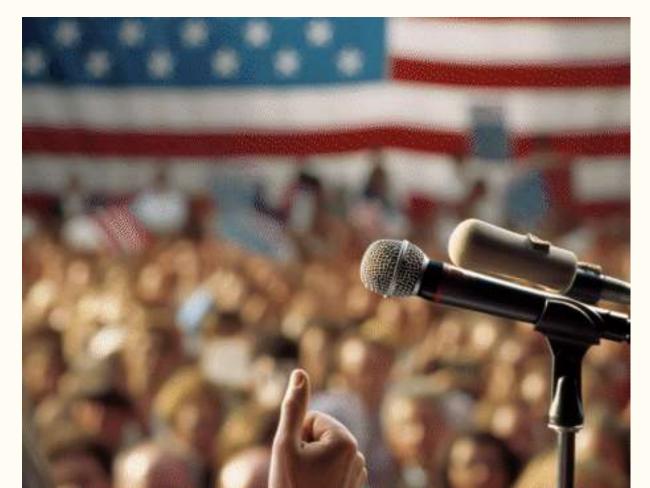
DEMOCRATIZATION X CRAFT

Anyone can be an animator. Now what?
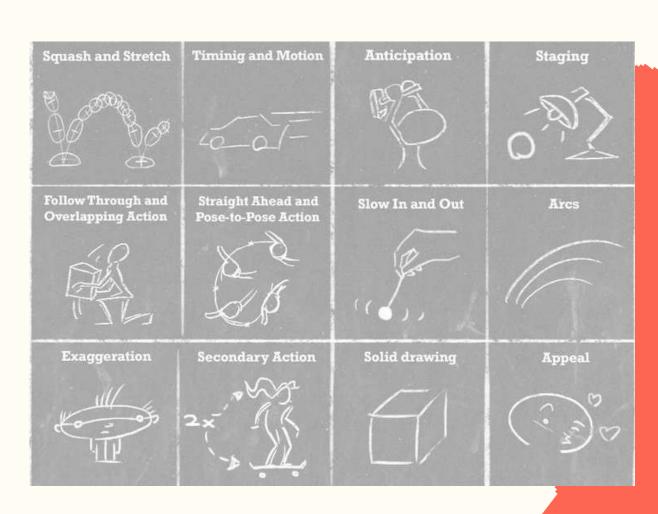
While ‹STORY&CODE› focused on creatives with an existing animation practice, we also want to acknowledge what AI means for non-animators. With these generative AI tools, anyone — regardless of training or aptitude — can now create 'animations.' Let's not get it twisted. There are plenty positives to this.

> The lower learning curve lowers the barrier for outsiders with interesting ideas. Without knowing 'best practices', outsiders are free to come up with novel approaches that trained animators wouldn't have considered.

> We can hear stories and perspectives that for a multitude of reasons have been historically silenced.

> Creatives who aren't confident 'sketchers' can create strong visuals to for their vision, helping them to convey early ideas to others.

Eryk Salvaggio's short film, **Sarah Palin Forever,** is a case in point. Created with zero budget in a home office — but built on a strong original story — the film was picked up for the RAIN AI film festival and was shown at the Centre de Cultura Contemporània de Barcelona.

For every success story with AI, however, there are countless others who can make brilliant images but find scant audience for them. While democratization guarantees that anyone can make strong images, it doesn't guarantee an audience.

As AI tools continue to develop, the barrier to storytelling is likely to be near zero. But to stand out, generative artists will still need to rely on creative thinking, powerful and emotional narratives, and a creative elevation of whatever the AI can do for everyone else.

>>> INTERVIEW WITH ERYK

>>> WHAT SYNTHETIC MEDIA IS GOOD FOR

>>> WATCH THE FILM SARAH PALIN FOREVER

COMMODIFICATION X

VALUE

Time and effort define craft. AI reverses the dynamics by producing so much in so less time. Even if the quality of the final output may be debatable, the quantity is unmatchable. There is no point in competing with AI; but there remains a chance to redefine the value of human labour while working with AI. How can we navigate and protect creative labour, livelihoods, and commodification?

Even if it doesn't put us out of work, it may commodify work – making clients expect more for less, making creative output less valued, and creatives tired & stressed.

These new tools are also highly efficient – meaning they create in extremely little time. This dynamic skews power in favour of the companies that own these image generation models and makes artists powerless.

Creative Acts vs Creative Industries

When looking to have a constructive and generative conversation around the entanglements of creativity and AI, we've found it helpful to distinguish (just for a moment / as a thought exercise) creativity as an free act of expression from the creative industries which exists under the reigns of capitalism.
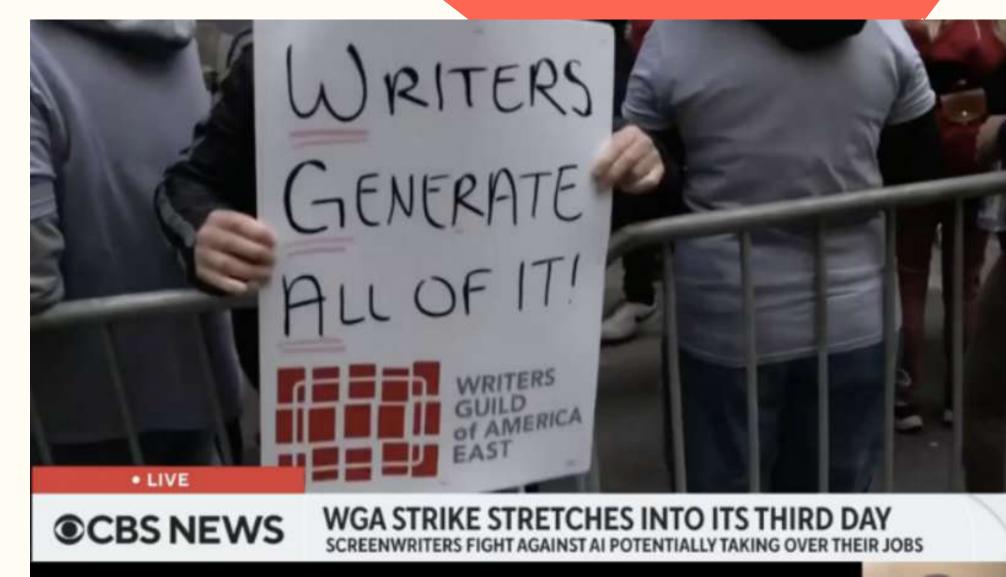
AI poses a threat - not because it it capable of spinning up creative output, but because we in turn rely on that creative output to pay our rent.

"Even if we may not lose work, clients/commissions might come to expect more for less and faster."

FABIAN MOSELE

WRITERS STRIKE ON CBS NEWS

REALISM X DATA SURREALISM

A Return to the Abstract?

It's crucial to recognize that image generation tools are built on datasets, often trained on massive troves of data created by artists and illustrators without their permission. For the creative industry, that's a big problem: how do you know if your generated character doesn't belong to someone else? At the same time, these tools learn from images and text on the web, which can collect and recirculate harmful stereotypes.
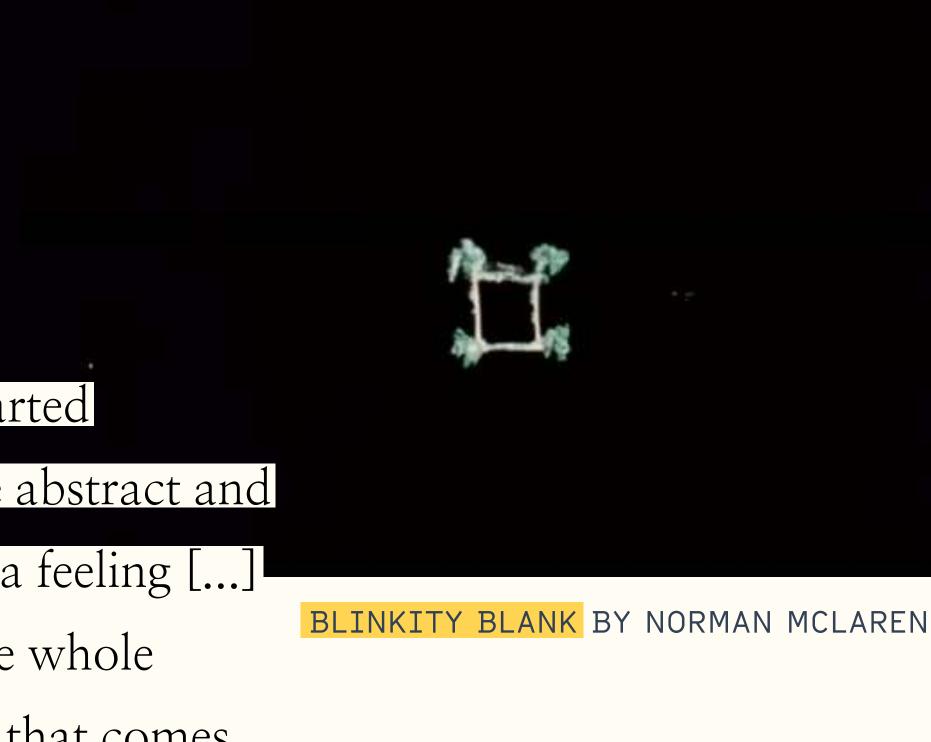
As a result, some are avoiding the technology completely. But others are steering through this tension by leaning into data surrealism: emphasizing the weirdness of AI images in ways that nobody else would, or creating abstract images that don't represent people, or other animator's specific visual identity.

In the early days of animation, a lot of the work was abstract by nature, such as in Norman McLaren's animated short Blinkity Blank (1955). Only recently has it been moving towards absolute realism - as animators try to make things accurate, down to the definition of a single hair strand.

"The way he started animation to be abstract and completely just a feeling [...] I kind of like the whole abstract output that comes out of AI as it's embracing that weird abstractness."

AMRITHA WARRIER

BLINKITY BLANK BY NORMAN MCLAREN

>>> HEAR AMRITHA TALK ABOUT
ABSTRACT ANIMATIONS + AI

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

REALISM

X

DATA SURREALISM

Little regard for realism

But because AI models at this point are still glitchy, the resulting works are often more abstract and associative. Rather than aiming for realism, it can be helpful to embrace this imperfection as a unique quality of the material. In this sense, it is a reunion of early animation and the long history of generative art.

As animation is traditionally a format rarely concerned with depicting 'the real', this makes it an exciting field to combine AI.

Animation is fantasy, which also allows animators to play more freely without the concerns around deepfakes that come with photo-realistic work.
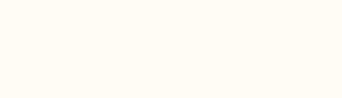
Fabian Mosele
@FabianMosele

Generative AI bears no relation to reality whatsoever.

It is the reflection of its image dataset, which in itself is a reflection of perceived reality.

