

# *Machines, Images and Hauntings:*

Analyzing the Origins  
and Impact of  
Racial Bias within

*Racial  
Recognition  
Technology.*

Machines, Images and Hauntings:  
Analyzing the Origins and  
Impact of Racial Bias within Facial  
Recognition Technology

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*That was then and*

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Truthfully: Who hasn't dreamed about artificial intelligence, and the way it could influence everyday life? Dreams that feel exciting, like a hallucination of a future we are already sort of living in. An AI that is able to diagnose illnesses or one that makes a car drive all on its own. An AI that is taking care of Ma and Pa at the elderly home. An AI that writes the most entertaining movies, the most inspiring poems and the most scandalous of books. AI making Art and AI that gambles just right at the stock market. No Humans Involved. It might sound outrageous but this could be the trajectory of our society. Overall, it already appears as if AI is here to stay. Investments have been made and fortunes are riding on the continued »success« of this hot, new piece of tech. So why wait, why consider moral dilemmas or icky feelings? It seems, the industry can't move fast enough despite moving at an incredible speed

already. If you want to catch up you better hurry, but as fascinating as all of this sounds, I just can't help myself. Even at the risk of raining on everyone's parade – technology like AI with ostensibly unlimited power, backed by vast amounts of cash that will and already has transformed many aspects of the human condition, is frankly giving me the heebie jeebies and I want to use this master thesis to explore why that is.

When contemplating AI, I automatically think of other pivotal moments in the history of science and technology that later turned out to have created more problems than solving them. It's tempting to throw around terms like Pandora's box or Oppenheimer quotes like »I am death destroyer of worlds.« at the development of AI, but what good does that really do? It reminds us that progress often comes at a price. And often that price is considered too late. However

the whole hate-to-say-I-told-you-so approach feels already worn and used at this point in time. I still want to talk about the dangers of this technology though. So, I decided to break it down, because sometimes the big picture can get overwhelming. And as we know: the devil is often in the details. That is why the following thesis will concentrate on facial recognition, and the devilish details will be the racial biases that, as reported on by many a media outlet in recent years, keep on popping up in relation to facial recognition. Be it the reported lack of ability to register faces of Black women, the mislabeling of Black people within image libraries, or the increase in targeting racialized groups with automated facial recognition cameras in public areas. For a technology that is supposed to be neutral – facial recognition seems to be highly opinionated, and that made me all the more interested in this particular section of AI.

There have been plenty of articles on datasets not being diverse enough or predominantly white developer teams, resulting in the kind of racially insensitive failures that get picked up by mainstream media, but I felt that there had to be more, this couldn't be simply a problem that originated in the 21st century, so I put on my detective hat and got to work. The result is this thesis. A thesis analyzing the origins of mentioned biases by considering the nonlinearity of time. That means I felt that yes, we might experience the past, the present and the future as separate entities, but when it comes to the development of technology these lines get blurred rather quickly. Centering around facial recognition as an example of that phenomenon, I designed this thesis in three parts. In part one, I will travel back in time and take a look at colonial future-making and its influence on modern technologies like facial recognition. In part two,

I return to the present day to assess how facial recognition is adding to the suffering of racialized people across the globe, and have a conversation with the artist Adam Harvey on bias and ethical data collecting. In the last part, I dared to dream of a future where a potentially harmful technology like facial recognition has a change of heart and where I consequently try to cast a protopian view of the things to come, because all hope is surely not lost.

Despite being separate parts, each one is being haunted, so to speak, by the other parts. Dissolving the lines between them and making them all part of one argument: Modern technology is not neutral; it is riddled with ghosts. Ghosts that are not only racial biases, they are the history of the technology in question, a residue of a different time with different morals, that attached itself to a modern technology. This thesis is about

making people believe in those ghosts by making them visible. It is not about getting rid of them, it is about acknowledging them and therefore making them less powerful. It is also about analyzing the origins of these ghosts, the times they are from, and the cultures they have instilled in them. All in order to debunk the myth that technology is something neutral, created within an empty space without any cultural influences. It is within this framework of haunting and ghosts, of nonlinearity, that I try to make my point. 👤👤👤👤👤👤👤



Essay:

*Past  
Missions*  
- or Fantasizing  
About the  
Machines of  
the Future.



fig.1

*\*The machine depicted in the movie was built after decoding a series of signals that turn out to be schematics for a complex machine that is determined to be some kind of transport for a single occupant.*

Facial recognition, to me, feels like a technology that has somehow made its way from the future to the here and now. An alien machinery sent to us by strange forces of the future. Much like the spaceship blueprints in the movie »Contact«<sup>1</sup>. We tend to look at progress and technology through rose-colored glasses – I am guilty of that as well. After reading more about facial recognition and the way it is being used, however, I came to the conclusion that we should collectively: »Snap out of it!«, despite the futuristic allure the topic holds. Facial recognition is not a mystical invention shaped in times we have yet to experience. It is a contemporary technology and it is being developed further each day. Not by masterminds thousands of years in the future, but by the tech industry of today.

Machines are able to scan faces, this is the reality we are currently living in. What makes the romance vanish astonishingly fast, is reading about those machines, as futuristic and advanced as they may come across, either failing at their tasks<sup>1</sup> or even worse: having a bad influence on human life<sup>2</sup>. There is still much to do and learn, regarding the relationship between the general public and technology, for us to anticipate, and actively work against the kind of pitfalls that facial recognition is already creating.

