

REAL-TIME CONSTRAINTS

23rd July - 30th September

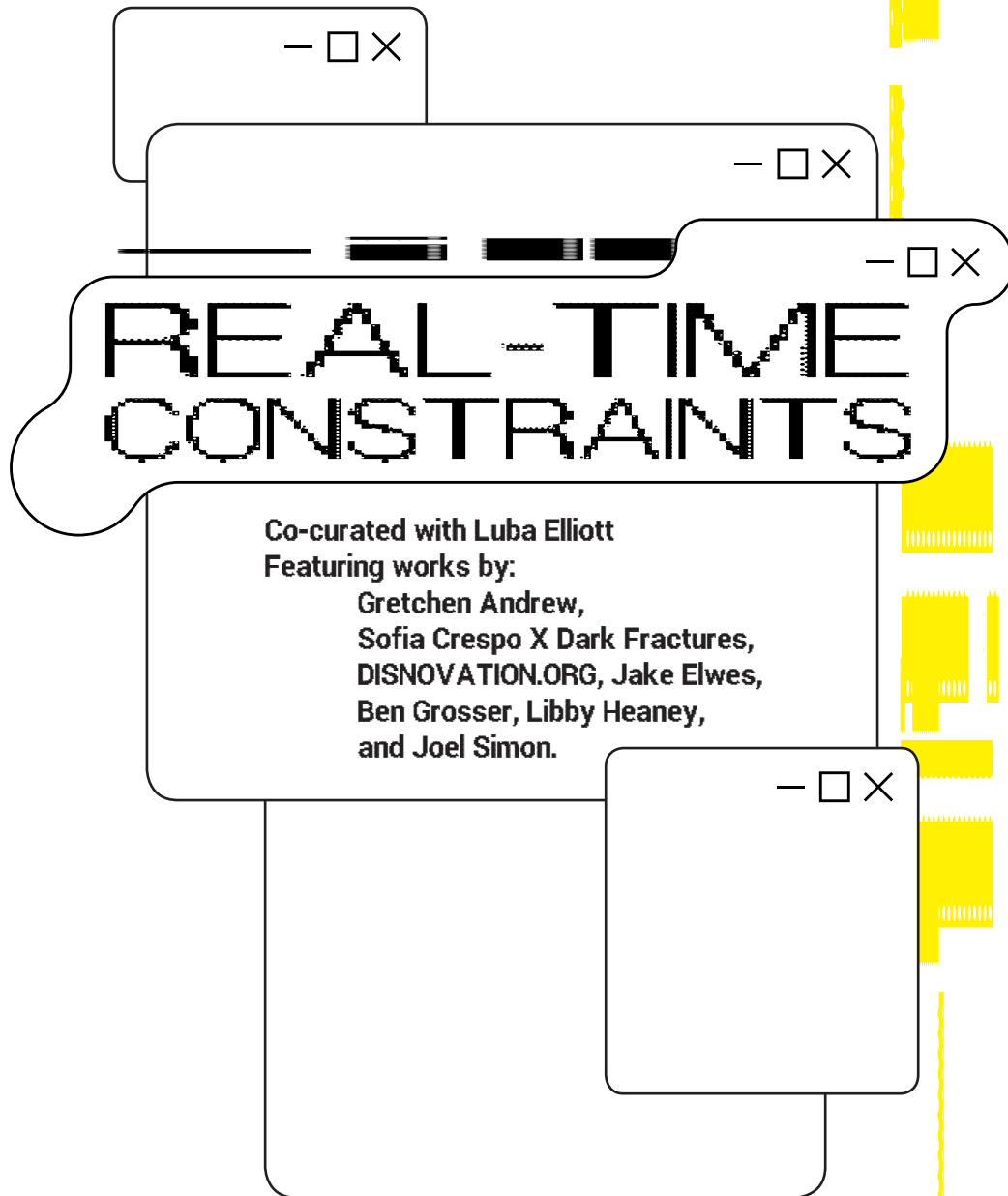
barblyte

Co-curated with Luba Elliott

Featuring works by:

Gretchen Andrew,
Sofia Crespo X Dark Fractures,
DISNOVATION.ORG, Jake Elwes,
Ben Grosser, Libby Heaney,
and Joel Simon.





Real-Time Constraints is a group exhibition featuring works by artists working within the realms of artificial intelligence, algorithms, machine learning, big data, and interventions in web-based platforms. The exhibition brings forward the complexities of the present-tense in light of the emergence of such technologies through works which are generated using real-time information pulled from the internet, or other sources including news items, message exchanges, memes and image banks. The works look critically at the current state of automated and autonomic computing to provide alternative narratives to data-driven and algorithmic approaches, referencing fake-news, gender bias and surveillance.

Taking the form of a browser plug-in, the exhibition reveals itself as a series of pop-ups where the works are disseminated over the duration of a typical working day, interrupting the screen to provide a 'stopping cue' from relentless scrolling, email notifications and other computer-centered, interface-driven work. *Real-Time Constraints* presents itself as a benevolent invasion - the size, quantity, content and sound of the pop-ups have been decided upon by each artist to feed into the networked performance. The exhibition is experienced through a synchronised global approach where viewers encounter the same pop-ups at the same time no matter where they are, amplifying the exhibition's disturbance of mundanity across every time zone.

Real-Time Constraints makes its primary argument through a reconfiguration of the usually annoying and uninvited browser pop-up, turning what is typically a tool of the system (and its owners) into a user-centric 'stopping cue.' Stopping cues were most prevalent in the 20th Century as a way to signal the end of something, the space in between one activity and the next. Stopping cues imposed a choice for the viewer: do you want to continue watching/reading/listening, or do you want to do something else? They also make available the mental space one needs to digest what they've just experienced, enabling useful processing of information, and thus, satisfaction through action.

The way we consume media today is such that there are no stopping cues, there is no design in place that allows us to question our behaviour; social media applications, news sites, streaming services, email and

messaging services are a bottomless source of mindless scrolling. — □ × *Real-Time Constraints* invites critical reflection on the systems and processes we're embedded in all day long and allows viewers to take a break from the animated bombardment of working online, albeit unannounced, to be a welcome distraction.