#roaroar #aianimation

>>> READ ON TWITTER
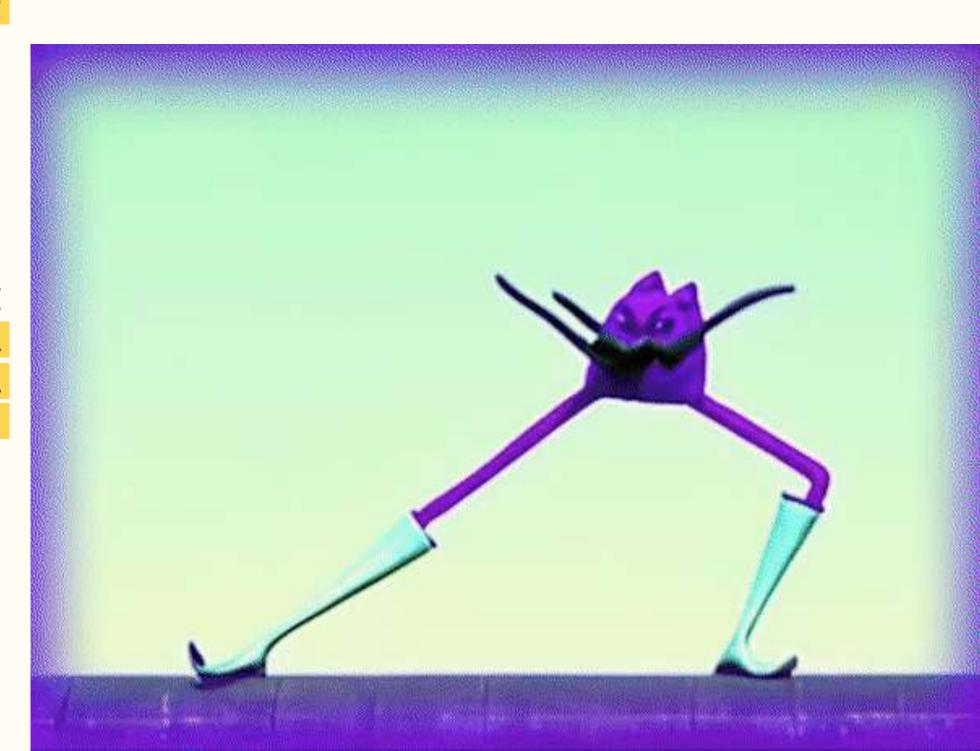
>>> WATCH FABIAN'S MOVIE
REFLECTION OF A
REFLECTION OF A
REFLECTION

PROCESS   X   OUTPUT

How do we define "animation"?

In light of AI blurring the boundaries between previously defined genres and taxonomies, what would we say defines animation? For that matter, how do we define any of the things AI can do — is artmaking, animation, and storytelling the result of a process, or the output of a process?

In other words, should we define it through its output ("animation is a story that looks like drawings") or its process ("drawing and sequencing frame-by-frame without the use of a camera")? Is it defined in the eyes of the viewer (output) or its maker (process)?

This video by Remi Molette illustrates the question. It's a recording of a dancer manipulated through AI to look like anime. It's not yet flawless, but it's a matter of months for this to improve.

To an unknowing viewer watching the video on the left, it's like any animation. To the creator, perhaps they're more likely to think of it as video manipulation and VFX. Do we consider this animation? And what do we risk to gain or lose in doing so?

>>>>>>>> REMI ON INSTAGRAM

>>> WATCH FULL ANIMATION

PROCESS   X   OUTPUT

The same could be, and is being, asked of photography. Is photography defined by the use of a camera (process), or by photorealistic visual imagery (output)?

In still imagery, people have begun speaking of 'post-photography': generated images that look like photographs, are gorgeous, but did not use a camera.

An interesting case: Boris Eldagsen won the Sony World Photography Awards with an AI-generated photograph but forfeited the prize posing important questions.
The award committee did not take it well - but we applaud Boris for asking.
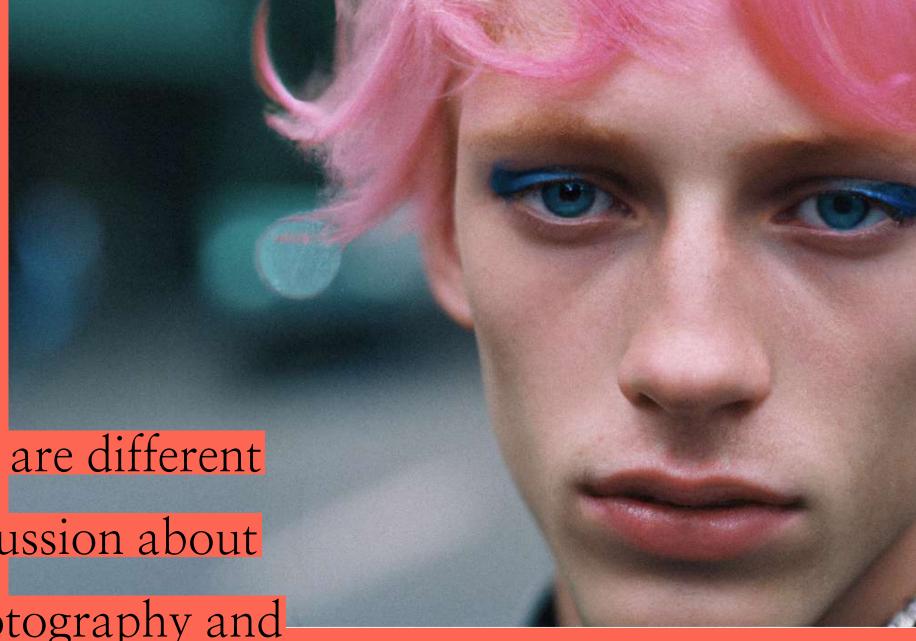
>>> READ THIS INTERVIEW BY BLAKE WOOD WITH SUPERRARE ABOUT "POST-PHOTOGRAPHY & THE POETICS OF AI"

PINK I BY BLAKE WOOD

"AI is not photography — they are different entities. We need an open discussion about what we want to consider photography and what not. Is the umbrella large enough to invite AI images to enter — or would this be a mistake?"

BORIS ELDAGSEN

>>> READ MORE ABOUT THE PRIZE AND FOREFEIT

> " SO THE POINT IS THAT WE NEVER UNDERSTAND TECH. WE ASSUME ITS ROLE IN THE SOCIETY.
>
> [...]
>
> JUST BECAUSE THEY DICTATE HOW THE TECH SHOULD BE USED OR DESIGNED, DO WE HAVE TO FOLLOW THAT? "

AMRITHA ON MOVING PAST ASSUMPTIONS AND NOT ACCEPTING THE STATUS QUO

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

REMIXING X NEWNESS

No-Camera Cinema?

AI images are often compared to the ways humans make pictures — which isn't exactly true. Humans may recombine stories and ideas in novel ways, but artists have never strived to imitate. Every new technology, from photography to television, has been pushed into unexpected directions in order to create its own unique language of expression.

When people first started to use film cameras, they didn't know how to tell stories with them. People had to try things: somebody had to take a razor blade and cut the film up and present what they'd shot out of order. Someone, somewhere, tried that to see if it worked. That's something fun about AI images at the moment. From a historical perspective: we simply don't know how to use them. In 1983 Gene Youngblood asked, what can computers do for stories that film could not do?

Today we might pose that question again, in light of generative technologies. Interpolation, for example, adds false information to existing information. In this case, it's adding fake frames to connect two real ones, and then moving on to the next. It's also a perpetual flow of information: there's no cut, like you might see in the cinema. On film, things are always separate, connected by cuts and edits and frames. With interpolation, they literally morph into one another, in an endless blending and symbiosis.

That alone tells a story very differently from isolated frames on a film strip. What else could AI do that film could not do? And how might we lean into those stories?

>>>>>>>>>>>>>>>>>>>>> READ FURTHER
IN ERYK'S NEWSLETTER

ENDLESSLY

HOUSE OF ANNETTA MUSIC VIDEO   >>> LISTEN & WATCH

>>> HAVE WE BEEN
HERE BEFORE?

PROPOSALS:
PROMPT ETIQUETTE

DERRICK'S RULES FOR PROMPT ETHICS

- Context Matters!
- "Punching Up" vs "Punching Down"
- Dead Artists > Living Artists
- Styles > Multiple Artists > Single Artists
  - Using a style feels less "owned," IMHO. Similarly multiple artists using a similar style lessens the argument of "theft"

While generative tools in their current form are extractive in their fundament, we have a level of influence in how we decide to (not) use these tools.

Are there ways to make AI art in an ethical way?

It depends on the perspective of the viewer. No technology is perfectly ethical, but some strive to minimize harms more than others. Generative AI isn't doing its best. At the same time, it is challenging to place the blame for that on creators.

In the absence or delay of legislation, how might we develop a moral compass around the use generative AI in creative work? Here is our first attempt at guidelines: call it a "code of conduct" for AI-using artists, or "prompt etiquette".

SCREENSHOT FROM DERRICK SCHULTZ'S LECTURE ON TEXT-TO-IMAGE PROMPT ETHICS

:: 1 :: AVOID immitation.

Don't use living artists' names in your prompts. Don't blend or remix existing artworks to create a new work in a similar style. Be mindful that when you use someone else's personal style, you are in somebody else's house: respect their rules. Some artists might encourage you to use their likeness or style (as Grimes did for music). Others may suffer real material losses if you post work inspired by them and link it to their name.

:: 3 :: Mention THE WORKFLOW.

– the tool, version, model, notebook, whatever you know and can find to acknowledge the long value chain that came before you.

:: 2 :: RAW OUTPUT IS THE start, NOT THE end.

Work is best received when the artist transforms something beyond the raw output, engaging with the material thoughtfully and with a unique vision for its interpretation. Engaging with these images as material, rather than the end product, is helpful. Lean into experimentation and conceptual explorations.

:: 4 :: CREDIT OTHER inspirations.

that guided your workflow e.g. someone else's experiment or a tutorial or workflow they shared.

>>>

:: 5 ::
MENTION IT'S AI — AND acknowledge AI'S PROBLEMS.

This may lead some to reject it immediately: accept that that's part of the process of sharing art. Nobody is obligated to enjoy your work, your medium, or your beliefs. It may be tempting to fight back or defend your work, but it's also worth reflecting: this is a challenging space, with lots of ethical questions. Are you earnestly engaging with those questions? Do you have a thoughtful workflow that minimizes harm?

:: 6 ::
DON'T USE PROMPTS OF people THAT STILL HAVE TO pay RENT.

to not take away opportunities and income from those who still need it.

:: 7 ::
THINK OF IT AS moodboards.

If you feel the need to use artist names, use at least 5-10 to consider it a moodboard instead of ripping a single creator's corpus.