»The future is now!« This iconic saying calls back to the paradoxical feeling of living in the present, but experiencing something that seems out of this world and time. In this essay, I will argue that future-making and technology have been going hand in hand for a long time. And that flaws that can be found in technology like facial recognition

can be explained, not only by the bias in the data but by analyzing the way the West has been trying to outpace the rest of the world, when it comes to bring the future into existence, as fast as possible, and by any means necessary. So far, I have been mainly mentioning the future – it is the past, however, I would like to focus on for now. The past and how harmful ideas were implemented in the pursuit of progress. As it seems to me the machines of the future can be possessed by fantasies of the past and those fantasies can hold sinister ideas regarding racial domination and colonial power. With the help of texts by computer scientist Kate Crawford, museum director Andrew Blauvelt, author Michelle M. Wright and others I investigated this theory and asked myself questions about our relationship with technologies like facial recognition.

### *A disappointment and the lost haziness of it all*

In my opinion, humans have always lost themselves in mystical visions of the things to come, but along the way those visions became less mystical and more practical. As Andrew Blauvelt in his essay »Defuturing the Future« points out, in medieval times these visions were dominated by religious prophecies, fantastic tales of a future that would present itself in the form of the afterlife. Only with the concepts brought forward by the Enlightenment movement of the 17th century, innovation started to be part of modern future-making<sup>3</sup>. Gone was the haziness of forming the hereafter. »[T]he slow, sometimes generational refinements and improvements to objects accelerated, and whole new categories of things without precedent emerged.«<sup>4</sup>. Tools became technology, objects that were no longer

<sup>1</sup> Hill, Kashmir  
Wrongfully Accused  
by an Algorithm, 2020,  
Web, 04.02.2022

<sup>2</sup> Chander, Sarah  
Datenrassismus:  
Eine neue Ära, 2020,  
Web, 01.02.2022

<sup>3</sup> Blauvelt, Andrew  
Defuturing the Image  
of the Future, 2020,  
Web, 19.02.2022

<sup>4</sup> Ibid.

5 Dixon-Román, Ezekiel  
Haunting, Blackness,  
and Algorithmic Thought,  
2021, Web, 23.01.2022

6 Blauvelt, Andrew  
Defuturing the Image  
of the Future, 2020,  
Web, 19.02.2022

7 Dilnot, Clive  
Reasons to be Cheerful,  
1,2,3. ...\* (Or Why the  
Artificial May Yet  
Save Us) in *Design as  
Future Making*, p. 185.  
As cited in Blauvelt,  
Andrew Defuturing the  
Image of the Future,  
2020, Web, 19.02.2022

reduced to »a mere utilitarian function.«<sup>5</sup> To describe how this less dream-like and more precise vision of the future was portrayed, Blauvelt chose the example of the Futurama pavilion. An attraction built for the 1939 world's fair in New York. Visitors to the pavilion were rewarded with a pin that stated »I have seen the future«. But what did the future look like in 1939? According to Blauvelt »[s]eated visitors were mechanically conveyed past a model American city circa 1960 depicting a vast suburban landscape replete with a simulated automated highway system and farms growing artificial crops.«<sup>6</sup>. No flying cars and no robots, instead a vision of highways and suburbia. Reading about the Futurama, I miss the whimsical depictions of the future. The chrome frenzy and fantastical machines that could never be. Instead, we are presented with a consumer focused version of the future, which indeed feels like something so close you can observe it, because it is rooted so much in the capitalist reality people even in 1939 already lived in.

The Futurama is a great example of the shift between dreaming about the future as a parallel universe, something far removed and other-worldly, and the future as an event one would be able to experience within their own lifetime. Clive Dilnot made the insightful observation that »[m]odernity is defined by the creation of the future as compensation for the loss of the organic continuity of the past. [...] After 1900, to design is to design for the future, it is to bring the future into being as a contemporary possibility.«<sup>7</sup>. There it is: the future as a »contemporary possibility«. This version of progress seems very much like the beginning of a race. A race through

space and time. Excluding the past and present, desiring only what is yet to come. It creates a rush that does not leave much time to stop and smell the roses and learn what it means to think of the future. It makes it difficult to fully grasp the issues of the here and now, let alone the issues of the past. A race into the future without regard for the present or the past is a dangerous one. As Cameron Tonkinwise points out: by rushing to bring into existence one specific future another version might get excluded »limiting the number of the futures we have now, and limiting the quality and quantity of the futures of those futures.«<sup>8</sup>.

What it boils down to, is that the people of the past had fantasies of the future. With the help of faster development processes and streamlined production sequences taking center stage, technologies would make those fantasies a reality. The price? The price would be a future less shrouded in mystery, but rather one that is precise and rooted in consumerism. Not only did this take away from the impossibility to »live« in the future, it also made the future imminent in the past. Some crucial connections are starting to form, between future-making and technology and the fantasies that started it all. But what did these fantasies look like exactly and even more importantly: who did they belong to? Oddly enough, the Futurama pavilion and the history of world fairs could help with finding answers to these questions.

*The worst part? ... The human zoos.*

World fairs, like New York's 1939 fair, took place all over the western world, beginning with the 19th century. Andrew Blauvelt describes them as:

»The grandest gatherings of designed artifacts and experiences were assembled in the Victorian period and continued well into the twentieth century at the international fairs and expositions that arose during the industrial age, concurrent with the birth and rise of industrial design itself. Ostensibly a survey of contemporary goods and state-of-the-art manufacturing, the world's fair evolved into a showcase for what tomorrow might bring. It did so under the guise of technological progress as an exclusive form of futurity, particularly as these events became exercises in corporate visioning. The world's fair prototyped the future as a marketplace, first as a stockpiling of goods [...] and later as a showcase of the newest technologies.«<sup>9</sup>

*9 Blauvelt, Andrew  
Defuturing the Image  
of the Future, 2020,  
Web, 19.02.2022*

I would like to argue that these proud displays of »technological progress« were taking place within a very homogeneous western context. The United Kingdom, France, Germany and Belgium were the countries hosting early versions of these fairs and exhibitions, during the height of their colonial power<sup>10</sup>. Taking these dynamics into consideration, one quickly realizes: the future on display at these world fairs is not only a Western one, it is also a white one. To solidify this point further, I would like to direct attention towards the so-called »human zoos« that were part of many world fairs, or as they were sometimes called »colonial exhibitions«.

