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Outsmarting the algorithm or leaving the grid through surveillance activism

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Abstract

Privacy feels like a distant memory since it is virtually non-existent nowadays. Cameras are all around, though we are not only visually monitored from any possible angle, but also with every movement and every trackable parameter. Faced with the feeling of being transparent and constantly recorded by various systems, the idea of becoming invisible is explored: finding inspiration from the ways that artists have tackled the issue of surveillance in their work – being exposed and evading it. Discussing artistic approaches as a means of raising awareness and exploring strategies to outsmart the algorithms can offer us alternative ways of existing outside the world of electricity and its manifold constraints. As the issue has been around for some time, the introduced artistic positions span the past 50 years and allude to the fast-evolving technologies in artistic research projects but also performances and artworks, which appear aesthetically pleasing at first glimpse but are insinuating a much more severe topic. Artworks inside the museum or gallery space might be much more refined, although intervention in the public space may reach a wider and more diverse audience. Raising the question of the evaluation, interpretation and exploitation of the material, the current discourse around artificial intelligence comes to mind and specifically the implications of machine learning and image generation in regard to the authenticity of the image in general, precipitating a broader conversation on surveillance and its antidotes.

Keywords

surveillance art; control; observation; activism; CCTV (closed-circuit television) cameras

Engañar al algoritmo o salir del sistema a través del activismo de la vigilancia

Resumen

La privacidad parece un recuerdo lejano, ya que es prácticamente inexistente hoy en día. Las cámaras están por todas partes, aunque no solo se nos supervisa visualmente desde cualquier ángulo posible, sino también con cada movimiento y cada parámetro rastreable. Ante la sensación de ser transparente y estar constantemente grabado por varios sistemas, se explora la idea de convertirse en invisible: encontrando inspiración en las formas en las que los artistas han abordado el problema de la vigilancia en su trabajo –estando expuesto y evadiéndolo–. Hablar de enfoques artísticos como medio para aumentar la concienciación y explorar estrategias para engañar a los algoritmos puede ofrecernos formas alternativas de existir fuera del mundo de la electricidad y sus limitaciones de distribución. Dado que el problema ha existido durante algún tiempo, las posiciones artísticas presentadas abarcan los últimos cincuenta años y aluden a las tecnologías en rápida evolución en los proyectos de investigación artística, pero también a las performances y obras de arte, que parecen estéticamente agradables a primer golpe de vista, pero que insinúan un tema mucho más grave. Las obras de arte dentro del museo o del espacio de la galería pueden ser mucho más refinadas, pero la intervención en el espacio público puede llegar a un público más amplio y diverso. Planteando la cuestión de la evaluación, interpretación y explotación del material, el discurso actual en torno a la inteligencia artificial viene a la mente y, específicamente, las implicaciones del aprendizaje automático y la generación de imágenes con respecto a la autenticidad de la imagen en general, precipitando una conversación más amplia sobre la vigilancia y sus antidotos.

Palabras clave

arte de la vigilancia; control; observación; activismo; cámaras CCTV (televisión de circuito cerrado)

“Our society is not one of spectacle, but of surveillance”. Michel Foucault

1. Total transparency

The year is 2023. I feel transparent. Privacy hardly exists anymore. Even in the changing room of the department store or the swimming pool, I cannot help to check if a camera lens is pointing at me. Possibly through a semi-transparent mirror? No, it does not reinforce a feeling of security, just of being observed, monitored and tracked during all my actions. There is no way to escape. Our mobile devices share our locations, our likes and dislikes, our photographic impressions right on the spot. Echos and Nests are overhearing our conversations and do not only know when we need a distraction from the woes of late capitalism, either by shopping or by entertainment, but built-in Siris or Alexas are also knowledgeable of our family relations, health issues or travel plans.

Surely, I enjoy the convenience of boarding my flight with a scan of my face instead of searching for my passport and boarding pass, although at the same time, I am startled by the clandestine collection of my portraits. I appreciate that my exercise and vital data are recorded by an app and add my nutrition intake for a well-balanced lifestyle. While booking my flights, I do not mind that the provider knows my preferences and that there is no need to repeat it with every journey.

Somehow, I have the illusion that I could always opt out – but not with all that data that is collected by obscure institutions.

I remember how a significant part of the German population tried to resist the universal census in the 1980s – not as militantly opposed as the enumeration of 1911 was in the United Kingdom – while today they openly share all intimate details on social media. Since my next decisions are already anticipated, is it finally time to become invisible?

My inquiry will address artistic perspectives and procedures to handle the imminent total control of the surveillance state, but concurrently the option to leave the grid, to become a media artist without a palette, without any tool.

The meshes in the network are drawn nearer and tighter, ready to strangle everyone. Art is the best medium to address these issues and to raise awareness within a general audience.

2. Who is watching? Observing and being observed

Back to the year 2001. An exhibition visit to the ZKM, Center for Art and Media in Karlsruhe – then the Mecca for media art – had the anticipated effect, it caught my attention for surveillance: *CRTL [Space]. Rhetorics of Surveillance from Bentham to Big Brother* (and even beyond). Through diverse positions in the arts, I realized how transparent our lives are – and how little we know about the resulting footage and how

and by whom it might be used. Denis Beaubois addressed this consideration with his cheeky and ironic approach In the event of *Amnesia the city will recall...* (Sydney, Australia, 1996-1997). The artist positions himself in front of surveillance cameras and interacts through written notes (Figure 1). Initiating a dialogue with the camera, or better, with its invisible operator behind the lens, he requests the actual footage while having the movement of the surveillance camera filmed from various positions. Handwritten on a plain sheet of paper, he holds his plea in front of the lens and asks to nod, to move the camera up and down if agreeable. Beaubois points to the actual viewer behind the observing lens and invites us to reflect on the question of what exactly happens with the filmed material. Is someone really looking at all the collected footage? What actually will transpire? It is conceivable that in the 1980s and 1990s, security guards were actually looking at the screens, while today when we see them sitting in front of arrays of monitors, divided into split screens, they seem overwhelmed by the scope of their vistas. Anyway, with the vast amount of material, nowadays, the analysis and evaluation is done by machines that should detect irregularities – or “suspicious” individuals, items and actions.



Figure 1. Denis Beaubois in dialog with a surveillance camera: *In the event of Amnesia the city will recall...* Source: © Denis Beaubois (1997)

The question is what happens with the footage of us that is captured and all other individuals around us every time we step out of our homes, enter a public or semi-private space – that should be of concern. Harun Farocki shared in his movie *The Creators of the Shopping Worlds* (2001) how customer behaviour is recorded and analysed – mainly to optimize the shopping experience for more profit. Today, it should be common knowledge, though, in the year of its first screenings, it appeared scary, like a dystopian vision from science fiction movies. Since its formation, the huge, unmentionable American e-commerce company invested every effort into optimizing the online shopping experience as did the competition. Likewise, the American internet search behemoth collects data on every move of the mouse or all our fingertips, figuring out our innermost interests. Today, we tend to agree without hesitation to any terms and conditions of being observed, as there is hardly any other choice.

Even museum walls do not shield us from being followed. Already a century ago, museum studies observed the interest of visitors, their pace and routes by means of discreet followers equipped with pen and paper. The project *Traces* (2023) reveals how we could be tracked as museum visitors today; so far, it is an experiment that was initially pre-

pared as an art-installation by Bernd Lintermann. But soon, we will be observed and classified according to our art preferences, and museums might turn into user-optimized environments. With small LiDAR sensors positioned along the museum walls, our movements are recorded in 3D, our path through the individual exhibits and text panels. Halfway through the exhibition, an interactive terminal provides access to the information with a number for every person in the museum. While I was appreciating the installation, visitors took for granted without surprise that their paths and length of stay at each exhibit were tracked and played back.

The installation *Data | Traces* (2015) by Alex Wenger and Max-Gerd Retzlaff left the audience with a more profound impression and an uncanny feeling when the names of the logged network connections of the surrounding mobile phones were displayed, including my own uniquely named networks. It was simultaneously fascinating and frightening to see how easily the tracks of almost everyone could be gathered, including one's own. But this paradigm shift in authorship goes much deeper: the observer becomes also the observed.

The popularization of video in the late 1960s with Sony's PortaPak considerably democratized recording and editing practices, not only among artists. Since Vito Acconci pointed in *Centers* for 22:28 minutes at the inmost of his own reflection on a camera lens and recorded the act, the role of the looker-on and that of the looked-upon became indistinguishable and at the same time questionable. We watch our image in close circuit installations, at shopping malls or in gallery spaces with excitement but expect somehow that it will not get recorded, archived and presented to an unknown audience.