Ben Grosser's work *Tracing You* presents a website's best attempt to see the world from its visitors' viewpoints. By cross referencing visitor IP addresses with available online data sources, the system traces each visitor back through the network to its possible origin. The end of that trace is the closest available image that potentially shows the visitor's physical environment. *Tracing You* provokes questions surrounding accuracy of data sources, the locality of visitors and how a computational system analyzes this, why that system might want to "see" a visitor's environment, and about who (or what) is reading the web.

In Libby Heaney's *Elvis*, we are presented with the current possibilities of deepfake technologies, which the artist employs here to portray herself as Elvis and Elvis as herself. At first glance, we assume that the screens show the original Elvis, but as we look closely we recognise some of Libby's features. These portraits present a non-binary Elvis, imagining the singer as a womxn. The artist explores the nature of gender, performativity and consumption through digital technologies, as well as subverting the notions of the male genius.

Sofia Crespo's *Artificial Remnants* is an ongoing exploration of artificial life using machine learning to generate new insectile species from real-world datasets. Questioning how we engage with the rich diversity of the natural world in virtual, digital space, the work celebrates natural diversity of insectile life in the form of creating new specimens that are digital natives. The work addresses the vulnerability of non-human species and the need for mapping them, and archiving them, before it's too late.

In *Zizi*, Jake Elwes presents a procession of faces of drag artists in constant transition generated from data using machine learning. Drag is a queer performance form that celebrates and challenges gender and otherness and Zizi's gender, identity, race, whether they are real or artificial, is all uncertain. The work tackles the lack of representation in datasets often

used by facial recognition systems, and disrupts these systems — □ × by retraining them with the addition of drag and gender fluidity. This causes the weights in the neural network to shift away from the normative identities it was originally trained on. Here the constraints around representation are lifted, celebrating difference and ambiguity within bodies as well as questioning bias in our data driven society.

DISNOVATION's *Predictive Art Bot* generates new concepts for artworks based on current media discourse from diverse fields including politics, environment, culture and health. The bot is powered by an algorithm that identifies and combines keywords to come up with concepts for artworks in a fully automated fashion. These concepts range in style from the prophetic to the absurd, encouraging unusual associations of ideas and breaking through echo chambers by automating the human creative process.

With *GANbreeder*, Joel Simon enables the audience to take part in making AI art collaboratively in real-time. The tool allows users to pick images as 'parents' from which new images are generated. These can then be shared so that others can use them to make further images. *GANbreeder* explores the notions of authorship, creativity and collaboration through a straightforward interface that is designed to enable anyone to contribute, enrich and promote the art breeding mechanism and its associated community.

Search Engine Artist and Internet Imperialist Gretchen Andrew, best known for her playful hacks on major art world institutions, unveils a new series of work that actively reprograms the artificial intelligence underlying the global internet. These new works, referred to as "vision boards," appear as top search results through her unique process of using the failures of the internet to make her own dreams come true. AI is inherently backward-looking and susceptible to being reprogrammed through knowledge of the internet's structure, and Gretchen exploits this by rewriting existing representations of reality by using a search engine's own rules and limitations against itself.

With special thanks to digital designer Rob Prouse who programmed the browser extension.

GRETCHEN ANDREW — □ ×

Gretchen Andrew (born in California, 1988) is a Search Engine Artist and Internet Imperialist who programs her vision boards to manipulate the internet with art and desire. She trained in London with the artist Billy Childish from 2012-2017. In 2018 the V&A Museum released her book *Search Engine Art*. Gretchen's work has recently been featured in *The Los Angeles Times*, *Artnet News*, *Dazed*, *Hyperallergic*, *Artillery* and *The Financial Times*.

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— □ ×



The Next American President (Vision Boards) — □ ×

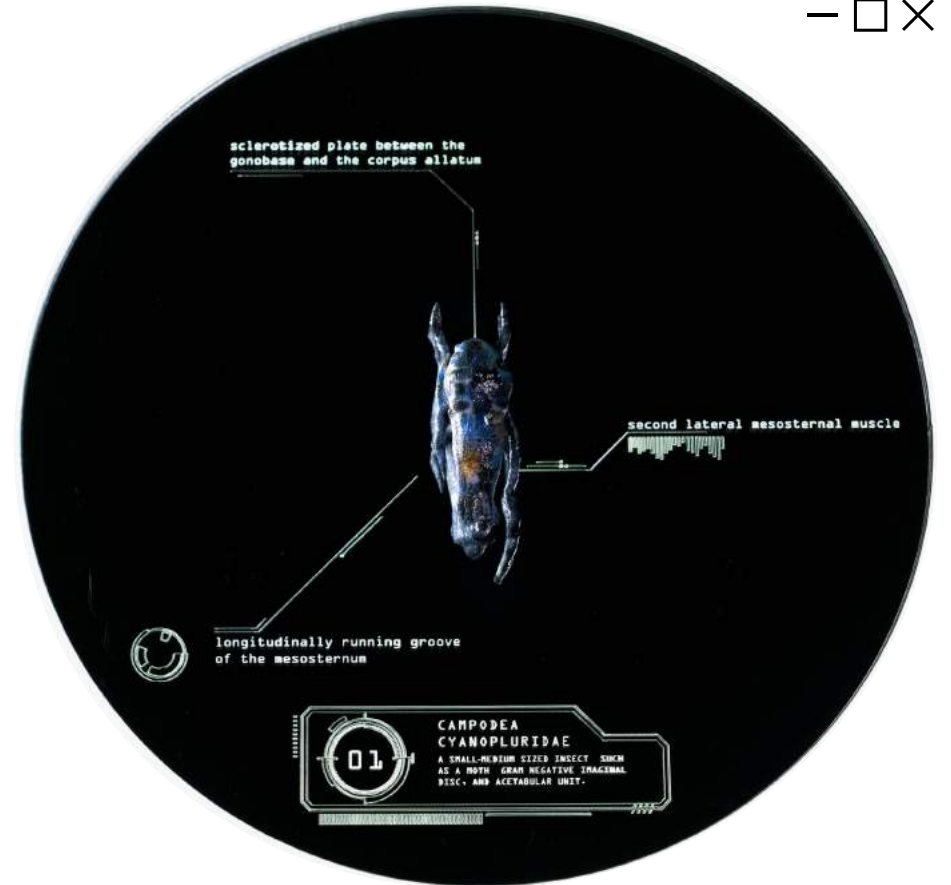
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Using the internet's inability to parse desire, she turns her own hopes for the Next American President into a manifested reality (hint: Google “The Next American President” and select images). The feminine and trivialized materials of Gretchen's vision boards clash with the male-dominated worlds of AI, programming, and political control in the digital age.

SOFIA CRESPO X DARK FRACTURES — □ ×

Sofia Crespo is an artist working with a huge interest in biology-inspired technologies. One of her main focuses is the way organic life uses artificial mechanisms to simulate itself and evolve, this implying the idea that technologies are a biased product of the organic life that created them and not a completely separated object. On the side, she is also hugely concerned with the dynamic change in the role of the artists working with machine learning techniques.



Artificial Remnants — □ ×

This project is part of an ongoing exploration of artificial life using machine learning to generate insects as well as their names and anatomical descriptions. The intention is to celebrate the natural diversity of insectile life, not through the precise, sterile digital reproduction of it, but in the form of new specimens that are digital natives. These do not attempt to impersonate existing insects, but rather embody an insectile “essence” born from the training of machine learning algorithms upon datasets of existing insects leading to novel, non-human understandings of the natural. Their diversity and decidedly digital qualities are in complementary contrast to the unsurpassable creativity of natural selection but can act as a prism with which approach new perspectives and appreciation of the vulnerable, non-human world we too often take for granted.

DISNOVATION - □ ×

DISNOVATION.ORG's Predictive Art Bot generates new concepts for artworks based on current media discourse from diverse fields including politics, environment, culture and health. The bot is powered by an algorithm that identifies and combines keywords to come up with concepts for artworks in a fully automated fashion. These concepts range in style from the prophetic to the absurd, encouraging unusual associations of ideas and breaking through echo chambers by automating the human creative process.

DISNOVATION.ORG is a working group at the intersection of contemporary art research and hacking. They develop situations of disruption, speculation and debate, in order to question the dominant techno-positivist ideologies, and to stimulate post-growth narratives. They edited The Pirate Book, an anthology on media piracy. Their research includes artworks, curation and publications. In 2018 they received a Design Trust Grant (Hong Kong) for research about China's Shanzhai Culture. They are currently visiting researchers at The University of California, Irvine.



The Satanic Temple is thinking about suing Twitter over "religious discrimination"
FOX NEWS



Experiments Show The Effects of a Fourth Spatial Dimension
BUSINESS ALERT



Apple under fire in France for "planned obsolescence," could face big fines
FOX NEWS

SUBSTRACT THE RELIGIOUS DIMENSION OF PLANNED OBSOLESCENCE

17/01/2018 17:18:30



Artist Transforms Toys Into Post-Apocalyptic Monstrosities [Pics + Videos]
WEEKS AND SECS

FUTURISM

NASA Is Using Machine Learning to Identify New Exoplanets
FUTURISM

APOCALYPTIC ALTERNATIVE TO MACHINE LEARNING

17/01/2018 17:14:55



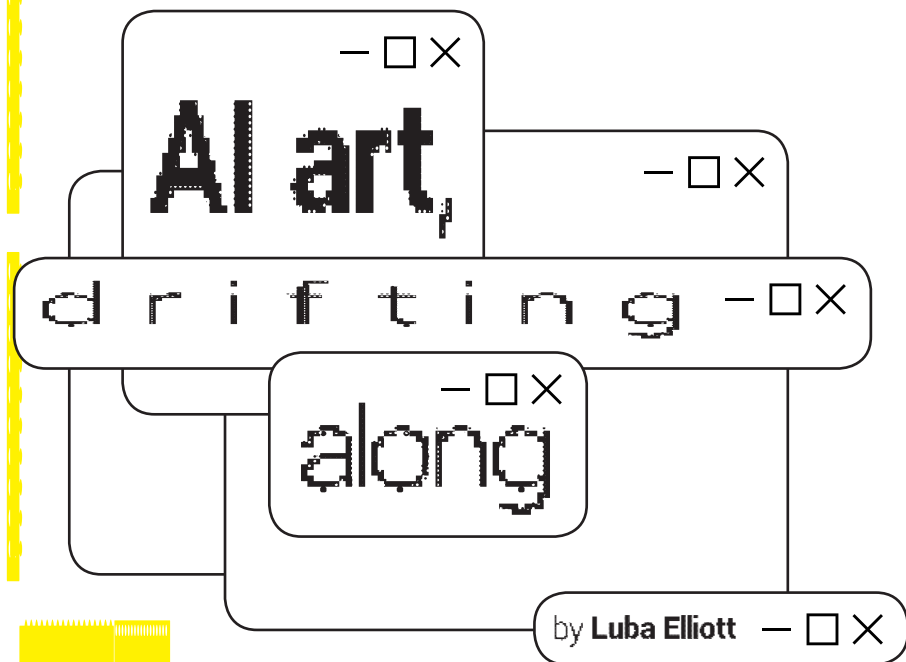
Predictive Art Bot - □ ×

Predictive Art Bot is an algorithm that turns the latest media headlines into artistic concepts.

In the age of hyperconnectivity, the perverse implications of media echo chambers are becoming more and more obvious. Groups of similar behaviors are being partitioned in filter bubbles, while the few massively reposted topics tends to monopolize most of the available attention. Such insular echo chambers strongly affect ways of thinking, resulting in increasingly homogeneous imaginaries within groups of like-minded people.

Predictive Art Bot caricatures the predictability of media influenced artistic concepts, by automating and skirting the human creative process. But beyond mere automation, it aims to stimulate unbridled, counter-intuitive and even disconcerting associations of ideas. To do so, it continually monitors emerging trends among the most influential news sources in fields as heterogeneous as politics, environment, innovation, culture, activism, or health... On this basis, it identifies and combines keywords to generate concepts of artworks in a fully automated way, ranging from unreasonable to prophetic through absurd. Each prediction becomes a thought experiment waiting to be incubated, misused or appropriated by a human host.

CONCEPTION: DISNOVATION.ORG
PROGRAMMING: JÉRÔME SAINT-CLAIR
NATURAL LANGUAGE PROCESSING, WEBSITE, INSTALLATION
PROTOTYPE | 2015-2018



It has been five years since DeepDream was released by Google, — □ × its distinct hallucinatory aesthetic captivating audiences, journalists and creators into this so-called new field of AI art. Of course, under various guises and in different communities, AI-related technologies have been employed by artists such as Harold Cohen and Ernest Edmonds decades prior. This time, the mainstream media met with excitement the colourful puppyslugs and the rhetoric of algorithms 'dreaming' up such creatures out of ordinary landscapes, oblivious to the history of computer art and fascinated instead by the deep learning revolution. It ushered in a new wave of artists eager to try their hand at whatever new technologies researchers from Google, OpenAI, NVIDIA and other labs may unleash.

Like with many new tools, the spectrum of communities experimenting with deep learning has been broad, each looking to coin, command and conquer a novel application. Research scientists, computational creativity academics, advertising creatives and artists from new media, fine and contemporary art began to engage with deep learning tools to generate images, texts and music in many a niche field. As AI research progressed,

it became possible to generate highly realistic human portraits — □ × with StyleGAN, produce poems with GPT-3 and make music with Jukebox. Meanwhile, tools like Runway and Wekinator made it increasingly easy for artists to incorporate machine learning into their work without being proficient in Python.

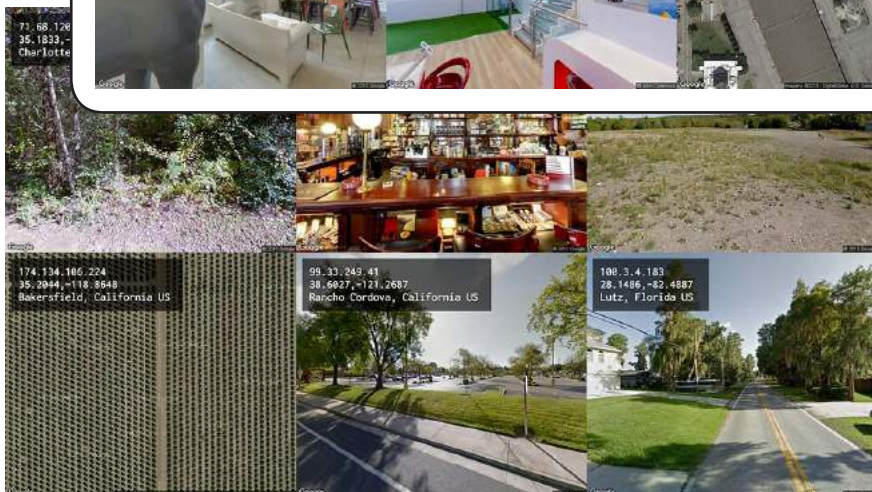
The question that now plagues many AI art aficionados is, what next? Now that the quality of generated images is photorealistic, the attraction of the glitch effect as a creative goal fades. The first GAN models, heralded as a major breakthrough in image generation, produced much better images than alternative methods, yet exhibited difficulties with the accurate placement of facial features and human limbs. What were considered problems in the benchmark-driven AI community became features to artists, who attributed the lopsided eyes and legs sticking out at odd angles as examples of algorithms being creative. With the rapidly improving models no longer able to offer these features, we realise the need to provide something more meaningful to capture the attention of an increasingly AI literate art audience, particularly as much of the low-hanging fruit has been picked. It is no longer enough to badly train a machine learning model on a found dataset online, even if it is a niche one - this has exhausted the minds of curators and journalists alike given the prolific experimentation back in 2015-2017. It is no longer enough for artists to plug in their artwork as data and comment on the algorithm's uncanny insights regarding their practice. It is no longer enough to give AI full authorship, driving eyeballs and clicks to any AI-related works initiated, managed and curated by a human.

As the field matures, new actors and new ideas appear. Fine artists engage with non-generative systems in their work, digital artists apply machine learning tools to underexplored mediums and computer scientists strive for both technical excellence and artistic novelty in their work. The AI art gold rush is waning off and that is a good thing: liberated from its frequent function as a PR gimmick for advertising clients and technology companies, AI art can now aspire to be considered on its own merit, competing alongside the full spectrum of contemporary art.

BEN GROSSER

Ben Grosser focuses on the cultural, social, and political effects of software. What does it mean for human creativity when a computational system can paint its own artworks? How is an interface that foregrounds our friend count changing our conceptions of friendship? Who benefits when a software system can intuit how we feel? To examine questions like these, he constructs interactive experiences, machines, and systems that make the familiar unfamiliar, revealing the ways that software prescribes our behavior and thus, how it changes who we are.

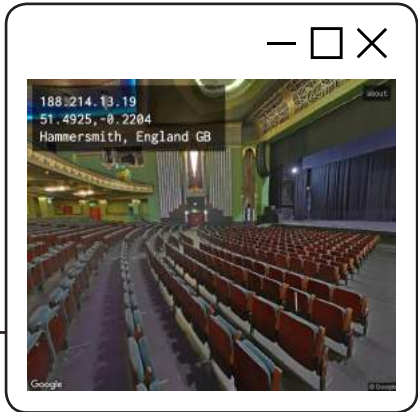
Grosser's works have been exhibited at major international venues, exhibitions, and festivals, including Eyebeam in New York, Arebyte in London, Museu das Comunicações in Lisbon, Museum Kesselhaus in Berlin, FILE in São Paulo, Digital Arts Festival in Athens, Pikelin Bergen, WRO Media Art Biennale in Wroclaw, Science Gallery in Dublin, Museum Ludwig in Cologne, Kunsthaus Langenthal in Switzerland, and Galerie Charlot in Paris



Tracing You

Tracing You presents a website's best attempt to see the world from its visitors' viewpoints. By cross referencing visitor IP addresses with available online data sources, the system traces each visitor back through the network to its possible origin. The end of that trace is the closest available image that potentially shows the visitor's physical environment. Sometimes what this image shows is eerily accurate; other times it is wildly dislocated. What can a computational system know of our environment based on the traces we leave behind? Why might it want to see where we are? How accurate are the system's data sources and when might they improve? Finally, what does this site's attempt to trace its visitors reveal about who (or what) is reading the web? By showing how far it sees in real-time, Tracing You provokes these questions and more.

Every time you visit a website, the computer serving that site records data about the visit. One piece of that data is the visitor's Internet Protocol (IP) address. A numerical string (e.g. 203.0.113.4), the IP address uniquely identifies the device used to view the site, whether it's your phone, laptop, or tablet. Every IP address is registered with the Internet Assigned Numbers Authority, and thus has data associated with the registration. Tracing You starts with this IP address and follows the trail it leaves. First it looks up the IP address using ipinfo to obtain geolocation. This is represented as a latitude/longitude pair (e.g. 48.8631831,2.3629368) that identifies a precise location on the earth. The latitude/longitude is sent to Google, where it queries the Street View, Static Maps, and Javascript Maps data services. Using these services, Tracing You searches for the closest available match it can find, whether it's a street image in front of the location, an interior image inside the location, or, if nothing else, a satellite image from above (e.g. many locations in China). Once found, this image is combined with text information from ipinfo and shown on the Tracing You interface. These queries happen so quickly that when you look at the Tracing You interface you should see an image related to you. You will be the site's most recent visitor at that moment. The image you see may be very close to your current location, or even photographed from within the building you are in at that moment. Alternatively, the image may be down the block, a few blocks over, or even further. How close it gets is very much dependent on how networks are built, configured, operated, and distributed where you are, which network you use, and the accuracy of the data associated with those networks. The more you look at the site, the more it looks back at you. Big data is continually refining its "picture" of the world. As that picture becomes more resolved, Tracing You will get more accurate. As new data sources become available, I will integrate them into the work.



Libby Heaney's moving image works, performances and participatory & interactive experiences span quantum computing, virtual reality, AI and installation.

LIBBY HEANEY

Heaney's practice seeks to subvert the capitalist appropriation of technology, the endless categorizations and control of humans and non-humans alike in pursuit of neverending profits, causing accelerating alienation, prejudice and division (as well as an ever increasing depletion of resources). Instead, Heaney uses tools like machine learning and quantum computing against their 'proper' use, to undo biases and to forge new expressions of collective identity and belonging with each other and the world.

Heaney's work uses diverse media & modes like blurring, combining, remixing, weaving (derived from quantum physics) to unsettle or 'diffract' standard conceptions of 'truth'. From these foggy modes emerge strange new forms that question the distinction between fake & real, visible & invisible, private & public, the individual & the collective especially where those categories are mediated by technology.

Working, for the most part, at the intersections of quantum physics, machine learning & the visual, these disparate antecedents are employed & deployed to question orthodoxies—from received ideas about gender & genius, to pop culture & class, alienation & solidarity, contemporary current political systems & rhetoric, nations & nationalism, science & art, and desire in the digital age—and explore alternatives.

Her projects speak to the entanglement of personal & machine agency where the power of the participatory & the collective presents a possible alternative to the hostility of state surveillance, corporate data mining, & the quantum arms race.

Ostensibly disparate, divergent, and wide-ranging, the works guiding questions include: what would it look like if art were able to interrupt the pace of technology to pose questions about its ethics? and how can humans and non-humans join together to co-author positive futures?



Elvis

Elvis is a two channel video portrait of the artist as Elvis and Elvis as the artist. The work uses a machine learning technique known as deep fake face swap. Since Elvis and Libby have different facial structures, there's a subtle blurring of identity - a non-binary Elvis - an uncanny hybrid of them both. Audience members come to the piece with the assumption that both screens are showing the original Elvis, but then notice the differences due to the deep fakes. The piece highlights the constructed nature of gender, particularly in relation to recent digital technologies. The work questions the notion of male author genius and also talks about our desire and consumption around the cult of celebrity. Elvis invites the audience into a reimagined history where the King of Rock and Roll was actually a woman.



From pop-up ads

to behavioural capitalism:

how invisible infrastructure
has changed the way we consume

by Rebecca Edwards

Pop-up advertisements first appeared in the late 90's¹ on the free web-hosting site *Tripod.com*, a web-hosting service aimed at younger graduates and one of many sites at that time helping in the construction of online communities.² Conceived as a solution to the problem of unsavoury and/or unrelated content appearing on client's websites, pop-ups enabled the client to have all the benefits of advertisement revenue, with less of the stigma of what those adverts might contain. In other words they removed or at least mitigated the client's responsibility from what the pop-ups might well be trying to sell or at least advertise directly to site visitors. Pop-ups also allowed for web traffic to be contained within the client website, which became increasingly more important to dot-com businesses and e-commerce with the implementation of SEO tools around the mid 90's. By appearing in a separate browser window, pop-ups would no longer be read as entirely integral to the client website and as such it's reputation was no longer undermined. To this day pop-ups remain widely acknowledged as a nuisance to the 'internet

¹ Banner ads however first appeared in 1994 on the online magazine Hot Wired: P. 209, Naren Nath (2020). *The consumer revolution : tipping the balance of power.* Los Angeles: Sage Publications.

² Ethan Zuckerman, the man responsible for coding the first pop-up, has apologised for the unforeseen nuisance that pop-ups have evolved into in an article for *The Atlantic* called *the Internet's Original Sin* - <https://www.theatlantic.com/technology/archive/2014/08/advertising-is-the-internets-original-sin/376041/>.

experience', being something intrusive, clickbaiting and generally misleading.³ In the heyday of pop-up advertising it was common to encounter excessive amounts of pop-up content, at times rendering those websites as almost unreadable.

Any study of the creation and development of the pop-up phenomenon must begin with Ethan Zuckerman, heading the Center for Civic Media at MIT and subsequently employed as a designer/programmer for Tripod.com. Although believing in the ethos of the early internet adopters, seeing it as a "global public square", Zuckerman was nevertheless wary of creating sellable ads to fund Tripod's free web-hosting service. Tripod had previously employed a number of revenue streams to keep it's business afloat, including (inter alia) selling merchandise directly, a subscription service and also a paid-for magazine, but the most lucrative income stream was unsurprisingly found in advertising. This ad-based business model still dominates the Internet today, which evolved alongside with how the Internet is currently used to utilise data and other analytics to provide more "targeted ads" - more on that soon. Today there are

³ Of course, pop-up advertisements, and online advertisements in general, have since shifted to become more related to a user's typical online behaviours or interests in the form of 'surveillance capitalism' which will be discussed later in the text.



Image credit: Wiki Pics - http://sh.wikipedia.org/wiki/Datoteka:Pop-up_ads.jpg#/media/File:Pop-up_ads.jpg

many more ad-based business models, all with varying levels of price, size, and scale. Currently the most widely used model is social media advertising which in 2018 surpassed the \$100billion mark in the US alone.⁴ The prevalence of Internet advertising is something Zuckerman, and others, have described and defined as causing the death of the internet - in other words “the fallen state of our Internet is a direct if unintentional consequence of employing advertising as the default model to support online content and services.”⁵ This default model of financial support for businesses across the internet has undoubtedly shaped the evolution of ecommerce and the inherent consumerist tendencies of populations grounded on capitalist economic policies.

In the early 1990's targeted adverts were at best rudimentary in function - often based on broad assumptions of what a given audience might find appealing. Writing in *Security for Software Engineers* (2018), James N. Helfrich stated that as little as three years after the first pop-up advertisement was created all major web browsers included functionality to limit or eliminate pop-up ads entirely. The ads of this era were clumsy, pervasive and often unrelated to the needs of the consumer. Advertising directed at the public would need to become smarter, and less intrusive, to convert potential consumers into actual physical sales. In the early 2000's companies took browsing habits, together with other related data, all collected from users via cookies, to attempt to personalise ads by interpreting these superficial data points. With this newfound proof of search history and consumer habits the ads were less about assumption and more about predicting and personalisation - this prediction providing estimates for object desirability, services and consumables for every site visitor and provided in a way which sought to reduce the consumer's time spent searching for items or services.⁶ They were handed what they wanted on a silver platter, often before they even knew they wanted it.

⁴ Graham, M. (2019). Digital ad revenue in the US surpassed \$100 billion for the first time in 2018. [online] CNBC. Available at: <https://www.cnbc.com/2019/05/07/digital-ad-revenue-in-the-us-topped-100-billion-for-the-first-time.html>.

⁵ Krishna, G. (2015). *The Best Interface Is No Interface: The simple path to brilliant technology* By Golden Krishna. P.54.

⁶ This predictive analysis is seen mostly across large ecommerce companies like Amazon and eBay, but is also used in healthcare to predict sickness of patients, on entertainment sites like Netflix, and in cybersecurity to detect fraud.

Today, this type of insidious predictability within targeted ads is linked to what Shoshana Zuboff has termed ‘Surveillance Capitalism’. Put simply, surveillance capitalism is a new term founded on predictive algorithms in tandem with mathematical calculations monitoring or predicting human behaviour. In an interview with the Guardian last year, Zuboff stated that “surveillance capitalists sell certainty to business customers who would like to know with certainty what we do. Targeted adverts, yes, but businesses also want to know whether to sell us a mortgage or insurance, what to charge us, do we drive safely? They want to know the maximum they can extract from us in an exchange.”⁷ This extraction and distillation of human interaction with online platforms - be it via mouse or keyboard clicks, textual exchanges or pattern recognition of browsing habits - is all shrouded in hyperbole and glossy imagery, and is an exchange with ramifications often only known by those who are privy to the underhanded algorithmic processes. The underhandedness within advertising culture oozes into the realm of propaganda and the ways that online media and advertising pioneers are now acting as a kind of incubator for psyops-style techniques for political campaigns, the obfuscation of news articles and videos, amongst many other things. Tactics used here are aimed at influencing emotions, reasoning, motives and behaviours, which are then weaponised by politicians and governments as a way of exerting control over their populations. The filter bubble is rife in these realms and has serious negative implications for civic discourse, and the ways governments and states function.

“The thing about predicting the future is that it always becomes a matter of controlling the future.”⁸

⁷ Zuboff goes on to write, “Surveillance capitalism unilaterally claims human experience as free raw material for translation into behavioural data. Although some of these data are applied to service improvement, the rest are declared as a proprietary behavioural surplus, fed into advanced manufacturing processes known as ‘machine intelligence’, and fabricated into prediction products that anticipate what you will do now, soon, and later. Finally, these prediction products are traded in a new kind of marketplace that I call *behavioural futures markets*. Surveillance capitalists have grown immensely wealthy from these trading operations, for many companies are willing to lay bets on our future behaviour.” Naughton, J. (2019). “*The goal is to automate us*”: welcome to the age of surveillance capitalism. [online] the Guardian. Available at: <https://www.theguardian.com/technology/2019/jan/20/shoshana-zuboff-age-of-surveillance-capitalism-google-facebook>.

⁸ 321HAU (2020). James Bridle – Other Intelligences // Spy on Me #2 Online Programme. YouTube. Available at: <https://www.youtube.com/watch?v=-S3rJnTxFoY> [Accessed 6 Jul. 2020].

Now that ads have become so entwined with digital content - through paid-for advertisements or recommendations posted by social influencers and lifestyle magazines - the way we purchase and consume is changing too.⁹ A report run by social media management platform Hootsuite in 2019 found that 130 million Instagram users tap on shopping posts every month¹⁰ which are targeted at the platform's 1 billion monthly users. Ranging from make-up and clothing, to cat blindfolds¹¹ sold by American e-commerce channel Wish, the report estimated that Instagram will earn \$12.32 billion from ad revenue in 2020. When Instagram stories launched in 2016, companies were able to infiltrate another level of 'scroll-time'; the video ads in stories often imitate the vernacular of popular influencers through colourways, shooting angles and editing techniques. In doing so, content and advertisements within social platforms begin to homogenise, lulling viewers into an autopilot state where consuming becomes the main purpose of their absentminded scrolling.

These shoppable ads are still a relatively new feature on Instagram but the traction they have gained shows a significant shift in the way we choose to purchase, or the ways in which we are made to purchase. Presenting advertisements to users in this way exacerbates the manner in which these social platforms are designed to keep us both hooked to the app, and within the app itself (similar to the way pop-up ads help to retain users on a website) - the new checkout feature on Instagram makes it possible to product purchase without ever leaving the Instagram interface. Although Instagram is certainly not the first to have enabled this - WeChat¹², Facebook Marketplace, and Depop have all operated in this way since 2011 or later.

⁹ advertising in the age of the pop-up was about interrupting you, jerking you out of whatever you were up to and wrenching your attention to the ad in the hope that you will buy what it offers. Whereas advertising now is about skipping the need for attention and operating beneath the level of our ability to notice it at all, advertising now almost needs to be invisible in order to be effective.

¹⁰ Hootsuite (2018). 24+ Instagram Statistics That Matter to Marketers in 2019. [online] Hootsuite Social Media Management. Available at: <https://blog.hootsuite.com/instagram-statistics/>.

¹¹ Image available here - 2oceansvibe.com. (2015). [online] Available at: <https://media.2oceansvibe.com/wp-content/uploads/2017/12/Screen-Shot-2017-12-14-at-11.14.49-AM.jpg> [Accessed 18 Jun. 2020].

¹² WeChat is a Chinese messaging, social media and mobile payment app developed by Tencent. It was first released in 2011 and now has over 1 billion monthly active users.

Image credit: Photo illustration by The Daily Beast - <https://www.thedailybeast.com/facebook-s-algorithm-hijacked-this-dollar8-billion-company-to-sell-cat-blindfolds>



How information is consumed today, either by images and video content or via digital platforms, is such that there is no time for us to stop and think about our actions, there is no design in place allowing us to question our behaviour. No curtain call, no blank space, no prompt for a change of pace or scenery. Social media applications, news sites, streaming services, email and messaging services are all bottomless sources allowing mindless scrolling, and it is within this scrolling, clicking and watching that we become trapped in a never ending loop of the architecture of capitalist monopolies.

In this landscape where cultural consumption has seamlessly converged with aspirational ideology, the pop-up presents a welcome disruptive potential. Clunky and often poorly designed and executed, the pop-up is the obnoxious ancestor of Surveillance Capitalism. What ultimately made the pop-up so repellant is that it created a break in immersion, causing the user to disconnect from the immediate interface of a website and thus detach from it's content. The pop-up therefore is worth commemorating for the unruly power it possesses: although created to aid the flow of consumerism, it is perhaps better suited as a new stopping-cue tool, one to create blockages, disruptions and jarring breaks from the seamlessness of consumerism as we experience it today.

JAKE ELWES

Jake Elwes is an artist living and working in London. His recent works have looked at machine learning and artificial intelligence research, exploring the code, philosophy and ethics behind it. In his art Jake engages with both the history and tropes of fine art and the possibilities and consequences of digital technology. He graduated with a BA in Fine Art from the Slade School of Fine Art (UCL), London in 2017.

Jake's work has been exhibited in museums and galleries internationally, including the ZKM, Karlsruhe, Germany; TANK Museum, Shanghai; Today Art Museum, Beijing; CyFest, Venice; Edinburgh Futures Institute, UK; Zabudowicz Collection, London; Frankfurter Kunstverein, Germany; New Contemporaries 2017, UK; Ars Electronica 2017, Austria; Victoria and Albert Museum, London; LABoral Centro, Spain; Nature Morte, Delhi, India and the Centre for the Future of Intelligence (CFI), UK.



Zizi - Queering the Dataset

Zizi is a procession of faces of drag artists in constant transition generated from data using machine learning (1). Drag is a queer performance form that celebrates and challenges gender and otherness. It's loud, bold and beautiful. Zizi's gender, identity, race, whether they are real or artificial, is all uncertain.

Zizi tackles head-on the lack of representation in the training datasets often used by facial recognition systems. Zizi disrupts these systems by retraining them with the addition of drag and gender fluidity. This causes the weights in the neural network to shift away from the normative identities it was originally trained on.

The work is a celebration of difference and ambiguity, which invites us to reflect on bias in our data driven society. If AI holds a mirror up to society, then Zizi applies the makeup.

(1) A Style-Based Generator Architecture for Generative Adversarial Networks (2019)

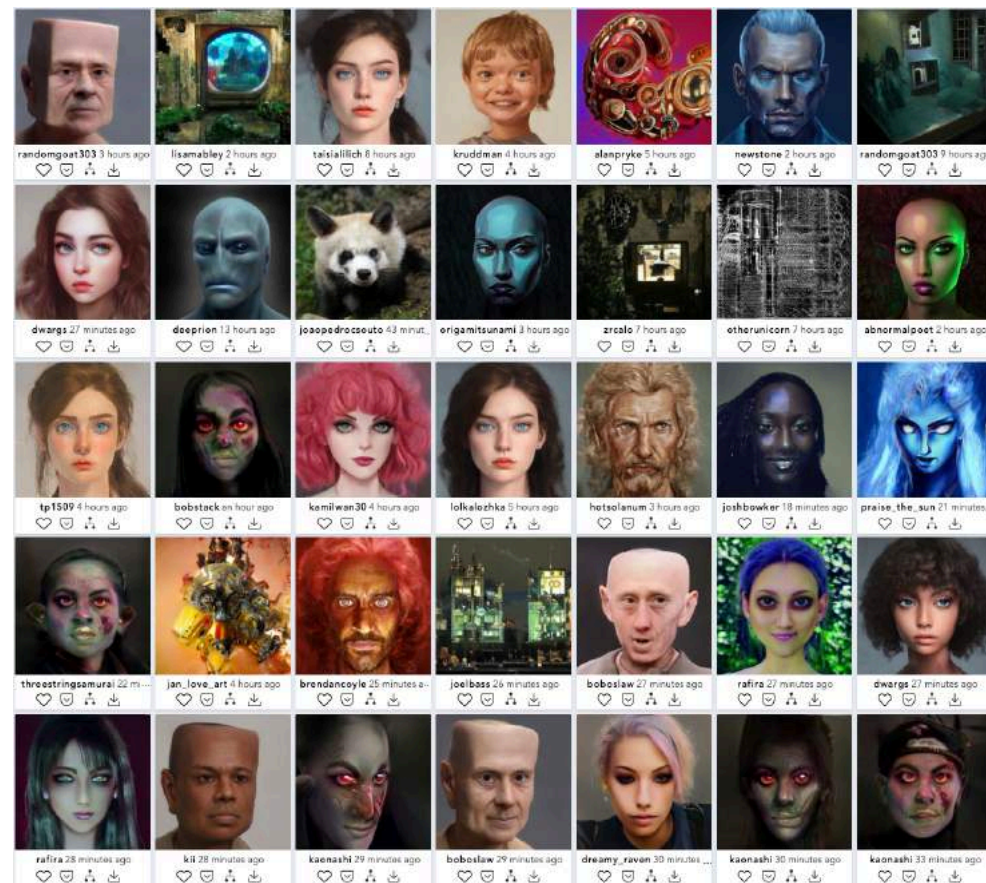
Instagram [@zizidrag](#) - machine learning generated captions trained on drag profiles.

Zizi was originally commissioned as a seven channel video installation by Experiential AI at Edinburgh Futures Institute and Inspace.

Presented as site specific video installation with between 3 and 10 projected video channel.

JOEL SIMON - □ ×

Joel Simon is a multidisciplinary artist and toolmaker who studied computer science and art at Carnegie Mellon University before working on bioinformatics at Rockefeller University. He is currently pursuing Morphogen, a generative design company and developing Artbreeder, a massively collaborative creative tool and network. His works are somewhere in the region between art, design and research and inspired by the systems of biology computation and creativity.



Ganbreeder - □ ×

Ganbreeder is a collaborative art tool for discovering images. Images are 'bred' by having children, mixing with other images and being shared via their URL. This is an experiment in using breeding + sharing as methods of exploring high complexity spaces. GAN's are simply the engine enabling this. Ganbreeder is very similar to, and named after, Picbreeder. It is also inspired by an earlier project of mine Facebook Graffiti which demonstrated the creative capacity of crowds. Ganbreeder uses these BigGAN models and the source code is available.

Luba Elliot

Luba Elliott is a curator and researcher specialising in artificial intelligence in the creative industries. She is currently working to educate and engage the broader public about the latest developments in creative AI through talks, workshops and exhibitions at venues across the art and technology spectrum including The Photographers' Gallery, Victoria & Albert Museum, Seoul MediaCity Biennale, Impakt Festival, Leverhulme Centre for the Future of Intelligence, NeurIPS and ICCV. Her online curatorial projects include aiartonline.com and computervisionart.com. She has advised organisations including The World Economic Forum, Google and City University on the topic and was featured on the BBC, Forbes and The Guardian. Recently, she was part of the Lumen Prize selection committee. Previously, she worked in startups and venture capital and has a degree in Modern Languages from Cambridge University.

arebyte Gallery

arebyte is a London-based art organisation which supports the development of contemporary artists working across digital and emerging artforms. Following in the long tradition of artists experimentation with new technologies, arebyte Gallery, has led a pioneering programme since 2013, to much acclaim. The gallery commissions new works from emerging, as well as more established artists, across the UK and internationally, supporting multiple voices in digital culture, and bringing innovative perspectives to art through new technologies.

arebyte.com

arebyte 2020 Programme

SYSTEMS

arebyte's 2020 programme takes the notion of Systems as its point of departure. Systems discusses the erratic interplay between the systems we encounter on a daily basis, and how we might use parts of these systems to reconfigure our understanding of the world. From global infrastructures of economics and finance, to organic and environmental systems of growth and reproduction; from computational and technological systems, to collaborative and interdisciplinary systems of discourse and pedagogy, the way our world functions will be brought into conversation, opening up a dialogue for critique and exchange.

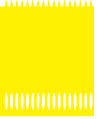
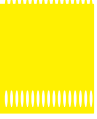
Continuing from the 2019 theme Home, Systems invites artists to respond to the networks and structures at play in the digitised world. The networks which have become carriers for emotional, political and ecological agendas are critiqued through group exhibitions, residencies, off-site projects and newly commissioned work.

The networks we live among are "sites of exchange, transformation, and dissemination... conveying a sense of a spare, clean materiality" *, but they're also part of a larger world-system, convoluted and undefined through the proliferation of information and opposing agendas. These networks that have become so entangled and entwined with everything we buy, consume, read, think and act upon are broached in Systems through cryptocurrency and sovereignty with Helen Knowles; through data packets, point-to-point latency and internet protocol with Olia Lialina; through software subculture and open sourcing with Alan Warburton; through emergent technologies, creative Artificial Intelligence and algorithms with Luba Elliott; and through discourse surrounding the artist residency and intervention within the physical and virtual gallery space with Going Away.tv, Goldsmiths University Computational Arts Department and AOS (arebyte on screen).

The artists in Systems confront our current world systems of varying scales, and posit alternative ways of thinking about the underlying systems present throughout our histories, presents and futures.

* N. Katherine Hayles, **Cognitive Assemblages: Technical Agency and Human Interactions** (Critical Inquiry Vol 43, no. 1 Autumn 2016) p32-55

2020
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