// PART 4:
// CREATING WITH
// (IN)TENSIONS
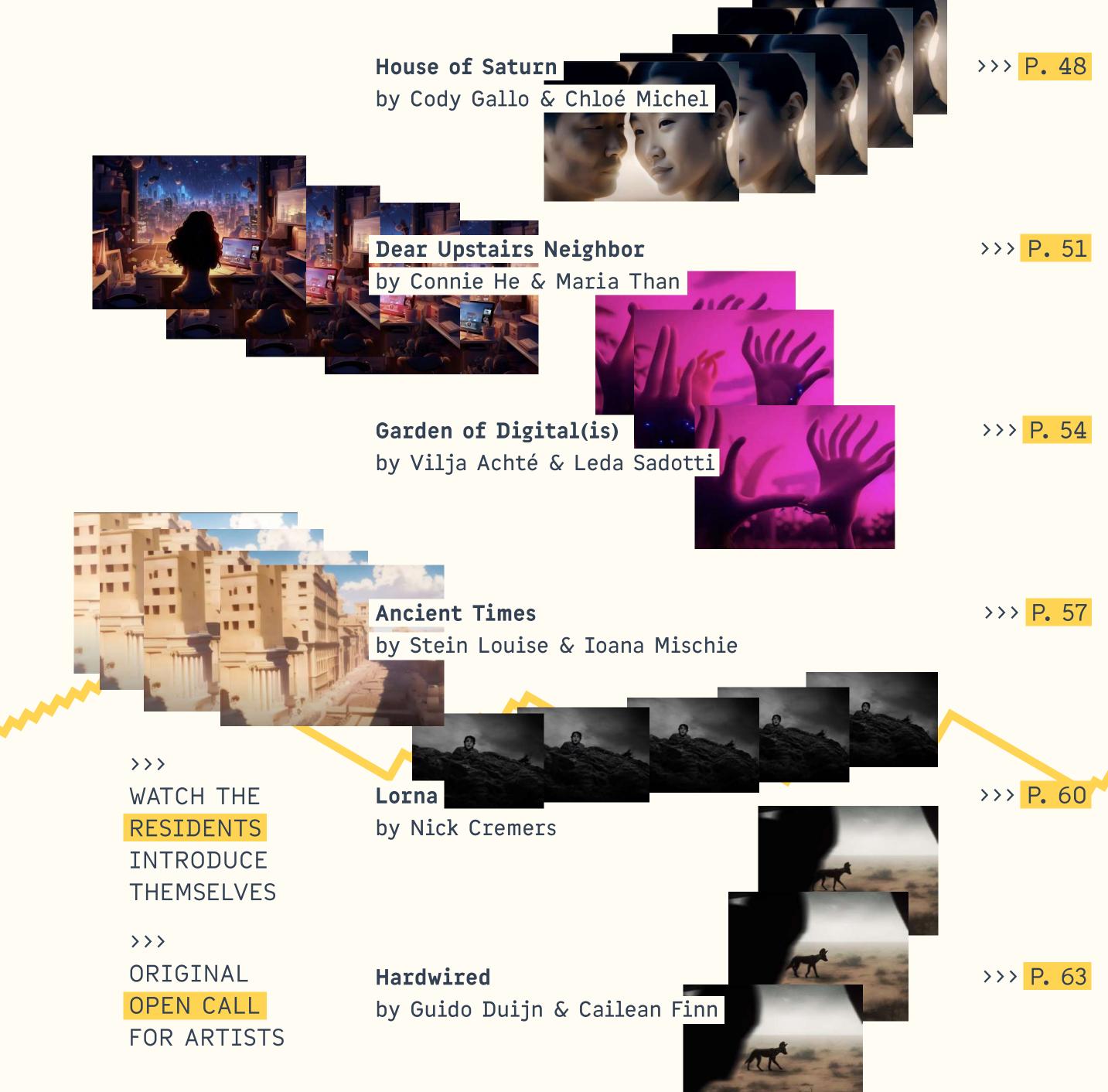
Within the residency, our aim was to be both present with the tensions, but also to make, create, and work through them.

After putting out an open call, we selected 6 animators / filmmakers with a story to tell and 6 creative technologists with experience tinkering with AI tools. They were paired up into duos based on shared interests and intentions.

While we were impressed by the creativity and wide range of expertise they brought to the table, we were most moved by their willingness to be open, vulnerable, and move through challenging territory in community.
They went through the motions and many rounds of experimentation.

In this chapter, you can watch their final teasers, and learn about their process, tools, and experiences along the way.

>>>
WATCH THE
RESIDENTS
INTRODUCE
THEMSELVES

>>>
ORIGINAL
OPEN CALL
FOR ARTISTS

House of Saturn
by Cody Gallo & Chloé Michel
>>> P. 48

Dear Upstairs Neighbor
by Connie He & Maria Than
>>> P. 51

Garden of Digital(is)
by Vilja Achté & Leda Sadotti
>>> P. 54

Ancient Times
by Stein Louise & Ioana Mischie
>>> P. 57

Lorna
by Nick Cremers
>>> P. 60

Hardwired
by Guido Duijn & Cailean Finn
>>> P. 63

HOUSE OF SATURN BY CHLOE MICHEL X CODY GALLO

In the not-too-distant future, corporate astronaut Jackie and her crew train for a dangerous mission to investigate signs of life on Titan. But in the midst of their assignment, a mysterious energy anomaly appears near their base that warps their perception of reality. As they struggle to unravel the truth behind their disturbing visions, they must confront whether the greatest threat to their mission is external or comes from within.

The **House of Saturn** teaser provides a preview of an interactive AI-powered experience that seamlessly integrates viewers into the film's themes. Through this interactive feature, audiences get a taste of dealing with the enigmatic black box of AI technologies, creating a more dynamic and immersive viewing experience when viewing the final film.

>>> WATCH TEASER FOR HOUSE OF SATURN

>>> TRY THE INTERACTIVE EXPERIENCE

Credits

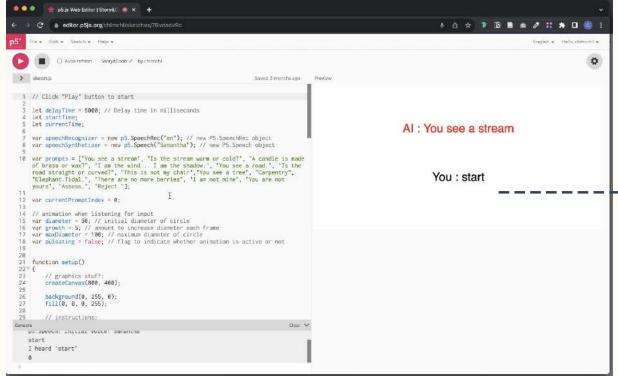Based on the screenplay **House of Saturn** by Kate Ryan Brewer

Concept & Design: Cody Gallo
Design & Development: Chloé Michel
Residency Mentor: Bobby de Groot

BTS:
HOW IT WAS MADE

JOIN THE HOUSE OF SATURN AI TRAINING PROGRAM

AYN-TYCHO Corp. is seeking skilled individuals to participate in the training of our state-of-the-art AYN-TYCHO AI system. AYN-TYCHO AI system will accompany astronauts on their mission to Titan, guaranteeing that they remain at the peak of their cognitive prowess.

As we embark on this groundbreaking expedition, we call upon all people from the comfort of their home to join hands in training and refining the AYN-TYCHO AI system.

START TRAINING

> One of the first steps was to test the possibilities of speech recognition and explore voice generation tools. P5js was a quick tool to prototype the first iteration of the interaction.

TOOLS:
P5.JS

> As we were already using the Python API to generate the voice, we used the web framework Flask, hosted on Python Anywhere, a free solution to get the website online quickly.

TOOLS:
PYTHON API,
FLASK, PYTHON
ANYWHERE

> To create progression within the teaser, we divided the footage into 3 batches: real stock footage, weird stock footage and AI generated-footage, AI-generated footage.

TOOLS:
MIDJOURNEY,
PEXELS STOCK
FOOTAGE

> Midjourney images that were initially used to generate a mood board became the image prompts for video.

TOOLS:
RUNWAY GEN 2,
ZEROSCOPE VIA
HUGGINGFACE

>>>>>>>>>>>>>>>>>>>>>>>>>>>> READ MORE

AIxAnimation, AIxDesign & Sublab ‹Story&Code›

CHLOÉ MICHEL

Creative Technologist, Media Designer

Chloé Michel is a French Creative Technologist and Media Designer who works at HEAD – Geneva. She enjoys working with code and data in order to question the perception of new media technologies as vehicles of human progress, and explore the cultural environments from which they emerge and the possibilities they offer for understanding the world(s) we live in.

>>> CHLOÉ'S PORTFOLIO

>>> CHLOÉ ON INSTAGRAM

///

They connected and were paired up based on their shared interest in exploring new media technologies, such as AI, as black boxes to human experience.

X

CODY GALLO

Filmmaker / Audience Experience Designer

Cody Gallo is a filmmaker from the US living in Norway. He has 12+ years of experience as an assistant director for TV and feature films, including Twin Peaks: The Return and Let the River Flow. He's pursuing a Master's in Media and Interaction Design at the University of Bergen with a focus on creating impactful stories that influence culture.

>>> CODY'S PORTFOLIO

>>> CODY ON INSTAGRAM

"It is still up to the human artist / storyteller to exercise empathy for the human condition and decide whether a generated artifact creates an emotional impact or meaning for an observer."

CODY GALLO ABOUT THEIR WORK

DEAR UPSTAIRS NEIGHBOR BY CONNIE HE X MARIA THAN

The Artist lives in a busy apartment complex where she works on her animations from her messy bedroom. One night, after a hard and stressful day at work, she drags herself to bed longing for a good night's sleep. As she closes her eyes, the upstairs neighbor decides to throw a massive flat party.

>>> WATCH TEASER FOR DEAR UPSTAIR NEIGHBOR

Credits
Made by Connie He & Maria Than
Sound Design: Shu Hui Yao
Music from Ambient 4 by IX Prospectum,
Outrunning Shadows by Cold Beat, lofi
limbo by shitbird
Residency Mentor: Marc Veerkamp

BTS:
HOW IT WAS MADE
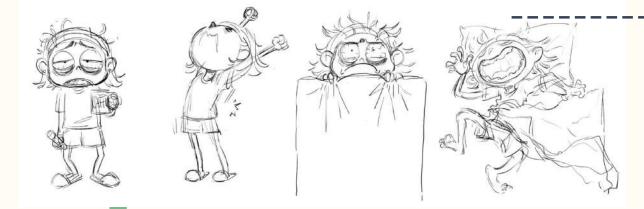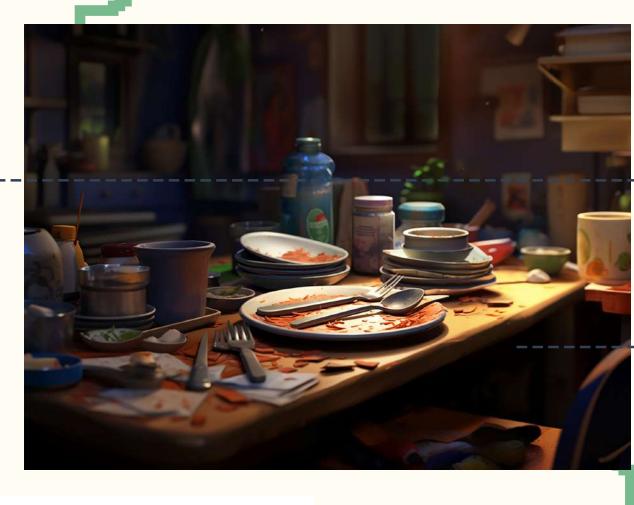
> We broke down Connie's existing workflow as a storyteller and animator without any AI integration, from storyboard to the final product. We highlighted the difficult points in her process and used AI tools to make it easier.
⌄
⌄

> We used InPainting tools to compose images based on an agreed storyboard.
⌄
⌄

> Still images were then animated in Photoshop and Premiere Pro.
⌄
⌄

> Ai-generated videos were done through style transfer using RunwayML Gen-2 or by superimposing AI-generated content from Stable Diffusion and RunwayML Gen-2 onto green screen backgrounds which were then animated.

TOOLS:
PHOTOSHOP,
STORYBOARD PRO,
PREMIERE,

DALL-E,
MIDJOURNEY,
STABLE
DIFUSSION,

RUNWAY ML

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

>>>>>>>>>>>>>>>>>>>>>>>>> READ MORE

CONNIE HE   X   MARIA THAN

Story Artist, CG Generalist   Creative Technologist, Educator, Activist

Connie He is a US-based story artist and CG generalist. She studied Computer Animation at Ringling College of Art and Design (2018). Connie has a passion for storytelling, as well as connecting art and technology together. She is currently working in the feature animation industry in California, United States.

>>> CONNIE'S PORTFOLIO

>>> CONNIE ON INSTAGRAM

Maria Than is a Viet-British-French creative technologist, educator, activist & co-founder of Ricebox Studio. Using AR, illustration and AI-generated content, she explores her identity as a chronically online Asian woman surrounded by themes of buddhism, over-productivity, anxiety, internalised racism, burn-outs & escapism.

>>> MARIA'S PORTFOLIO

>>> MARIA ON INSTAGRAM

//

Connie and Maria are a power team. Connie is an artist who is seeking new ways of storytelling. Maria is a creative technologist who is always open to challenges. Together they bring their passion for art and technology into this dazzling story "Dear Upstairs Neighbors".
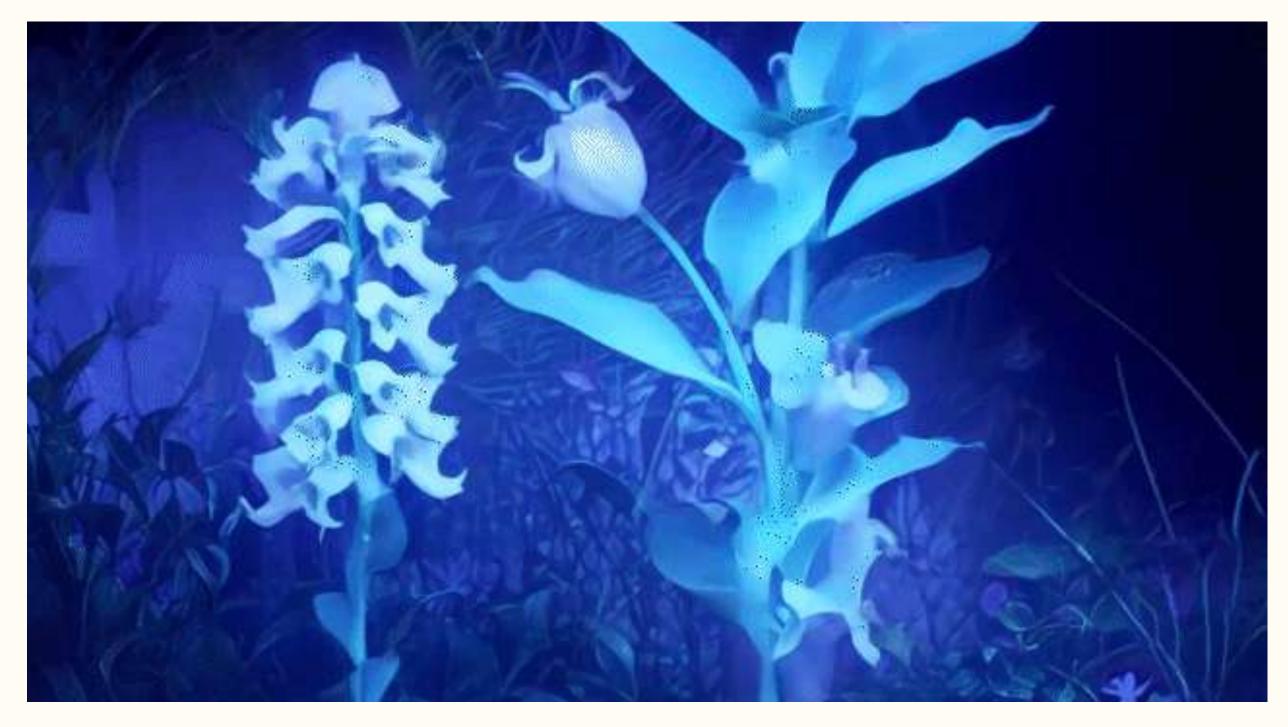
"We asked ourselves 'What can AI do that we can't do ourselves when it comes to bringing our idea to life?'."

MARIA THAN ABOUT THEIR PROCESS

GARDEN OF DIGITAL(IS) BY VILJA ACHTÉ X LEDA SADOTTI

The story begins with a female protagonist battling traditional gender roles and power dynamics in her life. She feels she doesn't have agency and is like a plant who is moved around in a planting pot. After experiencing a supernatural occurrence, she consumes a digitalis flower from her overgrown garden. This functions as a catalyst for a strange metamorphosis — the woman's perception of reality undergoes a shift, and she eventually fuses physically with her environment. The teaser is an atmospheric glimpse into the storyworld, where the environment is an active part of the narrative.

AIxAnimation – AIxDesign & Sublab – <Story&Code>

>>> WATCH TEASER FOR
GARDEN OF DIGITAL(IS)
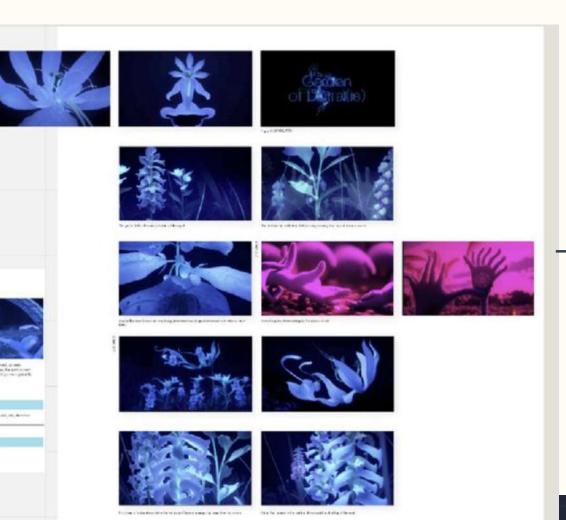
Credits
Sound layering: Lauri Achté
Music: AIVA
Residency mentor: Alex Downing
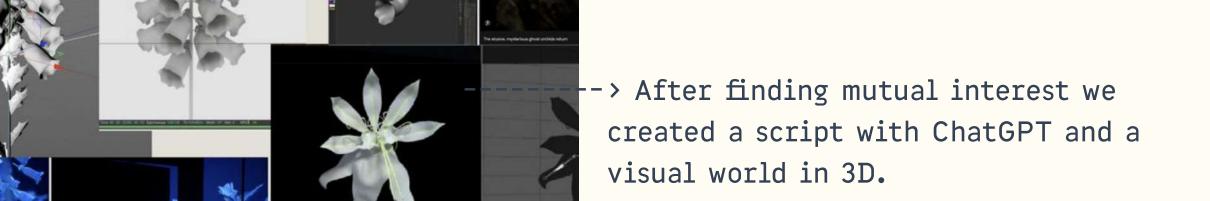
BTS:
HOW IT WAS MADE

> After finding mutual interest we created a script with ChatGPT and a visual world in 3D.

TOOLS: CHATGPT, Z-BRUSH, CINEMA 4D

> We created a storyboard along the two main narratives of the story: 1. The environment, 2. The metamorphosis.

> Then we summarized the script into a poem using ChatGPT and layered it with sound using AIVA.

TOOLS: CHATGPT, AIVA

> The animation was done in Deforum Stable Diffusion, Cinema 4D, Octane and Runway Gen-2. We also tried bringing the video to VR.

TOOLS: DEFORUM STABLE DIFFUSION, CINEMA 4D, OCTANE, RUNWAY

>>>>>>>>>>>>>>>>>>>>>>>>>>>> READ MORE

VILJA ACHTÉ

Artist, Educator and Researcher

X

LEDA SADOTTI

Creative Technologist

Vilja Achté is a Helsinki-based artist, educator and researcher interested in the possibilities of digital storytelling. She holds an MA in Visual Communication from the Royal College of Art (2016), a BA in Graphic and Media Design from the University of the Arts London (2014) and is currently a practice-based PhD candidate at Aalto University School of Arts, Design and Architecture in Helsinki.

>>>
VILJA'S
PORTFOLIO

Leda Sadotti is a creative technologist, currently based at the Creative Computing Institute in London. Her practice engages in ethical programming, digital statehood and building virtual communities using open-source software.

>>>
LEDA'S
PORTFOLIO

>>>
LEDA ON
INSTAGRAM

"The most enjoyable thing was to play around with the unpredictability of AI tools, being surprised by the results, and allowing that to affect the process."

VILJA ACHTÉ ON THEIR RESIDENCY

////////////////////////////////////

Vilja Achté and Leda Sadotti teamed up due to a shared interest in media art and technology to create the teaser "Garden of Digital(is)". In the <Story&Code> residency Vilja and Leda explored themes of environmental storytelling and wished to learn more about AI tools through playful experimentation.

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

ANCIENT TIMES BY STEIN LOUISE X IOANA MISCHIE

In a past long forgotten, we follow the exodus of a people, longing for answers. But this time you just might be the main character. A comedic concept about presentations and stage fright.

>>> WATCH TEASER FOR ANCIENT TIMES

Credits

Concept, Design and Editing: Stein Louisse
Development: Ioana Mischie
Music: 'Controntation' written by Neal Acree and Ryan Amon
Residency mentor: Wip Vernooij
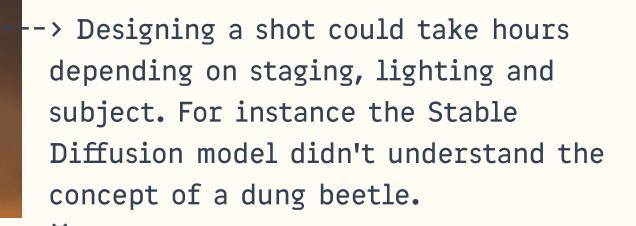
BTS:
HOW IT WAS MADE

> Designing a shot could take hours depending on staging, lighting and subject. For instance the Stable Diffusion model didn't understand the concept of a dung beetle.

TOOLS:
STABLE
DIFFUSION

> The AI is dreaming up something

> Although beautiful, not really what i'm looking for. I need a shot with a dung beetle carrying its dung over a hill. Eventually with some help by painting a rough concept and using additional tools in stable diffusion like ControlNet, I got much closer.

TOOLS:
CONTROLNET

> We used the prompts and images to generate videos.

TOOLS:
RUNWAY GEN-2

> Once we had enough videos we both made an edit and ended up using an AI voice from ElevenLabs.

TOOLS:
ELEVEN LABS

>>>>>>>>>>>>>>>>>>>>>>>>>> READ MORE

STEIN LOUISE

Painter and Filmmaker

X

IOANA MISCHIE

Transmedia Artist & Futurist

Stein is a painter and filmmaker from Amsterdam who specializes in animation. Working mostly into the feature and series field as an animator or background painter but slowly opening up for oil painting and writing/ directing.

>>>
STEIN'S
PORTFOLIO

>>>
STEIN ON
INSTAGRAM

Ioana is a Romanian-based transmedia artist & futurist, with a background in storytelling, filmmaking and VR. I had the luck to study transmedia storytelling through multiple short programs across four continents. During her PhD thesis she coined a new audio-visual genre called "noetic fiction" and most of her work currently explores this layer further.

>>>
IOANA'S
PORTFOLIO

"While I recognize that commercial viability might not always align, when it comes to pitching ideas and concept development, I'm certain these tools will become largely incorporated in one way or another, among creatives."

STEIN LOUISE ABOUT AI TOOLS

LORNA
BY NICK CREMERS

Ben an 11 year old Irish boy witnesses his mother throwing herself from a cliff. She miraculously returns unscaved but her behaviour is different. Ben wants to figure out what happened. Lorna is a 20 min+ black and white animated mystery/horror story that plays out on the coast of Ireland in the 50's. Ben the young son of a fisherman witnesses his mother throwing herself off a cliff. She reappears unscaved back at the house and starts displaying a behavior that leads Ben to question if she really is his mother.
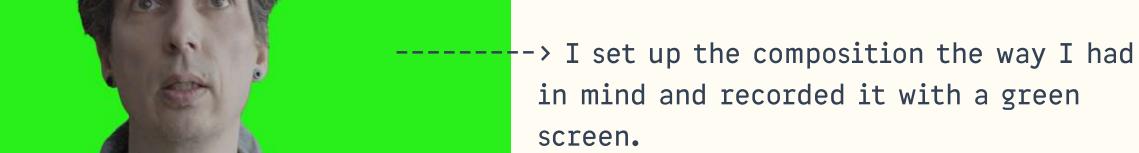
>>> WATCH TEASER FOR LORNA

Credits

I like to thank the program for choosing me and the guidance through this AI wormhole: Nadia Piet, Eryk Salvaggio, Morris Rohof. The participants that shared their struggle, their hopes and fears. Diarmuid:(, the mentors especially Rachel Brennan. Marvey Izijk for the music.

BTS:
HOW IT WAS MADE

> I set up the composition the way I had in mind and recorded it with a green screen.

> I created a still for the first, the middle and the last image of the video sequence.

TOOLS:
STABLE
DIFFUSION

> These stills where used in EBsynth as well as a mattes for the 3 images.

TOOLS:
EBSYNTH
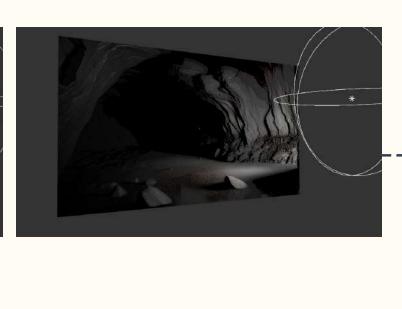
> Next up was the the creation of the cave. I used an depth generator add on for Stable Diffusion to create a Z-pass to use in a 3D or compositing program.

TOOLS:
STABLE
DIFFUSION,
CINEMA 4D

> Then brought in the keyed footage and matched the 2 together compositon wise.
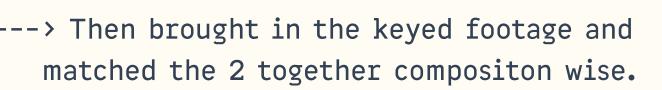
TOOLS:
AFTER EFFECTS

>>>>>>>>>>>>>>>>>>>>>>>>>>>>> READ MORE

NICK CREMERS

3D Generalist / Animator / VFX Artist

Nick Cremers is a 3D generalist/
animator/VFX artist by trade and
storyteller by night.
After studying VFX at the NFTA he
started working at several studios but
still keeps enough time open for his own
pet projects. They range from happy 3D
animated characters to dark stories
inspired by the likes of Stephen King.

>>>
NICK'S
PORTFOLIO

>>>
NICK ON
INSTAGRAM

"To keep up with all the new stuff will be a fulltime job on itself. There are also a lot of people willing to share their findings so the community is getting bigger and is there to help."

NICK CREMERS ON HIS PROCESS

HARDWIRED BY GUIDO DUIJN X CAILEAN FINN

Hardwired explores the life of a wild dog and her child in a post-war African savanna, which has destroyed their environment, and home. On their journey, the curious pup stumbles upon a 'seemingly' benevolent quadruped robot while the mother scouts the landscape for resources. Left on his own, the pup begins to playfully interact with their mechanical counterpart which finally alerts the mother to the possible danger to the safety of her child.
Through this interaction, we wanted to reflect on what it truly means to be a 'mother', while questioning if machines will ever develop the capability to occupy more human-centric roles.
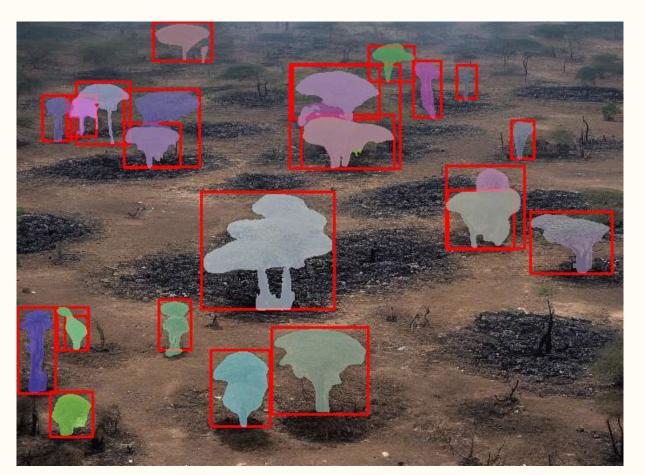
>>> WATCH TEASER FOR HARDWIRED

Credits
Residency Mentor: Marlyn Spaaij

AIxAnimation – AIxDesign & Sublab – <Story&Code>

BTS:
HOW IT WAS MADE

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

> 2D Sketches

TOOLS:
STABLE
DIFFUSION,
CONTROLNET,
TEMPORALKIT
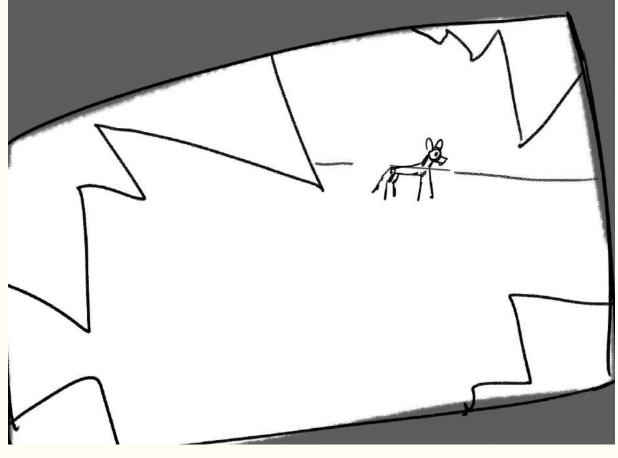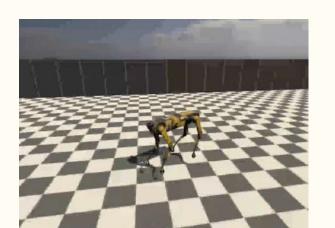
> Diffusion Flicker

TOOLS:
STABLE
DIFFUSION,
SEGMENT
ANYTHING MODEL
(SAM)

> 2D Background to 3D Semantic
Segmentation: Stable Diffusion +
ControlNet + Unity

TOOLS:
STABLE
DIFFUSION,
CONTROLNET,
UNITY

> Experiment in Emergent Animations

TOOLS:
UNITY3D, ML-
AGENTS

READ MORE

GUIDO DUIJN

Character Animator and Filmmaker

X

CAILEAN FINN

Media Artist and Creative Technologist

Guido Duijn is a character animator and filmmaker from Haarlem, Netherlands. Guido is currently in his final year of studies at The Animation Workshop in Viborg, Denmark where he studies character animation.In his work, Guido explores themes of masculinity, identity, and environmentalism, often told with humor that ranges from quirky and whimsical to dark and absurd.

>>>
GUIDO'S
PORTFOLIO

>>>
GUIDO ON
INSTAGRAM

Cailean Finn is a media artist and creative technologist from Waterford, Ireland. His practice investigates computational design and processes embedded within socio-technological systems. In his work, Cailean explores emerging technologies, and digital tools in search of new modalities of collaboration with machines.

>>>
CAILEAN'S
PORTFOLIO
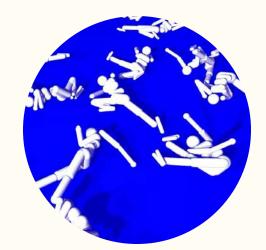
>>>
CAILEAN ON
INSTAGRAM

"Sometimes the AI would even surprise us which led us to make choices we wouldn't have made ourselves. In a way, the AI was my and Cailean's third collaborator."

GUIDO DUIJN ON THEIR PROCESS

// CLOSING THOUGHTS:
// PLAY X RESPONSIBILITY

In the six months since we began planning this residency, event series and research project, we saw the rise of a shocking number of new tools. ChatGPT became GPT 3.5 and then GPT4. Runway launched a generative video tool (and then launched another). Image generation platforms upgraded several times over.

It's become cliche to say the landscape is shifting fast. But the speed of that transformation does not have to trap us into being passive recipients of this technology. Artists, storytellers and creative technologists have powerful tools in their hands. They can use the tech in new ways that open up new forms of storytelling.

They can shift the narrative around these tools and how they are marketed, raising the public awareness of exploitative practices and challenging their normalization in the AI industry.

We can also lean on policymakers to strengthen protections for data, so that we can trust the output of our tools to be in fair use towards other's labor.

Embedding strong citational practices into generative culture is another way forward: let us see inside the datasets so that we can better understand what these images draw from to make sense of the world.

The tension between play and responsibility is perhaps the most dominant of them all. Artists should feel free to play and explore with these technologies, mindful that this playground was built on the data of many unrecognized fellow artists. We should be respectful of those whose work was included in these datasets and seek solidarity across the divide that separates artists working with their hands or mousepads and those who want to understand this new wave of generative technology.
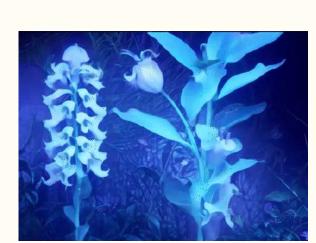
Through the writing of this report, interviews with artists and workshop hosts, and a seemingly never-ending stream of articles, social media posts and in-person conversations, one thing has been clear. It's part of why we structured the report the way we did.

The takeaway is this: playing with tensions can be scary, but it can also be a source of creativity and inspiration in and of itself.
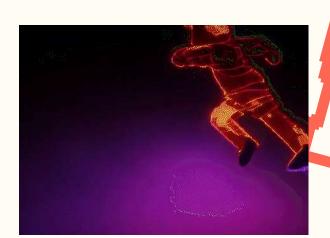
None of the artists saw the ethical use of technology as a hard stop. Instead, they navigated a workflow around the parts they disagreed with. The result was six pairs of unique, thoughtful, and engaged approaches to crafting their stories with AI tools.

What is inspiring about these projects is that it shows the roles that artists can play in truly ambiguous, fraught cultural conversations. By refusing to be stuck in a binary of "yes or no," artists can ask, "maybe this?". The resulting experiments may not be aligned to everyone's political perspectives — no work of art ever is — but it shows the potential for artists to grapple with deep concerns about a technology and play within and at the edge of its limits at the same time.

THE END

Launching, running, and being present with the <STORY&CODE> program has been an incredibly rich experience.

What felt most meaningful was approaching the program as an opportunity to practice new modalities and alternative ways of learning, creating, and sense-making in community.

We managed to create a space in which we were truthful to the questions we had and could hold ourselves and each other through the anxieties that come with change and uncertainty.

Nobody knows where we're going from here, but we have agency in steering the trajectory and can lean into our talents as creatives and storytellers in making meaning out of it all.

I am grateful for everyone that's been part of this program: holding and taking up the space to figure things out together, reflecting on where we're at, and plotting potential routes forward that feel aligned with what we value.

It's been a journey of questions, answers, and many more questions that I look forward to build upon and deepen in future work.

I hope we all will - as we carry the foundations we've layed together with us into the creative projects and conversations we'll be a part of.

Thank you,
Nadia Piet

>>> AIXD ON WEBSITE / INSTAGRAM / LINKEDIN

>>> SUBLAB ON WEBSITE / INSTAGRAM / LINKEDIN

>>> ORIGINAL PROGRAM ANNOUNCEMENT

>>> WATCH RESIDENTS SPEAK ABOUT THEIR INTENTIONS AT THE START OF THE RESIDENCY

AIxAnimation   AIxDesign & Sublab _ <Story&Code>

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Art.Animation _ .TxDe...ory&Code>
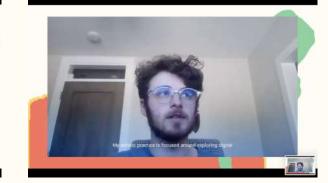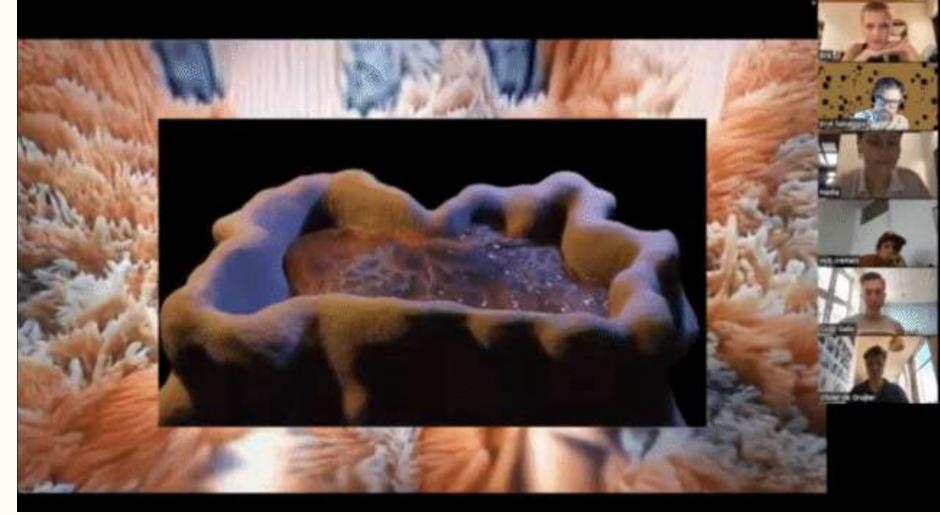
WORKSHOP #1: COLLABORATIVE WORLDBUILDING W/ ERIK PETERS

For this session we invited Erik Peters (he/they) who will help us explore and make an inter-dependent web of ecologies & technologies, human and non-human beings. Exploring how to build a speculative climate future ourselves, much like Erik's work, through accessible open source tools for generative AI.

>>> WATCH THE WORKSHOP ON YOUTUBE

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>>>>>>>>>> GRAB THE WORKSHEETS

>>> ERIK ON INSTAGRAM

BY STUDENTS OF ZHDK
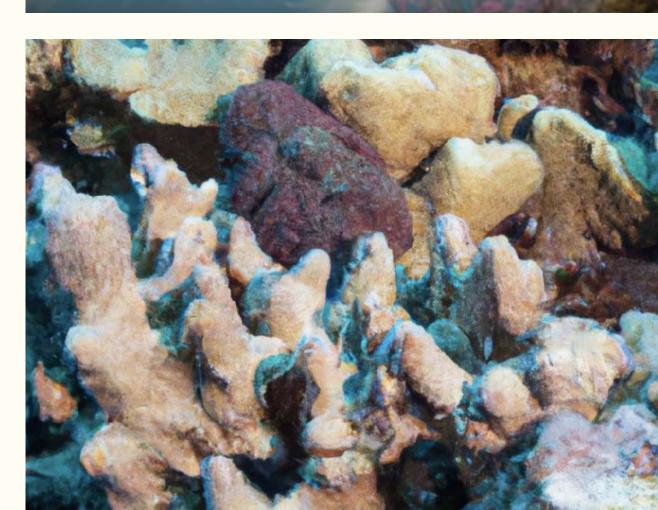
BY DENIZ KURT   BY NINA DE LA NUIT   BY STUDENTS OF ZHDK

Design & Sublab / Story&Code

TOP: DIARMUID FARRELL
MIDDLE: CAROLINA OVANDA
BOTTOM: CODY GALLO

WORKSHOP #2: DIFFUSING THE EVERYDAY W/ SOYUN PARK

For this session we invited Soyun Park (she/her) to host a hands-on workshop exploring the vast possibilities through converting video to video, looking to reshape our world through imagination and generative tools.
We filmed quick video snippets and brought them to life with a clear storyline & style using Stable Diffusion.

>>> SOYUN ON INSTAGRAM

>>> WATCH THE WORKSHOP ON YOUTUBE
ˇ
ˇ
>>>>>>>>>>>>> ACCESS THE SLIDES
ˇ
ˇ
>>> DEFORUM COLAB NOTEBOOK

>>> EASY UI, EASY DIFFUSION, GEN 2 RUNWAY

WORKSHOP #3: LATENT ANIMATION W/ FABIAN MOSELE

For the third series, Fabian Mosele, a synthographer, explores the intersection between generative machine learning and storytelling through animation, parody and the remix of internet phenomena. In their workshop, Fabian shows us how to take stop motion photographs and convert them into generative animations using Stable Diffusion.

MEDITATING CAT BY TEJUS

BY NADIA PIET

>>> FABIAN ON INSTAGRAM

>>> WATCH THE WORKSHOP ON YOUTUBE
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ˇ
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>>> STABLE DIFFUSION WEB UI

MISTER SUNSHINE BY STEVEN ELBERS
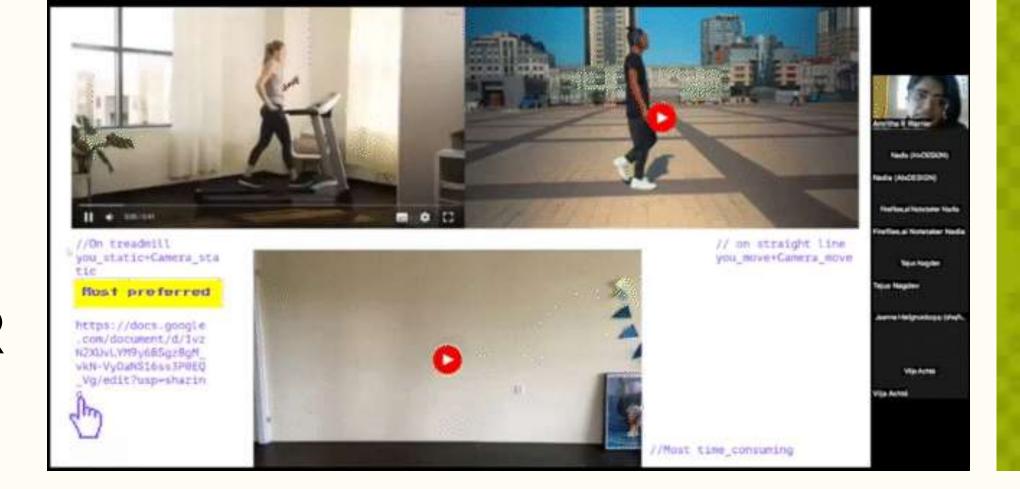
FELT FLOWERS BY MARINA CARDOSO

STORY&CODE

Latent Animations: Generating Characters in Motion

Kathleen's iPad (2)

May 23rd 2023

WORKSHOP #4: LAYERING GENERATIONS W/ AMRITHA WARRIER

For the final workshop, we invited Amritha Warrier, an India animator, who's a huge fan of mixed media art. A practitioner who tries blurring the boundaries between 2d, 3d and AI to make animation look seamless, she introduced us to hacky workflows using a diverse set of tools to craft our unique animation styles.

>>> WATCH THE WORKSHOP ON YOUTUBE

>>>>>>>>>>>>> ACCESS THE SLIDES

>>> GRAB THE ASSETS

>>> AMRITHA ON INSTAGRAM

>>> VIDEO MANIPULATION W/ RUNWAY

TOP: JEANNE
MIDDLE + BOTTOM LEFT: LEO
BOTTOM RIGHT: NADIA PIET

DIY: TOOLS

Video & Images & Animation

>>> MODELSCOPE

Text to Video Synthesis

>>> RUNWAYML

Sign up and explore if you haven't
already. A quite comprehensive,
browser-based suite of tools for
training, generating, and editing images,
text, and video with AI.
> GEN-1
> GEN-2

>>> STABLE DIFFUSION

Can be installed locally with a powerful
enough machine, and then run from your
browser locally.
> GITHUB REPO
> TUTORIAL PC / TUTORIAL MAC

>>> DREAM STUDIO

Generate images with this Stable
Diffusion interface from your browser.
Requires a fee to process images.

>>> DALL-E 2

OpenAI's original image generation tool.
Simple, minimal, browser-based design.

>>> CONTROLNET

A tool for posing characters in
Diffusion-generated images, hosted by
Hugging Face. Can be used in-browser or
on a local GPU.
> TUTORIAL

>>> MIDJOURNEY

A Discord-based image generating app.
All of your prompts are public, but
Midjourney's outputs are based on
extremely high "aesthetics" scores,
meaning they tend to look better than
others (there tends to be a "Midjourney
style" as well, for better or for worse.)

DIY: TOOLS

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

Writing

>>> CHATGPT

OpenAI's chatbot trained on billions of text tokens. Browser-based.

>>> GPT3

The source technology behind ChatGPT is also accessible, with a variety of formats (including an open-ended "playground" for experiments).

>>> THIS ARTICLE

explores a few other script writing tools, if you want to see examples of what's out there.

Voice & Sound

>>> VOICEMOD

is a voice changing algorithm to transform any performance into a different set of characters.

>>> DANCE DIFFUSION

is a Google Colab notebook that creates very short (1-3 seconds, but extendable) audio samples, including extensions of samples you provide. Quite time consuming, and final output is not high quality until you upscale it (also time consuming)

>>> AIVA
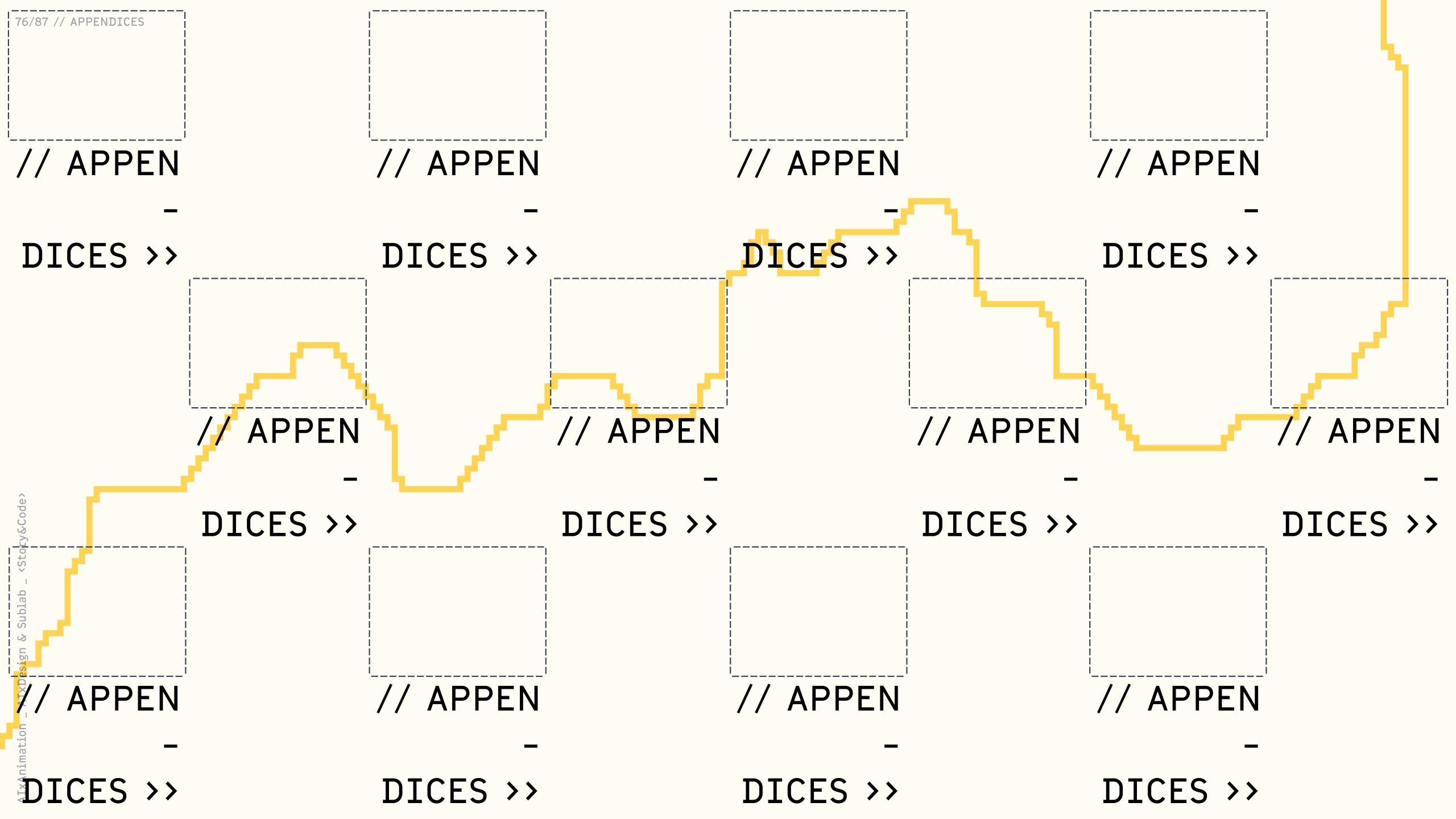
is a web-based tool for music generation, particularly useful for orchestral soundtracks and film scores.
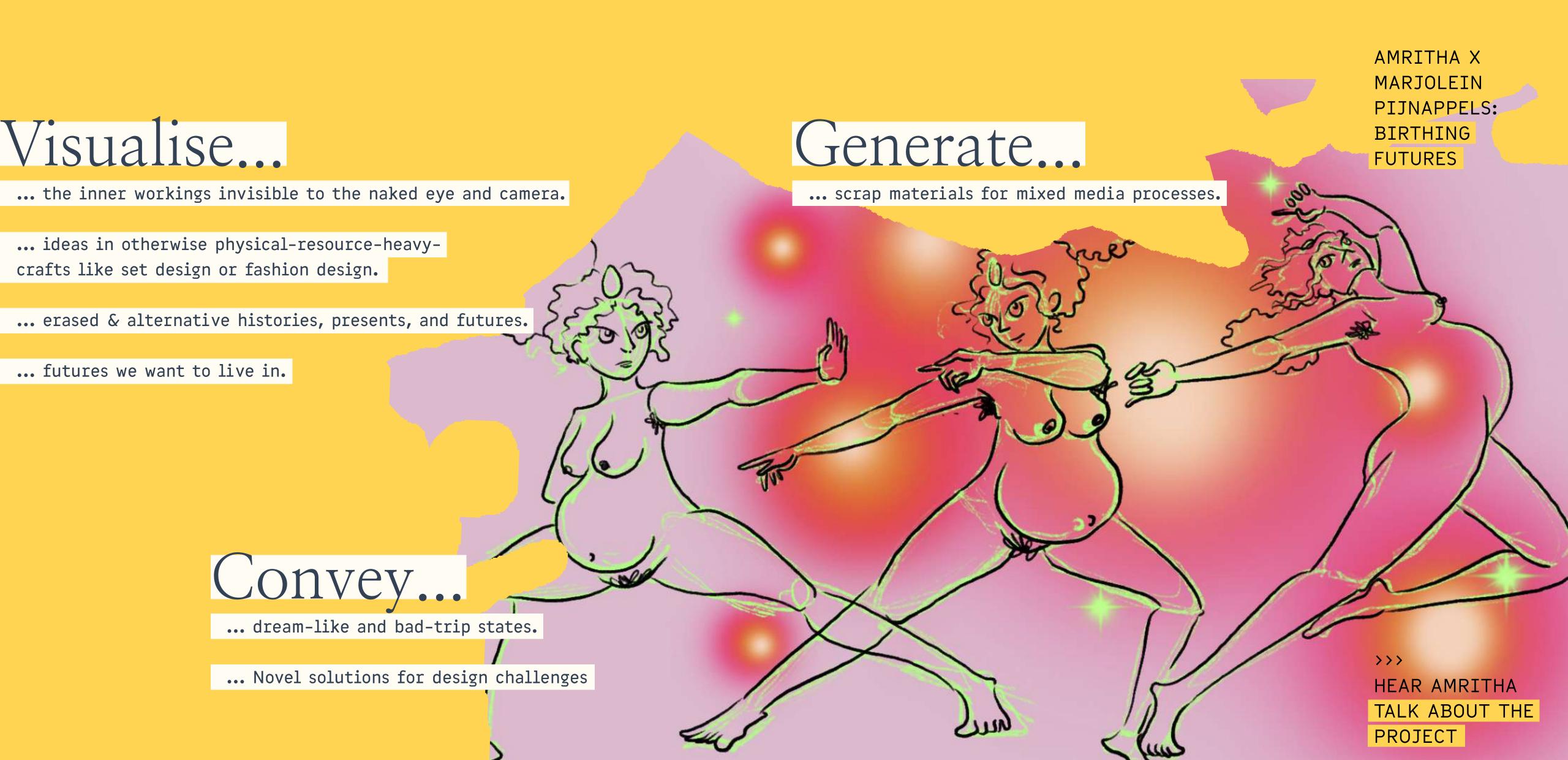
>>> ECRETT

is a music generator for video scores: it allows you to describe a scene, mood, and tone, and will then create audio to match.

>>> SOUNDDRAW

is Ecrett with a more robust (and expensive) GUI.

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AMRITHA X
MARJOLEIN
PIJNAPPELS:
BIRTHING
FUTURES

Visualise...

... the inner workings invisible to the naked eye and camera.

... ideas in otherwise physical-resource-heavy-crafts like set design or fashion design.

... erased & alternative histories, presents, and futures.

... futures we want to live in.

Generate...

... scrap materials for mixed media processes.

Convey...

... dream-like and bad-trip states.

... Novel solutions for design challenges

>>>

HEAR AMRITHA
TALK ABOUT THE
PROJECT

CO-CREATION & CONTROL

Traditionally, each brush stroke, stitch, or pixel of visual craft is intentionally chosen and placed by its creator. But working with AI, the outputs are less linear, less predictable, and less controllable. This shows up on a few levels:

> In learning to but steer the outputs through prompt engineering

> In the less-linear nature of AI workflows

> In interactive formats that work with user input

While disruptive in some senses, and not always useful, this also is precisely what makes it exciting/interesting.

It opens up for exciting serendipity in the creative process – where unexpected outputs or what Bob Ross would call 'happy accidents' might bring new elements to our story that we hadn't looked for but happily invite in.
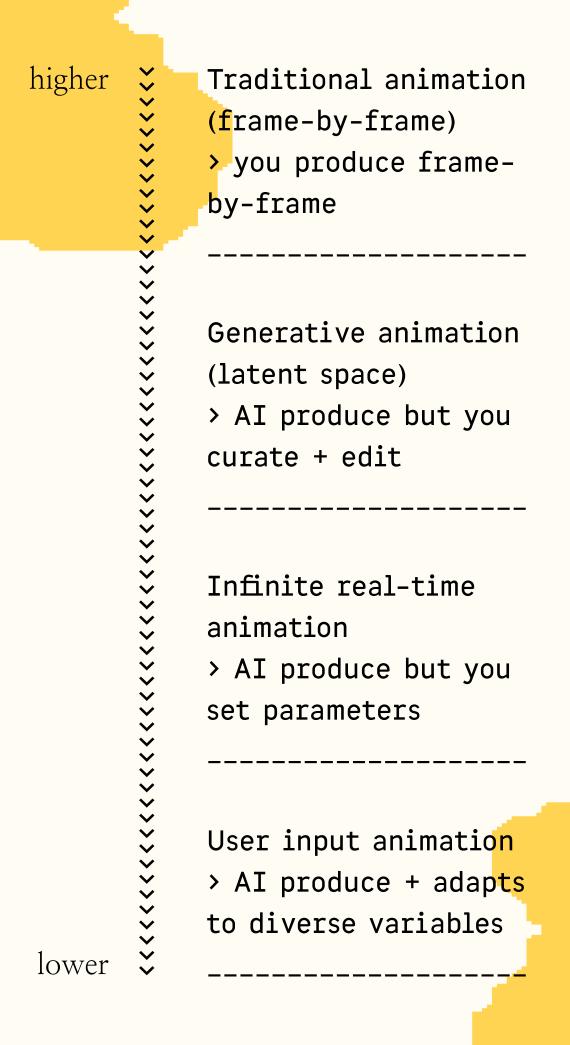
It calls for an even stronger intention of the creator – to determine what feels 'right' or doesn't and to evaluate and curate its outputs in service of the story they wish to tell.

But it also calls for an openness, a giving in, a letting go of control that feels very different from familiar creative workflows, and for many makers may spring resistance opposing the very reason they create.

Storyteller's

level of control

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lower ⌄

Traditional animation
(frame-by-frame)
> you produce frame-
by-frame

Generative animation
(latent space)
> AI produce but you
curate + edit

Infinite real-time
animation
> AI produce but you
set parameters

User input animation
> AI produce + adapts
to diverse variables

/////////// POINT OF VIEW ///////////

(NON-)CONSENSUAL TRAINING DATA

>>> ARTICLE ABOUT MAT DRYHURST +
HOLLY HERNDON'S SPAWNING PROJECT
TO PROTECT ARTISTS IN THE AI ERA

Many artists have found themselves and
their work being used as training data
of invasive AI models.

>>>>>>>>>

What new laws can be designed
around these emerging tools and
modes of production? What can
creatives do to protect themselves
in an era of generative design? >>>>>>>>>>>>>>>>

1 :: Consent to collect data

When an artist's work is used to train a
model, consent must be provided from
the artist (providing them with the
choice to opt in or out). Compensations
must be given in the case that they
decide to opt in.

> Possibility of new creative commons?
> What may new patent laws look like?

These large machine learning models are
mostly trained on existing artwork that
many artists have spent all their time
on - with little to no compensation at
all.

/////////// POINT OF VIEW ///////////

>>> ARTICLE ABOUT AN ILLUSTRATOR
FINDING HER WORK UNWILLINGLY
TURNED INTO AN AI MODEL

>>>>>>>>> 2 :: Consent to remix

In the dawn of remix culture, how can
we honor the work that comes before us?
It is important to consider how much of
a derivative the work is and how much
re-appropriation has been done from
another artist.

> Artist royalties program?
> Give credit where credit is due?
> How did people do it with sampling?

While opting out can be an option, as
creatives in an era of generative AI,
how can we navigate our own and others'
creative contributions? How can
policymakers support fair and ethical
use of creative commodities?

gn & Sublab _

HAVE WE BEEN HERE BEFORE?

>>>>>>>>> > When photography came around, people feared it would replace painting. As we now know it did not, although it did steer it to become more abstract - a similar trend we're now also seeing with AI in animation

In discourse around new technologies, it can be helpful to reflect on the past. We're familiar with the anecdotes:

>>>>>>>>>>>>>>>>>> > Photography needed to develop its own language as a medium before it could become accepted. It's useful for artists to think about this: what can AI do that takes it beyond "replacing" other mediums, and creates something distinct? How has portraiture painting existed with the advent of photography?

>>>>>>>>> > With each stage of industrialisation and tech development, people feared they would all lose their jobs. It did happen for some of them but overall it only created more work

>>>>>>>>>>>>>>>>>>>>>>>>> > When Nam June Paik started releasing video art, it was rejected and ridiculed as most new expressions

In her Workshop, Amritha Warrier reflects on Marshall McLuhan's views on how during the embryonic stage of development of any new technology, we never really know what it's going to be. Moving past assumptions and not accepting the status quo of how it needs to be used might be a helpful guideline for creatives trying to make sense of the tech.

>>> WATCH AMRITHA'S COMMENT

>>>>>>>>> It's good to learn from our responses in the past and question where and how they offer helpful mental models.

>>> "Historically, anyone who has been ahead of the curve / is avant garde is prone to immediate backlash in the public eye." ERYK SALVAGGIO

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

CREATIVE
GRATIFICATION

In traditional animation, and most visual arts alike, there is a clear flow and rather linear, iterative workflow moving from:

>>>>>>>>>>>>>>>>>>> > the imagination >>>>>>>>>>>>>>>>>> > to low-fidelity sketches >>>>>>>>>>>>>>>>> > to medium-fidelity storyboards >>>>>>>>>>>>>>>>>>> > to high-fidelity frames and finally a film.

>>>>>>>>>>>>>>>>>> But using AI early in the process, completely messes with this: taking a shortcut on the inevitable frustration and suffering during the earliest phases of the creative process. While this has its benefits, it skews the usual reward that comes from creating.
AI generated images often have a glossy feel to them and are much more detailed than our sketches would be. Using these for example for storyboards, some of the residents found this to have a demotivating effect, giving us less urgency or satisfaction of the artwork becoming 'better'.

>>>>>>>>>>>>>>>>>> In a world that rewards quick wins, and creative work requiring us to be patient and persistent with the process, this is an urgent friction on both on a neurological, psychological, and industrial level.

"We get hooked on the sleek outputs (from AI). Then when we start sketching stuff, the output is disappointing."

IOANA MISCHIE

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

WAYS TO STEER AI OUTPUT

Accepting the quality of less control, we may never fully 'control' our outputs as we're used to in traditional workflows so better to think of it as steering the model.

That said, there are a few levers creators can pull to get AI models to create the outputs they're looking for:

/////////// POINT OF VIEW ///////////

To make their AI short, Fabian Mosele called upon friends to collectively draw a dataset of fanart for its characters - challenged at once the extractive nature and uni-latent understanding of AI models.

>>> WATCH FABIAN TALK ABOUT THEIR CUSTOM DATASET

:: 1 ::
Engineer your prompts & tweak parameters.

:: 2 ::
Create your own dataset & fine-tune a model.

:: 3 ::
Build your own models.

AIxAnimation _ AIxDesign & Sublab _ <Story&Code>

PROMPT ENGINEERING & PARAMETERS

/////////// POINT OF VIEW ///////////

>>>

WATCH FABIAN MOSELE'S COMMENT ON THEIR PROMPT ENGINEERING PROCESS

> Order matters. Keywords earlier in the prompt usually weigh stronger.

> Learn from those that came before you - there's tons of YouTube videos and Reddit subs of people sharing what they know.

> A go-to format for text prompts is: [type] + [subject / object / scene] + [style] + [resolution / dimensions].

> Do not expect to be good from the start be patient. It's a skill that takes trial & error and time to develop.

So here's one of my earliest experiments I did, and one thing I got out of it is that color plays an important role.

May 23rd 2023

> Seemingly tiny and insignificant changes can have a huge impact on the output. Iterate in small steps so you can observe the impact and direct accordingly.

> Start with the default settings on parameters as they're often favourable and you can set a baseline before tweaking.

> Do quick research to find suiting art & design terms to refer to the aesthetic you have in mind.

> Experiment with input images - using reference visuals for style or compositions to feed the machine.

> Take a few minutes to Google to learn about what settings like 'seed' and 'steps' mean instead of throwing darts in the dark.

> Parameters can be very sensitive. Going from values 0-1, even a 0.1 increase or smaller can produce a noticeably different result.

" I DON'T THINK OF THESE FRAMES AS FINAL OUTPUT, I'M MAKING THEM AS 'FOOD FOR AI', WONDERING WOULD THIS FRAME TRIGGER / PROMPT THE OUTPUT I'M GOING FOR? "
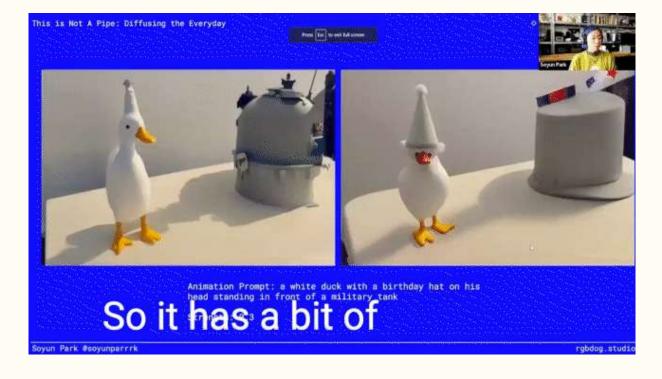
FABIAN ON THEIR PROMPT ENGINEERING PROCESS

EMBRACING GLITCHES & HAPPY ACCIDENTS

Encountering unexpected outcomes may provoke different responses. Are these what Bob Ross called a happy accident, a beautiful glitch, or is it merely noise?

"Pulling the levers, playing at the edge, subverting the defaults and embracing the glitch"

NADIA ON ATTITUDES TO WORKING WITH GENERATIVE AI MODELS

We don't make mistakes – we just have happy accidents.

We find joy of working with AI often hidden in embracing the unexpected, taking in unintended generations and embedding them as part of the story.

/////////// POINT OF VIEW ///////////

This is Not A Pipe: Diffusing the Everyday

So it has a bit of

>>> WATCH SOYUN SPEAK ABOUT PROMPTING AI TOOLS (IN THIS CASE STABLE DIFFUSION)

AIxAnimation _ AIxDe