With his installation *Observing Observation: Uncertainty* (1974), Peter Weibel escalated this concept with three cameras pointed at the viewer in the center of a circle, who sees him- or herself on one of the surrounding screens – but never from the front – suggesting that “the observer cannot observe its own observation”.

Heiner Mühlenbrock was among the first filmmakers to use the footage of surveillance cameras and present these videos to a wider public. *Bildermaschinen* (1982) and from seven years later *Das eiskalte Auge* are compilations of footage from 40 CCTV cameras sourced from the International Congress Center in Berlin and accompanied by a soundtrack quoting genre movies.

The Surveillance Camera Players, as a group of performers, discovered institutional surveillance cameras as an audience by staging plays for them. Their adaptation of George Orwell's *1984* was presented to several CCTV cameras at the 14th Street/Sixth Avenue subway station in Manhattan in the 1990s. Their inspiration sprang from the TV sitcom *Taxi*, where in the episode “On the Job” (1981) two security guards were passing their time by performing in front of the cameras when no one else was watching.

In his experimental feature film *Timecode* (2000), Mike Figgis combined the footage of four cameras on one screen as a split-screen movie, appropriating the aesthetic of surveillance camera feeds in a feature

film with Hollywood actors. He allowed the audience to eavesdrop on each of the parallel sequences in the DVD version, passing the role of the CCTV operator to the viewer – though the movie theater version was played with an edited soundtrack to a submissive audience.

With all the cameras pointing at us, we could feel like Truman Burbank in *The Truman Show* (1998): surrounded by hidden cameras but not aware that anyone (or who) is watching. At least Truman figured out who his director was in the end – unlike me, subject to the whims of the unknown influencers next to me, who share my face on their public accounts as an unpaid extra at the exciting events or places they visit. In the age of *selfitis*, we never know which way the lenses are looking.

3. Becoming invisible

Accepting – and even sometimes enjoying the advantages of being observed – is one way to deal with the phenomenon. Outsmarting the onlookers or avoiding them altogether is another, but nowadays this is almost unfeasible in an urban environment.

The straightforward methods of protesters to deactivate CCTV cameras in the public space could almost be considered an artistic undertaking (Figure 2). Depending on the model and its location, the lens could be easily covered with black paint from a spray can or dismantled with a long stick. For other types, the covering glass domes had to be first smashed before the lens could be deactivated, approaching the subject from behind and confirming no other security camera was watching.

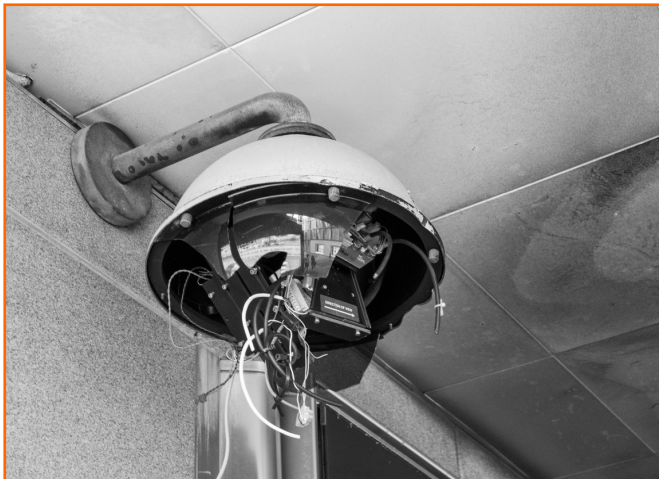


Figure 2. Deactivated surveillance camera during protests in Hong Kong (2019)

Source: © Elke Reinhuber (2019)

Yet there are much more subtle methods to avoid being seen. The anonymous activist group Institute for Applied Autonomy tackled the topic of cameras in public space through the ambitious effort of proposing routes through Manhattan including several detours to stay out of sight. In addition to a map with all CCTV locations in New York City at

that time, their *iSee* project (2001) was a web-based application that charted the location of closed-circuit television cameras. Adapted from actual observation data, *iSee* generated the paths through Manhattan that fell under the least attention and exposed the presence of electronic monitoring systems.

What might have been possible twenty years ago – finding a route without being recognized – nowadays sounds like a fairy tale from the past. China aims to include every centimeter of their major cities in the surveillance system. And besides that, by just carrying a mobile phone and using a bank card all our journeys become traceable anyway and are recorded in their entirety, which – unless we want to stay in a bunker or a hermitage – is hard to abstain from. Every choice we face, and every decision we make becomes part of a log to document our correct behaviour, evaluated against a social credit system and thus constituting our fates.

Hito Steyerl proposes in her video *How to Not Be Seen: A Fucking Didactic Educational .MOV File* (2013) strategies on how to become invisible while pointing to military surveillance techniques. The video emphasized the enhancement of aerial photographs and videos, as demonstrated with targets on the ground for calibration. By applying green paint on her face, she demonstrated the visual effects of merging with the background and expanded the effect with actors in green morphsuits. The chroma-keying technique is widely used in the movie industry, however, it is not applicable for avoiding cameras in real life, especially the ones equipped with thermal sensing or 3D motion detection.

Steyerl visually highlighted how the surveillance grid became tighter and tighter with the improvement of resolution – another aspect besides as well as with the sheer amount of cameras. In 1996, a pixel recorded from the air corresponded to twelve meters on the ground and seven years later to only 30 centimeters. With further advancements in imaging techniques, everyone may take a close look at their neighbour's ground or visit remote areas from above or walk along in 3D – even backwards in time on Google Earth.

The visual material is quite particular, so several photographers were using it as image source for screenshots. One of them is Michael Wolf, who collected *A series of unfortunate events* in 2010, initially recorded by Google's roving Street View car, then photographed from his computer screen as the coarse RGB grid reveals. Only the insufficient resolution protects the individuals from being recognizable while collapsing on the street, relieving themselves between cars, running into lampposts or being in other unpleasant situations. Making use of this novel source of image acquisition, he received an honourable mention at the World Press Photography Award in 2011. In other projects, such as *Tokyo Compression*, his captured commuters are mostly asleep and pressed against subway windows, therefore not immediately identifiable though captured through his camera lens without their consent. The regulations in regard to privacy and the artistic or commercial usage of those images on which our faces might appear *en passant* differ from country to country and are not, and most likely will never, be fully protected.

Even for law-abiding citizens, the volume of cameras in many cities is excessive. In response, Chicago artist Leo Selvaggio offered his own face to shield people's identities with a mask in his project *URME* (read: You are me) in 2014. Initiated as a Kickstarter campaign, anyone was invited to use the cardboard mask to hide behind his shielding flattened face. In his documentation, it seems to prove effective especially with larger groups of people, all hiding behind his cloned appearance. Today, with widespread 3D scanning and LiDAR techniques, Selvaggio expanded the disguise to a more sophisticated 3D print.

Around the same period of time, several art projects were created, suggesting methods to become untraceable. Simone C. Niquille created a clothing series in 2013 that tests the limitations of facial recognition software. She designed a series of shirts called *RealFace Glamouflage*. The multiple faces printed on the shirts were supposed to confuse the face recognition algorithm of the tracking systems.

With a similar concept, some works (2010-13) of Adam Harvey suggested the avoidance of surveillance techniques. He proposed a range of methods to camouflage the face through makeup or a hairdo and even to completely hide under a cover from thermal imaging. This was the aim of many projects a decade ago – not only for artists. Researcher Isao Echizen of Tokyo's National Institute of Informatics developed light-emitting glasses to avoid being recognized. Although these projects address the issue of being observed and tracked in an engaging manner, they do not provide realistic solutions, especially nowadays with advanced techniques for being recognized and followed in all our moves, desires and dislikes.

As machine reading and artificial intelligence took over, the perception and consequences of the captured material shifted – and so did the focus of artworks. Harvey developed in 2021 *exposing.ai*, a platform for checking whether one's Flickr images have been used to feed biometric libraries. Trevor Paglen refers to the origin of the first face recognition data set with the images of *It began as a military experiment* (2017). He selected ten portraits of employees from the United States Department of Defense's vast database. Only on a closer look, the enlarged faces reveal that they are not ordinary portraits. Small superimposed numbers mark the details that were relevant to train an algorithm for detecting individuals.

4. The camera as an artistic object

While all these projects inform and raise awareness for a dedicated audience – those who enter museums and movie theaters –, I appreciate the approach to zero in on the omnipresent camera eyes in our urban environment.