According to Blauvelt these »living dioramas« served as backdrops to create a contrast between the »developed« West and what the West interpreted as the »primitive« cultures of

*11 Blauvelt, Andrew  
Defuturing the Image  
of the Future, 2020,  
Web, 19.02.2022*

*12 Ibid.*

*13 Wright, Michelle M.  
Racism, Technology and  
the Limits of Western  
Knowledge, 2003,  
Web, 26.03.2022, p.49*

its colonies<sup>11</sup>. He goes on to describe them as »various indigenous peoples [...] were brought in to reenact daily rituals in simulated natural habitats. Portrayed pejoratively as either simple (»static«) or primitive (»unevolved«), and decidedly non-Western, these ethnographic displays [...] can be seen as markers in time, signposts by which visitors could gauge their own progress«<sup>12</sup>. The display of indigenous culture next to what was understood as technological progress, created the assumption of colonial powers marching into the future, while the rest of the world simply stood still. A fantasy of superiority.

This feeling of superiority has a long history. As previously mentioned, it was philosophical ideas developed during the era of Enlightenment that brought forward the innovative aspects of progress, and hence the need of technology to aid in thinking and materializing futurity. Michelle M. Wright rightfully points out in her essay »Racism, Technology and the Limits of Western Knowledge«, racist and harmful misconceptions about, for example, African indigenous cultures were often programmed into these philosophical thought schools<sup>13</sup>. She explains how Hegel, a very influential thinker that formed the Western understanding of how history and progress connect and shape societies, was convinced that Africa, as a continent, did not participate in the progression of history and therefore stayed in a »primitive« state, or how Hegel himself put it:

»Africa proper; as far as History goes back, has remained – for all purposes of connection with the rest of the World – shut up; it is the Gold-land compressed within itself – the land of childhood, which lying beyond

14 Hegel, Georg  
Wilhelm Friedrich The  
Philosophy of History  
Dover Publication,  
p.91. As cited in  
Wright, Michelle M.  
Racism, Technology and  
the Limits of Western  
Knowledge, 2003,  
Web, 26.03.2022, p.50

15 Dixon-Román, Ezekiel  
Haunting, Blackness,  
and Algorithmic  
Thought. 2021 Web.  
23.01.2022

16 Ibid.

17 Wright, Michelle M.  
Racism, Technology and  
the Limits of Western  
Knowledge, 2003,  
Web, 26.03.2022, p.48

18 Ibid.

the day of self-conscious history, is enveloped in the dark mantle of Night.«<sup>14</sup>

Hegel is not an outlier in this assumption; he follows the conclusions others had before him. In the essay »Haunting, Blackness, and Algorithmic Thought« the author Ezekiel Dixon-Román elaborates further on this, by explaining how other earlier Enlightenment philosophers such as Johann von Herder – who believed that humans only developed by »way of their achievements«<sup>15</sup> – saw the continent of Africa as inferior, too. Both men came to this conclusion by forcing a kind of passive nature or spiritlessness onto the perception of an entire continent<sup>16</sup>. Completely excluding the many contributions made to progress and technology by African cultures. Contributions like »[t]he first alphabets; the concept of zero; gynecology; veterinary medicine; the 365 day calendar (predating its »discovery« in the west by three thousand years); elements of geometry; Cesarean section; iron and copper smelting [...]«<sup>17</sup>. Wright continues by explaining that all of these significant achievements have been accomplished outside of the West »[...] long before the West had developed from roaming tribes into permanent organized settlements.«<sup>18</sup>.

Nevertheless Hegel's and Herder's fantasies of western superiority found their way into the depiction of futurity at the world fairs of the colonial era. I would argue that their fantasies enabled further fantasies of racial domination to blossom. This turns the fairs into a confrontation with Europe's colonial past. What has been on display at these exhibitions was not simply a »showcase of the newest technologies«, but signifiers of a western monopoly on what progress and

innovation looked like. It seems to me, beyond simple entertainment of the masses, the purpose of these fairs was to further cement the supposed superiority of the hosting countries. They were a proud display of fantasies about the future of the West right next to the »living dioramas« representing a past that needed to be outgrown. This comparison only resulted in the loss of a shared time between the different civilizations involved and a forced categorization of the world into »civilized« and »primitive«. The last of these horrible dioramas was part of the 1958 world's fair taking place in Belgium. A group of 598 Congolese people was placed in a makeshift village right underneath the Atomium to be gawked at by white visitors of the fair<sup>19</sup>.

19 Boffey, Daniel  
Belgium comes to terms  
with ›human zoos‹  
of its colonial past,  
2018, Web, 10.01.2022

What visitors of the Futurama saw in 1939 was a white, western fantasy, of how the future of the global north could look like, overshadowed by colonial greed and ignorance. But what about the technology shown at the fair, the simulated automated highway system and the farms growing artificial crops? Are those machines possessed by the fantasies of the past, too? I have suggested earlier that there is a connection between technology and turning fantasies of the future into a reality or a contemporary possibility. To explain what that actually means, a concrete example will be helpful.

In her book »Atlas of AI« Kate Crawford writes about the history of the Transatlantic telegraph cables. These cables played a significant role in holding colonial empires together. First, there was a desire for a machine that would make communication between the colonies easier and faster. Easy and fast communication was vital



to achieve the amount of control necessary to keep even the most distant colonies in check. What turned this fantasy into a reality was a combination of the right resources to advance the right technology – at the right time. This perfect storm came together in the 1840s with the discovery of a tree. Crawford writes:

»At the end of the nineteenth century, a particular Southeast-Asian tree called *Palaquium gutta* became the center of a cable boom. These trees, found mainly in Malaysia, produced a milky white natural latex called gutta-percha. After English scientist Michael Faraday published a study in the *Philosophical Magazine* in 1848 about the use of this material as an electrical insulator, gutta-percha rapidly became the darling of the engineering world. Engineers saw gutta-percha as the solution to the problem of insulating telegraphic cables to withstand harsh and varying conditions on the ocean floor. The twisted strands of copper wire needed four layers of the soft, organic tree sap to protect them from water incursion and carry their electrical currents.«<sup>20</sup>

Crawford makes clear that these cables are an »emblem of global communication and capital« as well as »a material product of colonialism, with its patterns of extraction, conflict and environmental destruction«<sup>21</sup>. By describing the cables like this she points towards the duality that often imprints itself onto technologies like this. Transatlantic telegraph cables were the foundation of the global communication we have today, but at the same time they profoundly advanced the colonial ambitions of nations like the United

22 *Ibid.* p.38 – 39

Kingdom. A fantasy of power and control turned into a reality that the global North is benefiting from to this day – but at what cost? The *Palaquium gutta* had vanished only 40 years after its discovery by the British scientific community. Malaysian Workers had been exploited to do dangerous work for almost no pay and the Malaysian jungle landscape has been altered forever<sup>22</sup>.

Reading about the *Palaquium gutta* and its swift and brutal extinction by the British, the destiny of this tree feels like a cautionary tale about colonial power structures during the Victorian era. I cannot help but think that colonies were being stripped of their natural resources to develop and produce technologies that would help build the futures fantasized and exhibited at world fairs across the globe. Exhibitions that ridiculed the cultures of the people, whose home countries were being devastated by western ambitions in the name of progress. Today, a version of this process is still taking place. Contemporary mining operations, while endangering the lives and environments in which they take place, also supply the raw materials needed to produce the communication devices we use nowadays<sup>23</sup>. By repeating these old patterns, the past and the present are forging a sad but significant connection with each other. However, the connection between 21st century mining and 19th century wood clearing are not the only bonds between past and present technologies that demonstrate the stickiness of harmful ideologies. There are far more examples, but to finally circle back to the problematic history of facial recognition and to narrow the focus once again, I thought it interesting to take a look at photography.

23 *Ibid.* p.39

20 Crawford, Kate  
*Atlas of AI*; London,  
New Haven: Yale  
University, 2021,  
Print, p.38

21 *Ibid.*

## *A ghost in the mirror or ... a photograph?*

Francis Galton's composite portraiture is a sight to behold. By superimposing photos, one portrait gets layered on top of another creating an effect that produces an uncanny facial structure, which is very strange to look at. An unsmiling face with blurred edges that feel out of focus, is staring back at whoever is looking at the surreal image. The blank expressions and traces of facial features that disrupt each other, make the portraits look like something otherworldly but somehow familiar, like an art project that tries to comment on the human condition.

Francis Galton certainly was interested in the human condition, but he was not going about it as an artist. He was a physiognomist who lived during the 19th century and made it his life's work to »improve« the genetic quality of the human population. Or in other words: he was a leading figure of the pseudoscience eugenics<sup>24</sup>. The portraits were an experiment to find what Galton considered to be a »criminal face«. His beliefs that a person's personality could be determined by one's appearance lead him to think that it should be possible to find significant facial similarities between people who committed the same type of crime. The experiment failed, Galton was not able to find those similarities despite using state-of-the-art technology<sup>25</sup>.

Galton's experiment might have failed, but photography, which was a newly emerging technology in the late 19th century, still seems the right kind of machinery to be infused with the fantasies of people like him. What I mean by that, has been better explained by Kate Crawford and Trevor

<sup>24</sup> Chinoy, Sahil The Racist History Behind Facial Recognition, 2019, Web, 27.02.2022

<sup>25</sup> Ibid.



fig.2

26 Crawford, Kate; Paglen, Trevor  
Excavating AI: The Politics of Images in Machine Learning Training Sets, 2019, Web, 27.02.2022

27 Ibid.

28 Ibid.

Paglen in their essay »Excavating.ai«. In the essay Crawford and Paglen are examining the role between physiognomists like Galton and their use of photography. They argue that the medium of photography, or the technology of photography »placed into the the nineteenth-century context of imperialism and social Darwinism, [...] helped to animate – and lend a »scientific« veneer to – various forms of phrenology, physiognomy, and eugenics [...]»<sup>26</sup> simply because during this time people assumed that things captured using photography would »preserve mathematically their forms.«<sup>27</sup>. Very much like technologies of today, photography was assumed to be neutral. Crawford and Paglen go on to describe the work done by Galton and his fellow eugenicists:

»Physiognomists [...] created composite images of criminals, studied the feet of prostitutes, measured skulls, and compiled meticulous archives of labeled images and measurements, all in an effort to use »mechanical« processes to detect visual signals in classifications of race, criminality, and deviance from bourgeois ideals. This was done to capture and pathologize what was seen as deviant or criminal behavior, and make such behavior observable in the world.«<sup>28</sup>

Galton and the people influenced by his work seemingly had a certain fantasy of the future. A future that consisted of purity. Not in the innocent sense of the word, more so in the white elitist sense of the word. To make this fantasy into a reality they used technology – in this case photography – and it was an extraordinarily good fit, because »[f]or the physiognomists, there was an underlying faith that the relationship between an

29 Ibid.

image of a person and the character of that person was inscribed in the images themselves.«<sup>29</sup>.

Eugenics today, has been rightfully classified as the pseudoscience that became the basis for the scientific racism that enabled the holocaust and justified slavery. But for Galton, born in 1822, living and working during a time where theories of racial domination helped sell the cruelties of colonization, eugenics presented just another opportunity of ensuring one race's superiority over another. Galton's world view was not that different from the rest of Victorian England, which was his home country. He, just like Hegel and Herder, had greatly misinterpreted his encounters with African culture as proof of the continent's inferiority. Despite traveling across southern Africa extensively, he remained firm in his belief that his whiteness made him superior to the Black South African natives he encountered. Considering this it seems logical for these racist beliefs to have significantly influenced his studies<sup>30</sup>.

Galton used new ways of accumulating data to inform his research, like the composite portrait that were only possible to create because of new technologies like photography. These innovations were not specifically invented to serve in Galton's physiognomist practice, but as stated previously, technology is not an object with a single utilitarian function. It is an »ensemble of processes that, although they involve particular tools [like the camera], emphasize the relations between the [camera] and the humans who use [it].«<sup>31</sup>.

Even though Galton was not able to find the »criminal face«, the horse had left the barn. The idea of using a camera to capture the likeness

30 Schumacher, Suzanne  
Racist Thinking in the Life and Work of Francis Galton, 2019, Web, 26.03.2022, p. 4–10

31 Dixon-Román, Ezekiel  
Haunting, Blackness, and Algorithmic Thought, 2021, Web, 23.01.2022



of criminals and compare them with each other was born. Following in Galton's footsteps was a French policeman by the name Alphonse Bertillon. Bertillon lived during the same time period as Galton and was influenced by eugenics as well. Galton, it seems, freely experimented with photography, whereas Bertillon due to his background in police work had a more specific use for the camera. Capturing crime scenes and taking portraits of people, who were accused of committing crimes <sup>32</sup>.

*32 Chinoy, Sahil The Racist History Behind Facial Recognition, 2019, Web, 27.02.2022*

Alphonse Bertillon's greatest achievement is the invention of the mugshot. He called it Bertillon cards, but they were an early version of what we now know as the »mugshot«. The cards had a detailed list of measurements of the portrayed person's head, which adds to its connection to eugenics<sup>33</sup>. It appears that Galton, much like Bertillon, had a fantasy of the future – one where criminals would be more easily identified using state-of-the-art technology. And like Galton, Bertillon used photography to capture a person's face, keeping a record that could be used to identify the person later, should they reoffend. Bertillon collected the records of over 100,000 prisoners between the years 1883 and 1893, creating a sizable archive that strongly resembles police mugshot databases of today<sup>34</sup>. The Bertillon card as a tool to identify people, was swiftly replaced by the fingerprint, but it did not vanish, it just got another assignment. Instead of being used for identification, it became a way of collecting data.

*33 Ibid.*

*34 Ibid.*

After learning about Galton and Bertillon, I came to the conclusion, that capturing a person's face and entering it into a police archive is a practice

rooted in a eugenic world view, because it is a practice that involves the belief that some people are inherently worse than others, because of the way their faces look. Under the guise of modern science and using technology to collect data informing their theories Galton and his colleagues tried to »better« the world they lived in. The problem with this is that the world and time they lived in, was one dominated by colonial and racial domination and betterment in the case of Galton did not necessarily mean to question these things, but to double down on them.

Eugenicists and physiognomists used what was at their disposal, which was the technologies available at the time and the theories they wanted to proof or expand upon and as Crawford and Paglen rightfully point out »[s]ome of them truly believed they were »de-biasing« criminal justice systems, creating »fairer« outcomes through the application of their »scientific« and »objective« methods.«<sup>35</sup>. These beliefs, I suggest, are the origins of the narrative that technology is something neutral, something scientific with an objective method behind it. But looking at the examples that have been discussed so far: the display of technology next to what the West classified »primitive« indigenous culture at world fairs, the Transatlantic cables that emboldened fantasies of colonial control and photography that has been used as a technology to advance eugenic theories on criminal behavior, I cannot believe in that narrative anymore. These examples may lie in the past, but it is not that difficult to find a connection between the past and the present, when one starts looking for it. Capturing people's likeness to somehow categorize them as criminals and save their features in a more or less official

*35 Crawford, Kate; Paglen, Trevor Excavating AI: The Politics of Images in Machine Learning Training Sets, 2019, Web, 27.02.2022*

record started with Galton and Bertillon, with the invention of photography in the 19th century. It continues to this day – with the practice of taking pictures of people that are about to be arrested and feeding these photos into police records. Taking it one step further into the 21st century, these mugshots can be found as part of databases that are being used to train facial recognition technology; helping the algorithm to better identify and criminalize people. This creates a vicious circle where the people who get arrested and whose mugshots get taken will, without their consent, participate in the development of facial recognition technology that leads to even further arrests and criminalization of racialized communities<sup>36</sup>.

<sup>36</sup> Safe or Just Surveilled?: Tawana Petty on the Fight Against Facial Recognition Surveillance, 2020, Web, 03.03.2022

### *Finally waking up from someone else's dream*

Future-making has been an existential part of creating the narrative of the powerful West that »innovated« itself into a place of superiority. Technology has a vital part in that narrative. Future-making finds its origins in the past. Because it is in the past that people have been dreaming of the future. And as harsh as that may sound, in most cases the people who were dreaming about the future appeared to be white and western. Andrew Blauvelt observes:

»Furthermore, isn't the unreal estate of the future already owned by the technocrats, futurologists, streamliners, and set designers – white to a man – who have engineered our collective fantasies? The »semi-otic ghosts« of Fritz Lang's Metropolis, Frank R. Paul's illustrations for Hugo Gernsback's Amazing Stories, the chromium-

<sup>37</sup> Blauvelt, Andrew Defuturing the Image of the Future, 2020, Web, 19.02.2022

<sup>38</sup> Dixon-Román, Ezekiel Haunting, Blackness, and Algorithmic Thought, 2021, Web, 23.01.2022

<sup>39</sup> Ibid.

skinned, teardrop-shaped household appliances dreamed up by Raymond Loewy and Henry Dreyfuss, Norman Bel Geddes's Futurama at the 1939 New York World's Fair, and Disney's Tomorrowland still haunt the public imagination, in one capitalist, consumerist guise or another.«<sup>37</sup>

What does this mean within the context of facial recognition? At the beginning of this essay I stated that I believe that the machines of the future can be possessed by the fantasies of the past. Possessed is one way to put it, haunting is another. Ezekiel Dixon-Román proposes a concept of haunting within a technological framework. He defines it as »[H]aunting points to the non-full, non-total presence of being. In every being there's always already an absence of presence, an inheritance, a trace of that which was and that which is to come. In every being there is a haunting.«<sup>38</sup>. Dixon-Román continues to explain that this kind of haunting, a nonlinear way of experiencing time, is also evident within the technology we use today. He writes »[t]he past is immanent in the present. The »what happened« and the »no longer« are enfolded in the present, encoding the fleshiness of bodily and techno-social systems.«<sup>39</sup>.

What I took away from Dixon-Román's definition of haunting is that it can be understood as a force of in-between. An in-between time and space. When it comes to technology, when it comes to the machines of the future, haunting is the continued presence of the past within those machines. An in-between past, present and future. Facial recognition might be a post-modern technology, but I consider it to also be a 21st

century continuation of 19th century ideas. The intentions of the people in the past, who created or used technologies like the camera might not have been motivated with a harmful intent, at the time, but people like Galton or Bertillon still carried the harmful ideologies of colonialism and white supremacy within themselves. Ruha Benjamin argues that »[...] innovations reflect the priorities and concerns of those who frame the problems to be solved, [...] such solutions may reinforce forms of social dismissal, regardless of the intentions [...]«<sup>40</sup>. That is why I would argue that technologies like photography or facial recognition, can never be free of the fantasies that get inevitably imprinted onto them by the people using the technology. It is important to acknowledge that.

For a very long time, the future has been envisioned by the West – by »[...] technocrats, futurologists, streamliners and set designers [...]«<sup>41</sup> by the Galtons and Bertillons of this world. It seems, these future-makers fantasized about »purity«, colonial power, and believed in advancing »civilized« societies through any means necessary. Many of the tools they used to make their future fantasies a reality – the camera, statistics, archives – were predecessors of the technologies we used today – facial recognition, computation, databases. By accepting the non-linearity of time when it comes to technological progress, it is easier to accept that the past is always with us. It haunts the present, it exists in-between what is, what was and what will be. At the beginning of this essay, I mentioned the flaws within facial recognition. What I meant by those flaws are the processes that lead to algorithms being able to »scan« faces and match them with each other,

which did involve systems of belief that were seen as the norm in the past, but are frowned upon today. Considering this, there seems to be a history behind the progress of technology that disproportionately disadvantages Black people and people of color across the globe. I would argue that this is founded in it being a history of the West dreaming about a future for itself, designed by itself. All too often, excluding people, who did not fit into that vision. The artist Suzanne Kite in her essay »Making Kin with the Machines« analyzes that »[t]he world created through Western epistemology does not account for all members of the community and has not made it possible for all members of the community to survive let alone flourish.«<sup>42</sup>. I would suggest that, if we want all members of our community to flourish and survive in the future, it might be time to let people dream about it – who historically have not had that much opportunity to do so, and start acknowledging the ghost in the room that is the past.

<sup>40</sup> Ruha Benjamin  
Race After Technology:  
Abolitionist Tools for  
the New Jim Code;  
Cambridge: Polity  
Press, 2019, Print, p.79

<sup>41</sup> Blauvelt, Andrew  
Defuturing the Image  
of the Future. 2020.  
Web. 19.02.2022

<sup>42</sup> Lewis, Jason Edward;  
Arista, Noelani;  
Pechawis, Archer;  
Kite, Suzanne  
Making Kin With The  
Machines 2018. Web.  
26.03.2022, p. 9

Essay:

*Present Losses*  
or Controlling  
the Images  
of the Past.

*\*bell hooks, born Gloria Jean Watkins, chose her pen name to honor her maternal great-grandmother but beyond that she wanted people to concentrate on her writing first and not on her person. Which is why she chose to always write her name in lower case.*

*1 bell hooks  
Black Looks: Race  
and Representation;  
Boston: South End  
Press, 1992, Print, p.2*

*2 Ibid. p.3*

*3 Ibid. p.4*

*4 Ibid.*

In the introduction to her book »Black Looks«, the late author and activist bell hooks\* explains that historically images of Black people have always been controlled by others and how that control has devastating consequences. hooks' perspective is an American one, but she acknowledges that this is the case for Black people across the African diaspora.<sup>1</sup> The word »image« in this case is not synonymous with just a photograph, it is more so about the way Black people are represented within cultural context. »From slavery on, white supremacists have recognized that control over images is central to the maintenance of any system of racial domination [...]«<sup>2</sup>, hooks writes. What she is referring to is that imagery of Black people in public spaces often reinforces harmful stereotypes, because the cultural images in question have been constructed either by white people with racist tendencies or even Black people who have internalized racism<sup>3</sup>. This takes agency away from Black people which they would need to create a self image that is true to them and is not reflecting someone else's vision of them. This lack of control can be acutely painful as hooks writes:

»It rips and tears at the seams of our efforts to construct self and identify. Often it leaves us ravaged by repressed rage, feeling weary, dispirited, and sometimes just plain broken-hearted. These are the gaps in our psyche that are the spaces where mindless complicity, self-destructive rage, hatred, and paralyzing despair enter.«<sup>4</sup>

By not being able to control the way one is being perceived, a person can be turned into just

*5 Samatar, Sofia  
Skin Feeling, 2015,  
Web, 05.02.2022*

*6 bell hooks  
Black Looks: Race  
and Representation;  
Boston: South End  
Press, 1992, Print, p.4*

*7 Ibid.*

*8 TEDxBeaconstreet  
Joy Buolamwini:  
How I'm fighting  
bias in algorithms,  
Video File, TEDx,  
2016, Web, 01.11.2021*

*9 House Committee On  
Oversight And Reform  
Facial Recognition  
Technology (Part 1):  
Its Impact on our Civil  
Rights and Liberties,  
Video File, Youtube,  
2019, Web, 48:50 –  
53:39, 25.11.2021*

*10 Murgia, Madhumita  
Who's using your face?  
The ugly truth about  
facial recognition, 2019,  
Web, 05.02.2022*

a surface that is being surveilled by another. A surface, drained of its human significance, turning visibility into invisibility<sup>5</sup>. Only through efforts that desire a different way of seeing Blackness can this thread to Black identity be reversed. What bell hooks advocates for is a decolonialized image of Blackness<sup>6</sup> and the wish to be seen instead of watched.

hooks states that image-making can only be seen as political in nature, therefore only through critical analysis can this different way of seeing be achieved. »It is [...] about transforming the image, creating alternatives, asking questions about what type of images subvert, pose critical alternatives, and transform our worldviews, [...]«<sup>7</sup>. I would argue that a lot of this particular kind of transformation has been taking place since hooks published her book. Better representation of Black people has been achieved in certain parts of society, but to me it seems that projecting harmful stereotypes onto Black bodies, and thereby denying Black people control over how they get perceived by others is still happening. To make matters worse, these processes, thanks to newly developed technology, can now be automated and disguised as neutral operations necessary to »protect« the public.

The new technology in question is facial recognition. It has seen a rise in popularity in recent years, despite the ongoing warnings issued by computer scientists like Timnit Gebru or Joy Buolamwini<sup>8</sup>, congressional hearings on its dangerous biases<sup>9</sup>, and articles detailing the many ways facial recognition is overstepping boundaries of privacy<sup>10</sup>. By carefully considering hooks' observations regarding the loss of control over

*\* Language is important but can also be confusing. In case someone is wondering why I am not including Black people within the term people of color, it is because in the case of this essay I am using bell hooks theory on discriminatory imagery of Black people as my base. hooks is focusing on the struggle of Black people. Which makes it necessary to lay a special focus on the Black community. Certain effects of racism disproportionately affect Black people, the language I use to describe those effects needs to reflect that.*

*Nevertheless facial recognition is a global technology therefore it is affecting racialized people across the world which is why I do want to include people of color as well. It might sound convoluted but to me it felt more respectful to phrase it »Black people and people of color«. For more information on the matter I recommend the article and podcast episode »Is It Time To Say R.I.P. To »POC«?« by the NPR podcast Code Switch.*

the self-image of Black people, I want to analyze the kind of potential impact newly emerging technology, like facial recognition, can have over this loss. I would like to specify that, within the framework of this essay, the word image is meant to be understood as hooks' interprets it – as the cultural representation of Black people in a public setting. Even though hooks is focusing on Black people I would like to include people of color into my analysis as facial recognition is being deployed globally affecting not only marginalized Black communities but other racialized groups as well\*. I will explore how facial recognition could add to this loss of control, and why the deployment of this technology is particularly devastating for various communities. Furthermore, there will be a closer look at how and where the West's colonial past and facial recognition interconnect. To me this interconnection is of special significance, because I would like to show how the past is imminent in the present, and that particular issues keep reappearing, because they have never truly been dealt with in the first place.

To forge a link between bell hooks' writings and facial recognition, I am drawing from Kate Crawford's extensive research on classification, its history and how it plays heavily into the development of machine learning which – as I will later explain – is what facial recognition could be categorized as. Additionally, I will briefly discuss the current development status of facial recognition, as a type of artificial intelligence and briefly explain what it actually is. However, my goal is not a comprehensive and detailed explanation of facial recognition, as that would not only greatly exceed the limits of this essay, but also understanding this technology in its entirety is not

vital to the overall point. It is enough to have an overview in order to understand its impact and the consequences that come along with it. Far more important to understand than technical details is that systems of oppression have the tendency to reproduce themselves in the face of progress, by holding onto the powers that are present. To follow hooks in her ambition to decolonize Blackness, I am certain, it is important to look at the post-modern 21st century cultural context of the West and confront the forces that add to the loss of control Black people and people of color have to face even today, when it comes to their self image.

*Oh! What a brave new world it is, isn't it?*

As I have stated before, facial recognition has seen a rise in popularity in recent years, despite harsh criticism against the technology. What makes this rise even more troubling, is that it is not only the private sector that is investing in this newly emerging technology. A large number of governmental institutions and agencies of the global north are taking part in the development and funding of facial recognition. What follows is a list of ways facial recognition is being used in public areas, by mostly governmental bodies. It should serve as a reminder why this development is alarming.

Police forces across the UK started deploying facial recognition to identify people at various public events and locations, scanning their faces and storing their biometric data without their knowledge. Shopping centers, festivals, sports events, concerts and demonstrations were all targeted by the British police. This was especially



11 Face-Off: The lawless growth of facial recognition in UK policing, 2018, Web, 27.03.2022

12 Chiusi, Fabio  
In Italy, an appetite for face recognition in football stadiums, 2019, Web, 05.02.2022

13 Jansen, Fieke; Leufer, Daniel  
The EU is funding dystopian Artificial Intelligence projects, 2020, Web, 24.01.2022

14 Dachwitz, Ingo  
Überwachungstest am Südkreuz: Geschönte Ergebnisse und vage Zukunftspläne, 2018, Web, 24.01.2022

15 Dongus, Ariana; zur Nedden, Christina  
Getestet an Millionen, 2017, Web, 24.01.2022

16 Hill, Kashmir  
Wrongfully Accused by an Algorithm, 2020, Web, 04.02.2022

easy because of the vast network of CCTV cameras spanning across the country<sup>11</sup>. But the UK is not the only nation to slowly but surely (and often secretly) introduce facial recognition as a new technology to exercise control over their citizens. A number of countries have implemented facial recognition in their football stadiums as a »security« measure<sup>12</sup>. The EU is funding an automated border security system called iBorderCtrl which is supposed to detect deception, by using facial recognition. It is basically a lie detector test that involves scanning people's faces, and analyzing their micro expressions to figure out whether someone is telling the truth about, for example, their ethnicity or land of origin<sup>13</sup>. German federal police conducted a test for an automated facial recognition system at the Berlin train station Südkreuz<sup>14</sup>. In Jordan, people who want to enter refugee camps have no choice, but to let their retinas and faces be scanned. This is supposedly a measure to digitize the records of the camp, but scholars Christina zur Nedden and Ariana Dongus found that the camp also serves as a testing ground for new technology, like facial recognition to be refined to be marketed as a save option for the western markets<sup>15</sup>. Last but not least, police forces in the US have been cooperating with suppliers of facial recognition software, to help with the identification of potential suspects and preemptive policing for years<sup>16</sup>.

These are just a handful of many potential examples, I picked out, to acknowledge that facial recognition is not only being deployed in the US or UK, but worldwide. Its use is often defended under the guise of national security and protection of the public, but as activist Twana

17 Hill, Kashmir  
Wrongfully Accused by an Algorithm, 2020, Web, 04.02.2022

Petty is pointing out security and safety are not the same thing. Therefore surveilling marginalized groups does not automatically result in a safer environment for all<sup>17</sup>. The fact that people being exposed to this technology are often not aware of it, or are being forced to interact with it, gives facial recognition a sinister character that overshadows its potential benefits.

The use of facial recognition in sensitive areas of government, like police work or border control, is especially worrying given the fact that our collective knowledge over the way artificial intelligence functions is still limited. In their essay »The Nooscope Manifested« Vladan Joler and Matteo Pasquinelli explain:

»AI is now at the same stage as when the steam engine was invented, before the laws of thermodynamics necessary to explain and control its inner workings, had been discovered. Similarly, today, there are efficient neural networks for image recognition, but there is no theory of learning to explain why they work so well and how they fail so badly. Like any invention, the paradigm of machine learning consolidated slowly, in this case through the last half-century. A master algorithm has not appeared overnight. Rather, there has been a gradual construction of a method of computation that still has to find a common language.«<sup>18</sup>

18 Joler, Vladan; Pasquinelli, Matteo  
The Nooscope Manifested: AI as Instrument of Knowledge Extractivism, 2020, Web, 27.03.2022

It seems from the explanation given by Joler and Pasquinelli that our understanding of the technology that is AI is still somewhat naive. However, I have the impression, it is being used casually in a lot of aspects of everyday life already. To me,

there is a certain impatience to the way the tech industry is running towards this brave new world. A technological race with the winner being the one who can make the future a reality the fastest with complete disregard of the consequences of their actions. Or in other words: trying to run without knowing how to walk first. In order to slow things down for myself and for the sake of this essay, I want to take a step back and try to figure out what is known about how this state-of-the-art technology operates.

What follows is a basic explanation of how facial recognition works, it should only serve as a way of reducing some of the opacity of the black box – a term used by people to describe the unknowable nature of AI technology – to get a better understanding of the mechanisms involved in training a computer to recognize faces and match them with other faces. It is not a detailed analysis of the innermost workings of facial recognition, due to the reasons I have stated before.

Facial recognition is a version of artificial intelligence which, according to a common explanation, means it is the attempt of simulating human intelligence in computers. This should be taken with a grain of salt. AI is not so much thinking, as humans do, as it is searching for a pattern to recognize. This is what an AI, like facial recognition, consists of, a number of algorithms that are searching for patterns, learning and improving on their own. This is why the term machine learning is often used as a more specific terminology to describe facial recognition. It means, facial recognition is a form of machine learning where a cluster of algorithms, normally called a neural network, are searching

*19 Joler, