

AFFIRMATIVE – REJECT. With and Against AI¹

Mattis Kuhn

HARRIET:

“NEGATIVE.. NEGATIVE...”

Harry:

“She won’t find a new ending, Kathy.”

Katherine:

“Proposal two: Lover walks out on Eme.”

HARRIET:

- REJECT.....

Harry:

“Reject. You see I told you.”

Katherine:

“Explain!”

Harry:

“She’ll cross check her plot memory, find out we used it in Dick Slocum.”

HARRIET:

- WALK-OUT DEVICE USED
4 MONTHS AGO / DICK SLOCUM
VIOLATION 6-

Harry:

“You can’t win.”

Katherine:

“The hell I can’t. Proposal three.”

HARRIET:

- REJECT.....

Katherine:

“Same as two, but change cover illustration. Eme alone on beach, appears nude, watching.”

1 The base of this text is an artist talk of the same title, which took place at the conference of this volume. In it, the topic was illustrated by the author’s own works »Selbstgespräche mit einer KI« (Kuhn 2021) and »Grasslands for Insects« (Kuhn 2022). Since it seems inappropriate for the author to write a text about his own work for this conference volume (without thereby denying autoethnographic methods – especially in this context – their relevance), a new text is produced instead based on the artist talk.

HARRIET:

- AFFIRMATIVE

Katherine:

"At last. I just wanted to win once."

HARRIET:

- SALES PROJECTION SOLID
IN TOKYO . PARIS. MOSCOW.
MOSCOW. SHANGHAI. KAMPALA
SMASH HIT IN BERLIN. BONN
OK ALL OTHER INHABITED
AREAS.

Katherine:

"Did it make sense to have a machine named HARRIET, writing novels for us? Are we too exhausted from building you to make up our own stories?"

HARRIET:

- AFFIRMATIVE

Katherine:

"Fuck you, Harriet."

HARRIET:

- UNFAMILIAR TERM.
REPHRASE

Role models

The question of the relationship between man and machine – in the above conversation between a writer and a computer (Tavernier 1980) – is as old as machines themselves. Through the technologies of artificial intelligence, it is currently being posed anew and now to art in a particular way. The production of art is commonly regarded as a genuinely human ability that essentially distinguishes us from machines. Now this supposedly last hurdle is also to be taken by the machines. In recent years, art (history) has been used for many projects in which capitalist interests in the form of goods or campaigns for technological progress have been the primary focus.² For ex-

-
- 2 In this respect, the topic of automated creativity could also be explored. Hanno Rauterberg (2021: 57)* exemplifies this: "These dystopias [in which machines have "risen to world power"] are countered by the project of an artificial creativity with a resolute counter-program: it invokes the humanist heritage, the history of art, and wants to perpetuate it. It seeks the new in the old, in the good traditions known worldwide and appreciated by an educated public, which it wants to develop further and at the same time overcome. Whereas machines have always been the object of narratives up to now, the art code promises that they will become subjects of their own stories, which at the same time make the stories of humankind productive for themselves. They are supposed to be like artists: they remain in the echo chamber of culture, in the realm of free play and inconsequential imagination, and are nevertheless, or

ample, we can receive (and buy) pictures of ourselves in the style of famous (canonical) artists, compositions of deceased composers are computed or robots become painters.

But human-machine relationships are also explored from within art, thus by primarily internal actors. To grasp the relationship between artist and machine, role models are often used: “Creative Partner”, “Creative Author” (Nakotte 2021), “Design Companion” (McCraith 2020), “Ensemble Member” (Herndon 2019), “Artist”, “Artificial Muse” (Lipski / Birds on Mars 2017), or “Assistant” (Kuhn 2021). In addition, the machines are often given proper names: “ELIZA” (Joseph Weizenbaum’s chatbot), “Ractor” (text generator of “The Policeman’s Beard is Half Constructed”), “Benjamin” (text generator for “Sunspring” by Ross Goodwin and Oscar Sharp), “Spawn” (Holly Herndon’s software for her album “Proto”), “A.I.R.” (Roman Lipski’s “Artificial Intelligent Roman”) ... the list could be continued easily.

This already shows that it is not a meaningless relationship with a tool that is not worth mentioning, but rather a social relationship. Whether different role models also lead to a different way of dealing with the machine? In the field of development, it may well be that the machine is developed differently depending on which (social) role is associated with it. If a machine is to give the impression of an conversational partner with consciousness (Lemoine 2022), it must be developed accordingly. It can be assumed that artists behave differently with their machine, depending on the role they ascribe to it. In any case, the roles generate different notions of what we are dealing with in AI / machine learning. For the recipients, depending on which role of the machine is communicated to the outside, other ideas emerge about how they worked together and what machines are capable of and what they are not.

With and Against in Human-Machine Assemblages

Role models define hierarchies. Social relationships go beyond the one-sided hierarchical relationships defined by “tool”, “assistant”, “muse”, and so on. “Partner” suggests cooperation at eye level, but in fact it is difficult to realise with an entity that knows nothing about this partnership. As is well known, present machines cannot reflectively jump out of their actions, whereby there is also no outside of the machine – the world. Technically, then, present systems of machine learning remain

precisely because of this, able to think up the unthought-of and imagine the unplannable. They embody both: the beautiful, harmless superstition and the radiant power of utopia”. (Quotes denoted with * have been translated by the author.)

tool, machine, or medium, despite their astonishing cognitive achievements.³ The role models used, however, show that these machines have acquired a meaning for us (and not vice versa) that goes far beyond this.⁴ Role assignment is therefore less about technology than about our own self and world determination by means of identification and distinction.⁵ The role models, however, obscure the fact that technology is a part of us that we cannot consider completely detached at all. We are already too intertwined mentally and socially. For example, for some people the (temporary) separation from their own smartphone feels like the absence of a body part. This is hardly surprising, given that the living environment is shifting to the virtual and that without technology we lack the perceptual and action apparatuses for this environment. Andy Clark and David Chalmers (1998: 8) define the connection between humans and their cognitive extensions as a “coupled system”: “[...] the human organism is linked with an external entity in a two-way interaction, creating a *coupled system* that can be seen as a cognitive system in its own right”. If one part falls away, the system breaks.

With the increasing merging of humans with technology, it is thus also a bit strange to work with role models: “A part of me is my creative partner.” In the following, I would therefore like to describe this relationship between human and machine in artistic production processes not by means of role models, but by the figure “with and against”. The “with” stands for the identification and agreement of the human being with the machine and the artifacts calculated by it, the “against” for the difference and the contradiction towards them. Thereby, “with” and “against” are not clearly distinguished by pro and con. Both terms can be positive or negative. The text operates less on an analytical level than descriptively, along (artistic) practice: how do we behave with and against AI, how do we act in dealing with AI? It is not only about a more accurate description of current conditions and a better understanding of present technology, but even more about an attention to future action in human-machine assemblages.

-
- 3 “It requires »getting up out« of internal representations and being committed to the world as world, in all its unutterable richness”. and “The system must not only be embodied and embedded in this world; it must also recognize it *as* world”. (Smith 2019: xiii and 105)
 - 4 “Most of the computational systems we construct – including the vast majority of AI systems, from GOfAI to machine learning – represent the world in ways that matter to us, not to them. [...] [Computers] have power in our lives, [...] they matter to us. What limits them is that, so far, nothing matters to *them*”. (Smith 2019: 108)
 - 5 Perhaps that is precisely why art lends itself to an examination of AI. Art, even without AI, has always been about self-determination and world-determination.

Extension through technology

One of the goals in designing and implementing technology is to extend our cognitive abilities. A canonical artistic project in this regard is “Signwave Auto-Illustrator” by Adrian Ward (2000). Through adding generative processes he extends the tool palette for working with vector data known from Adobe Illustrator, which itself already extends the design competence of the user. Ward’s software is also uncontrollable to a certain degree, which can give the impression of machine autonomy. The program not only does what it is asked to do, but goes beyond it, which also puts it beyond the control of the user. “In opposition to the familiar and reliable functions in Adobe Illustrator, the functions in Auto-Illustrator are not only strange, bordering on the nonsensical, but also partly uncontrollable. The software tool more or less autonomously generates various effects of surprise and randomness in the design process”. (Transmediale 2013) This points to the influence that tools, especially software, exert on our design (and on the world in general) through their guidelines and restrictions, and how they are conceived, constructed, and used by us as function-oriented tools. On this point, see Trogemann (2020).

In everyday use, this authorship of software is usually forgotten or marginalized; in “Signwave Auto-Illustrator” it emerges. Of course, the resulting artifacts rely on the interaction of the user with the software and would not emerge without them. But it is obvious that authorship does not lie solely with them; Ward co-inscribes himself in the artifacts through his software. According to Ward, it is “naive [...] to ascribe autonomy to a machine program because it executes the agenda and inscribed subjectivity of its programmer [...]”. (Cramer 2011: 283)*

Working against technological development

Software enables us to do things that would not be possible and often unthinkable without it. This is especially evident through the developments in machine learning in recent years. However, extension has its price in the dependency on these extensions and possibly their authors, etc. (In relation to Adobe software, this is only now becoming really clear through its business model of the “Creative Cloud”). Art produced by machine learning is to a strong extent conditioned by technological developments. On the one hand, this has always been true specifically for technology-heavy art (media art), but on the other hand, the effects have been much more widespread in recent years. There are several reasons for this. Following on from Rauterberg’s considerations mentioned above, technology corporations, as well as university research institutions, have chosen traditional art genres and canonical works to demonstrate algorithmic capabilities. On the other hand, ML applications have become so accessible that no programming is required at all to

work with them. In these cases, however, it becomes all the more difficult to work against them. On the contrary, it can be observed that many designers and artists try to keep up with technological developments by permanently using the latest tool and producing with it. Therefore, the question is justified whether it is not us who are automated by technological developments. Especially in art, it has to be clarified whether one wants to constantly obey to this pressure of innovation by working with the latest tools and adapting one's own practice and expressiveness to external technological developments, with which completely different goals are pursued. Instead, it might be possible or even necessary to pause, to reflect, but also to thoroughly explore the current state of development.

Acting with other perspectives

Machine learning based on Big Data works with the perspectives of others. Image models are based on thousands of photographs, usually taken by people (or machines) other than those who develop and use the models. See, for example, the artistic explorations of the conditions under which datasets are created by Philipp Schmitt (2019), Elisa Giardina Papa (2020) and Adam Harvey / Jules LaPlace (2021). Of course, many perspectives are also neglected or excluded in the process, see the “Feminist Data Set” by Caroline Sindere (2017) and “The Library of Missing Datasets 2.0” Mimi Onuoha (2018).⁶ Nonetheless, an artificial neural network developed in this way can broaden one's perspective.⁷

The different external perspectives can be particularly evident when working with large-scale language models. Even though these are still based on very exclusive data sets, it is possible to infer the origin of generated texts on the basis of stylistic differences. See the different text types on the same topic in Kuhn (2022): All texts have in common that their topic is “Grasslands for Insects”. Some are written in the form of a short scientific text or an abstract, others from a first-person perspective or in the style of an advertisement or a short narrative. The model (GPT Neo) was trained with the dataset “Pile” (Gao 2021). This is composed of 22 smaller datasets and consists of 825GB of text material. This makes it far from a manageable size for a human reader. It includes fields such as academic texts, Wikipedia, prose, dialogues from chats, movies and forums, computer code and some other sources.

6 For an overview of the artistic explorations of datasets and biases, see Arns (2021).

7 At this point, it is not about an extension to an extra-human perspective. Machines do perceive the world differently from humans, but this does not yet necessarily lead to an extra-human perspective. We construct and train the machines, implement our world into them, insofar as it can be formalized, and then evaluate the computations so produced from our human perspective.

These different perspectives, which express themselves not only in terms of content but also stylistically, are transferred into a common language model, which in principle creates a polyphony in that language model. In combination with one's own perspective, this can positively result in an extension to external perspectives, i.e., multiple, open authorship. In dealing with algorithms that have internalized statistical correlations of the dataset, a (limited) polyphony emerges.

In turn, dealing with (generative) algorithms can also lead to the loss of one's own voice:

At the beginning, the algorithmically generated strings did not have the very highest meaning for me. I obviously realised that they were not my thoughts. They did not originate in me, they are external to me. Nevertheless, they are partly inspiration for my own thoughts. However, it turns out that the machine, which is supposed to complement, expand, open my thoughts, sometimes leads to speechlessness on my part. I rely on the intelligent typewriter. By outsourcing myself and my abilities into the machine, my abilities without it decrease. My efforts to develop thoughts myself diminish. Primarily I look for suitable suggestions from the machine. (Kuhn 2021: 114)*

Thus, working with AI usually means working with external perspectives, whose weight sometimes outweighs one's own perspective. On the other hand, this can create more openness. The role models (such as “partner” and “companion”) suggest singular entities, but is that accurate? Just as Brian Cantwell Smith (2019: 5) speaks of “synthetic intelligence” rather than artificial intelligence, the term synthetic entity might be more fitting to the multiple perspectives.⁸

Deciding against calculations

Machine generation results in a shift from creating to evaluating. The judging about the artifacts takes a higher value in comparison to the doing, compared with artifacts produced by hand. One form of maturity can be to decide against calculations. This is especially the case outside of art. Already the program “ELIZA”, rudimentary from today's point of view, generated a great deal of trust in the user through dialog. Today, the whole world only functions if we put great trust in our programs. Precisely for this reason, however, the ability and willingness to question the calculations is becoming increasingly important. Neil Perry, Megha Srivastava, Deepak Kumar, and

8 According to this, Ward's statement that it is about the subjectivity of the programmer is a bit too reductive.

Dan Boneh showed in their study “Do Users Write More Insecure Code with AI Assistants?” (2022) that programmers (referred to here, interestingly, as “users”) are significantly more confident in their code when it is written in co-authorship with an AI. Contrarily, while programs written without AI resulted in a less secure feeling on the part of the programmers, they also resulted in factually more secure code with fewer vulnerabilities. Even though this study is only representative to a limited extent due to its small size and the lack of a broad enough sample, it can exemplify our behavior towards machine-generated results. In co-authorship it is easy to give away responsibility.

Art is characterized by its need for interpretation. It wants to be questioned. Just in this it can be a training ground for questioning (of calculations). In the contemplation of art, we automatically find ourselves in the mode of critique. Juliane Rebentisch (2022: 165)* describes critical thinking (there specifically in relation to the formation of common sense through the judgment of taste according to Kant) with Hannah Arendt as a form of “habitualization”:

One must be practiced in it, one must be “used to” not simply accepting things as a given, one must have experienced that they can also be looked at differently and that a corresponding examination can lead to other results, other judgments. One must, in other words, have formed the habit of opposing habits, of opposing what is natural to judgment, what has become automatic to it. (Arendt 2018)

Smith, while not interested in comparisons between humans and machines, does draw a distinction in judgment. Machines do not currently have judgment capability, only “reckoning”. (2019: xvii) In his view, it is problematic if we use systems that are only capable of reckoning for judgment tasks. (2019: xix) As long as machines are not capable of that, it is our obligation to judge computations. This means we must consciously decide for or against computations (and be able to do so). In terms of the social relation, this means that, at least when responsible interaction is required, it is a hierarchical relation in which we decide about machines.

Working against AI or engaging with machine otherness.

Hannes Bajohr (2022: 174)* begins the chapter “No Experiments. On Artistic Artificial Intelligence” with a comment on Daniel Kehlmann’s experience report in writing with a pre-trained text generator, which for Kehlmann leads to the conclusion that the collaboration failed:

So it is quite possible that it was not Artificial Intelligence that failed literature, but Kehlmann who failed Artificial Intelligence – and thus somehow also failed literature. Because in his juxtaposition of fully-fledged “artistic work” and mere “experiment”, it becomes apparent how little it occurs to him that one can, or perhaps even must, make literature with machines *differently*, instead of letting them jump over the sticks of one’s own poetics. Thus, the aberrations and absurdities that CTRL spits out are obviously *bug* to him, not *feature*. What literature is and what aesthetics it has to follow is clear from the very beginning.

Kehlmann’s attempt is a form of co-creation with a machine that resists the machine’s otherness and seeks in it primarily a machine double or like-minded entity. This can, of course, lead to something. Attempts to create a machine Rembrandt or to generate new compositions by deceased composers can provide insights into their work. However, AI serves here more as an instrument of analysis than as a tool of synthesis. Generative potential unfolds rather when the otherness of machine perception⁹ and production is affirmatively incorporated. Kathrin Passig (2021: 129)* compares her activity in the process of generative literature to gardening: “Producing generative texts has much in common with traditional gardening. In both cases, one shapes the initial conditions and designs the process, not the outcome. And in both cases, the results – if all goes well – are a surprise”.

So a certain openness to the machine’s creations holds more potential for novelty, for surprise, for otherness, even in terms of aesthetic challenges for recipients. Accepting the outputs of the AI means relinquishing authorship. The role models mentioned at the beginning of this article are indicative of the fact that machines are granted a higher degree of authorship than is the case with conventional assistance tools. Nevertheless, in many projects the desire to implement one’s own vision and to trim the machine down until it is reduced to one’s own perspective prevails.

From the perspective of the machine

Now the question arises whether we should in return empower machines to the extent that they are also in a position to behave “with and against” humans. From the perspective of the machines, it is worthwhile to cooperate with us. They need us to

9 For example, Johanna Reich (2018) and Dries Depoorter (2018) use facial recognition algorithms for their works »Face Detection« and »Face Detected«, respectively, to have the completion of plastic faces made of clay determined by machine. The artist duo Shinseungback Kimyonghun (2018) takes the opposite approach in their work »Nonfacial Portrait«: commissioned painters produced portraits of people with the condition that facial recognition algorithms do not register faces in the paintings.

construct, execute and, if necessary, attribute automated creativity to them. They themselves are not capable of distinguishing creative action from non-creative action. For example, if we consider a move in chess or Go (both of which can be formalized without loss) to be creative because it is completely novel and outside of our previous thinking, we can assume that this move is as consequential (normal) from the machine's point of view as all other moves. The creativity is not registered.

The “against” arises in the sense of: Do we need machines (or humans) that extend us in the sense that they do not serve our ideas and thought patterns, but also counteract them in order to break them up. Currently, we primarily find self-mirroring. (Arns / Hunger / Lechner 2022) We create copies of ourselves (“Holly+” by Holly Herndon, “Artificial Intelligent Roman” by Roman Lipski), which is of course also an important position, especially in the artistic context of exploring human-machine assemblages. Julia Nakotte (2021) turns the relationship between human and assisting machine around in her work “Potentio Poet”. A selection of nouns, verbs, adjectives, and places she made were rated word for word in the categories of everyday life, city, and depression with values between 1 and 3. The 1 stands for “a little”, the 3 for “a lot”. Using three knobs, recipients can set the strength for the three categories, whereupon one word is selected from each category and combined to form a line of poetry. The recipients become assistants to the machine:

The focus of this work is not on the output or the presentation of the technical possibilities, but on the staging of the machine as an author. The potentio poet is presented as an independent author, while influencing persons are downgraded to assistants, who only select and rate words or chose the base of a poem line. Although the potentio poet uses only a simple random function for its part of the work, this is enough to make it impossible for us to foresee the total result. Is this enough to call the potentio poet an author? Why should it not be enough? In what ways are the potentio poet's influences different from the influences that affect human authors (like a language, experiences, education)?

In addition, we are assistants for the AI development of large tech companies. We not only provide data for training (unfortunately also voluntarily generated data like knowledge on Wikipedia or open source software), but also feedback by interacting with the AIs developed from it.

Lauren Lee McCarthy (2017) took on the role of the the machine, more specifically a smart home assistant, in her work “LAUREN”.

I attempt to become a human version of Amazon Alexa, a smart home intelligence for people in their own homes. The performance lasts several days. It begins with an installation of a series of custom designed networked smart devices (including cameras, microphones, switches, door

locks, faucets, and other electronic devices). I then remotely watch over the person 24/7 and control all aspects of their home. I aim to be better than an AI because I can understand them as a person and anticipate their needs. The relationship that emerges falls in the ambiguous space between human-machine and human-human.

McCarthy, on the one hand, performs the operations of the machine system, and on the other, she transforms it into a (more) human version. She acts with the perspective of the machine by adapting the technology, but also against it by being a human version of the machine. However, in doing so, she also takes the subordinate role and tries to serve the subjects, more empathically than the machines do.

With and Against AI

“With” and “Against” belong and work together. A reflection on the human-machine relationship by means of this figure can lead to a more differentiated perspective than the role models mentioned at the beginning alone make possible. Of course, the artists are aware that their relations to the machines are more complex than they can be represented by means of the role models. The machines have acquired meaning for us, not vice versa. Therein lies the weakness of the role models (assigned by us). They suggest a collaboration on eye level, autonomy and an own point of view, which the machines do not have due to their technical conditionality. But this is precisely where the role models are helpful and their use by artists is extremely important: they question the relationship between us and the degree of machine authorship, whose increase is currently clearly visible. For even if they are not full partners, they go beyond a tool not worth mentioning.

In most cases, of course, we do not just accept and adopt what is calculated by machines. On a small scale, this is also evident in everyday life, for example, when individual words or parts of sentences from a machine translation are adjusted by us according to our ideas by means of DeepL (as was done for the translation of this text from German into English), when we manually undo automatic corrections or generally decide against suggestions. For our own grip on the technology, we have to (inter-)act with it. At best, this goes beyond the mere selection of suggestions into the machine construction itself. Artistic explorations are particularly suitable for playful testing of different human-machine assemblages. They can serve as a blueprint for extra-artistic relations, which unfortunately can be designed less freely in most cases. Ideally, working with machines does not lead to a limitation of one's own expressiveness and responsibility, which results in dependency, as experienced and questioned by Katherine in the opening dialogue, but rather to an expansion of our possibilities and our view of ourselves and the world. The human-machine assem-

blages should thus be open enough to integrate otherness into our perspective, but also keep open the possibility of acting against the machines' calculations.

Bibliography

- Arendt, Hannah (2018): *Was heißt persönliche Verantwortung in einer Diktatur?* Munich: Piper.
- Arns, Inke (2021): "Kann Künstliche Intelligenz Vorurteile haben? Zur Kritik algorithmischer Verzerrung von Realität", *KUNSTFORUM International* (278), 108–121.
- Arns, Inke / Francis Hunger / Marie Lechner (eds) (2022): *HOUSE OF MIRRORS: Künstliche Intelligenz als Phantasma*. Dortmund: Verlag Kettler.
- Bajohr, Hannes (2022): *Schreibenlassen. Texte zur Literatur im Digitalen*. Berlin: August Verlag.
- Clark, Andy / David Chalmers (1998): "The extended mind". *Analysis* 58.1, 7–19.
- Cramer, Florian (2011): *Exe.cut[up]able statements. Poetische Kalküle und Phantasmen des selbstausführenden Texts*. Paderborn: Fink. https://www.netzliteratur.net/cramer/poetische_kalkuele_und_phantasmen.pdf (21 January, 2024).
- Depoorter, Dries (2018): "Face Detected". <https://driesdepoorter.be/facedetected/>.
- Gao, Leo / Stella Biderman / Sid Black / Laurence Golding / Travis Hoppe / Charles Foster / Jason Phang / Horace He / Anish Thite / Noa Nabeshima / Shawn Presser / Connor Leahy (2021): "The Pile: An 800GB Dataset of Diverse Text for Language Modeling". *ArXiv*. <https://doi.org/10.48550/ARXIV.2101.00027>.
- Giardina Papa, Elisa (2020): *Cleaning Emotional Data*. Video Installation Linz: Ars Electronica
- Harvey, Adam / Jules LaPlace (2021): "Exposing.ai". <https://exposing.ai> (21 January, 2024).
- Kuhn, Mattis (2021): "Selbstgespräche mit einer KI". *oxoa*. https://oxoa.li/wp-content/uploads/2021/08/oxoa_Kuhn-Selbstgespräche-mit-einer-KI.pdf (21 January, 2024).
- Kuhn, Mattis (2022): *Grasslands for Insects*. Frankfurt/Main: windpark books. <https://windparkbooks.de/wp-content/uploads/2022/10/GFI.pdf> (21 January, 2024).
- Lemoine, Blake (2022): "Is LaMDA Sentient? – an Interview". *Medium*. <https://cajundiscordian.medium.com/is-lambda-sentient-an-interview-ea64d916d917> (14 June 2022).
- Lipski, Roman / Birds on Mars (2017): 'AIR'. <https://www.artificialmuse.ai/> (21 January, 2024).
- McCarthy, Lauren L. (2017): "LAUREN". <https://www.lauren-mccarthy.com/LAUREN> (21. January 2024).

- McCraith, Lily (2020): "Now Make This". <https://playground.uni-weimar.de/automate/examples.html> (21 January, 2024).
- Nakotte, Julia (2021): "Potentio Poet". <https://ground-zero.khm.de/portfolio/potentio-poet/> (21 January, 2024).
- Onuoha, Mimi (2018): "The Library of Missing Datasets 2.0". <http://mimionuoha.com/the-library-of-missing-datasets-v-20> (21 January, 2024).
- Passig, Kathrin (2021): "Wenn man nicht alles selber schreibt. Sieben Gründe für das Generieren von Texten". TEXT+KRITIK. Hannes Bajohr / Annette Gilbert (eds.) *Digitale Literatur II*, 120–133.
- Perry, Neil / Megha Srivastava / Deepak Kumar / Dan Boneh (2022): "Do Users Write More Insecure Code with AI Assistants?" *ArXiv*. <https://doi.org/10.48550/ARXIV.2211.03622>.
- Rauterberg, Hanno (2021): *Die Kunst der Zukunft. Über den Traum von der kreativen Maschine*. Berlin: Suhrkamp.
- Rebentisch, Juliane (2022): *Der Streit um Pluralität. Auseinandersetzungen mit Hannah Arendt*. Berlin: Suhrkamp.
- Reich, Johanna (2018): "Face Detection". <https://johannareich.com/project/home-works-face-detection/> (21 January, 2024).
- Schmitt, Philipp (2019): "Humans of AI". <https://humans-of.ai> (21 January, 2024).
- Shinseungback Kimyonghun (2018): "Nonfacial portrait". https://ssbkyh.com/work/s/nonfacial_portrait.
- Sinders, Caroline (2017): "Feminist Data Set". <https://carolinesinders.com/feminist-data-set/>.
- Smith, Brian C. (2019): *The Promise of Artificial Intelligence. Reckoning and Judgment*. Cambridge, Massachusetts: MIT Press.
- Transmediale Archive (2013): "Signwave Auto-Illustrator". Transmediale Archive. Web. <https://achive.transmediale.de/content/signwave-auto-illustrator> (21 January, 2024).
- Trogemann, Georg (2020): "Reenacting Poiesis – Mehr Anarchie in der Technik!" Ralf Baecker / Dennis Paul / Andrea Sick (eds.) *Reenactments in Kunst, Gestaltung, Wissenschaft und Technologie*. Hamburg: Textem (Salon Digital, 1), 133–155. <https://secureservercdn.net/160.153.137.233/j5z.063.myftpupload.com/wp-content/uploads/2021/04/SalonDigital-Band1-Trogemann.pdf> (german) <https://secureservercdn.net/160.153.137.233/j5z.063.myftpupload.com/wp-content/uploads/2021/04/ReenactingPoiesisEnglish.pdf> (english) (21, January, 2024)
- Ward, Adrian (2000): "Signwave Auto-Illustrator". <https://web.archive.org/web/20090403174208/http://swai.signwave.co.uk/> (21 January, 2024).

Discography

Herndon, Holly (2019): *Proto*. 4AD Records.

Filmography

La mort en direct (1980): Dir. Bertrand Tavernier. Orange Studio, DVD 2021