I argue that the presentation in the public space is even more commanding than within the walls of a gallery. However, a powerful project that deserves to be highlighted is set up in the zone bordering the museum space, namely the public toilets. Jonas Dahlberg installed,

in 2001, a monitor in front of the toilets of the foyer at ZKM in Karlsruhe. In the closed circuit installation *Safe zones, no 7*, we see images of the empty toilet cubicles, switching between the male and female environment. I assume everyone who urges to enter inspects, slightly uncomfortably, the space for the camera lenses, wishing for privacy at least between these narrow walls. And – what a relief – no one will ever be watched in the privacy of those confines, as it is only a small model to which the CCTV camera is looking (Figure 3).



Figure 3. Jonas Dahlberg: *Safe zones, no 7*. The toilets at ZKM (2001). CCTV video, mixed media
Source: Sebastian Pelz (2023)

The camera body itself is the medium that Jakub Geltner applies to spaces in different cities with his Nest series, beginning in 2011 in Prague. Dozens of CCTV cameras in their classic weatherproof housing are installed with their lenses pointing to all directions. Among them, we find the *Nest 06* version, presented in Sydney in 2015, which is a cluster of cameras attached to a downwards-bending lamp post. The curious form of the object drew the spectators' attention, reminding them of the grey boxes installed throughout the city. These cameras, however, served just as artistic material, not plugged in, without recorded images to be shared.

Cameras as aesthetic objects are also used by other artists. Lewis Stein's larger than life-sized photographs from 1984 of surveillance cameras document that the technique is nothing new. They portray the actual artifacts eye to eye and allow a closer look, a closer inspection of the different types, which would feel uncomfortable with the real item. The black and white images give a sense of a fleeting encounter, captured frontal and slightly blurry, on grainy film. Erik Mátrai's installation *Turul* (2012) consists of lights and one unplugged surveillance camera that cast identical shadows on both sides, reminiscent of the wings of an angel. Here, the camera is clearly turned into a sculptural object, even beautified thanks to the masterful illumination (Figure 4).

Most performative projects dealing with CCTV cameras are closely related to activism with mostly the aim to deactivate the cameras. *Cam-over* was a game-like approach in Berlin (2013) to destroy cameras in the most creative way to score rewards, with the main prize being a

front-row space at the protests preceding the European Police Congress. In reference to Beaubois' project, *The Urban Beautician* walked in 2012 with a beauty mirror on a stick through downtown Sydney, reflecting the image of the camera operators back to themselves. While doing so, a spontaneous audience observed *Shadow Reflex* and many noticed for the first time the nowadays omnipresent and significantly smaller CCTV cameras.



Figure 4: Erik Mátrai: *Turul* (2012). Source: © Erik Mátrai

Her artist statement described her approach “*The Urban Beautician* feels like a real star in the limelight – although not on stage, but nearly everywhere in downtown Sydney. So many cameras are turned towards her, so many eyes are following her! For one day, she returns the pleasure of being esteemed without applause and mirrors the image of her audience.” (Figure 5).

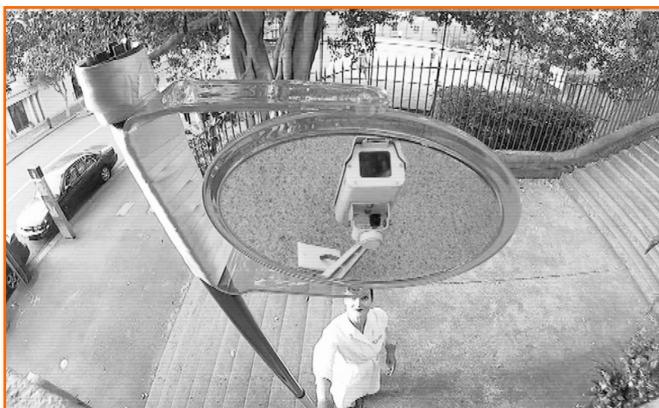


Figure 5. The Urban Beautician reflects the image of the surveillance camera back to itself. *Shadow Reflex*, Sydney (2012). Source: © Elke Reinhuber

Another project alluding to the excessive installation of cameras along Singapore's MTR network is *National Flowers*. The author collected images of all visible cameras that are installed along the two major train lines. The traditional devices are arranged in a way that is

reminiscent of botanical species, which could represent the city state's national flower: the orchid. The presentation of *National Flowers* is reminiscent of a science museum installation, treating the exhibit like an almost extinct species in anticipation that they soon will be replaced by much smaller, less obtrusive and more powerful dome cameras. The cyanotype, or blueprint technique, a reminder of botanist Anna Atkins' early attempt to collect plant species, is accompanied by information graphics, displaying the location, typology and details of the flower-like CCTV arrays (Figure 6).



Figure 6: Elke Reinhuber: installation view of *National Flowers* (2021) Source: © 2021, Elke Reinhuber, VG Bild-Kunst, Bonn

Shifting through the contemporary artistic debate on the topic remains to little avail; no wonder other themes are more prevalent at the moment and the current developments in the field of surveillance are more and more shrouded in mystery since it is a clandestine business. Today, as everyone should be alert that we are constantly observed, artistic projects that raise awareness appear to have rather historic value. Excavating the techniques, purposes and algorithms behind all the collected data seems to be a recent tendency and a topic for another article.

5. Invasions of privacy

The human behind the surveillance machinery was inclined to judge subjectively, even to imagine and fantasize, as Alfred Hitchcock suggested in *Rear Window* (1954) with his main immobile character, the photographer Jeff, looking out of his window the whole day, inventing stories about his neighbours and assuming to have witnessed a murder. The movie reminds us of the powerful eyes of our fellow citizens and their sense of justice – or just their curiosity. And in particular, of all the photographers around us, since today almost everyone is equipped with this powerful weapon, being able to record and share without consent faces and intimate details close by. Pictures that feed the ever-swelling

ocean of imagery via social media, which are extracted for the rapidly growing contraptions of artificially generated visual content.

Photography as an art form feeds our voyeuristic desire. It could be seen as a business of predators and voyeurs, equipped with telephoto lenses to spy from far away without being seen and not asking for consent – or nowadays inconspicuously snapping images with mobile devices.

In 1973, Susan Sontag described the work of Diane Arbus with the words: “To photograph people is to violate them, by seeing them as they never see themselves, by having knowledge of them they can never have; it turns people into objects that can be symbolically possessed”.

However, any photographer’s output appears deliberate and tame in comparison to the fixed cameras in public spaces and the obscure algorithms that examine it.

Most of the artistic positions introduced appear to deal with a medium from the past. How could one find a way through London or Chennai without being observed by official or private entities in the current day? Only an AI would watch a performance to video and who knows what the automatic algorithm would make out of it? What use would camouflage makeup have when our facial features are 3D scanned?

Our faces and personal details are already collected and feed the machinery of artificial image creation and e-commerce. Not only are more and more cameras being installed, but they are also becoming smaller and more affordable, their resolution is getting finer, their angle of view is wider, and they are spectrally and spatially more detailed, with thermal imaging and 3D sensing and video analytics technology integrated on top. Computer vision follows patterns, machine learning may generate new meanings, but still – the human mind, constructing the apparatus, bears the responsibility for the repercussions of the complete demise of privacy.

In any case, the age of total transparency may have already come to an end thanks to absolute surveillance, given that the authenticity of the image and its evidential value has been definitively annulled in times of deceptively realistic photo generation by artificial intelligence. Pictures can no longer testify to facts before any court, and the objectivity of a photograph is becoming a thing of the past as it ceases to be a document.

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Media artist, researcher and educator Elke Reinhuber is based at the School of Creative Media at City University of Hong Kong, after six years at ADM of NTU Singapore. She studied at UDK Berlin and holds a PhD from COFA/UNSW, Sydney for her enquiries on choice, decisions and counterfactual thinking in media arts, published as a monograph by Routledge. Her award-winning artistic research has been presented internationally at conferences, exhibitions and festivals. In her work, she explores various modes of narrative strategies to emphasize the parallel existence of multiple truths of the here and now. With her background in photography, she has experienced a wide range of cameras, analogue and digital. Fascinated but also frightened by the omnipresent camera lenses which are pointing at anyone and everyone, she is curious to explore how photography expands into other dimensions, such as stereoscopic imaging, panoramic photography, the recording of what lies beyond our visible spectrum but also the authorless images captured by machines or the currently emerging machine-created synthographs.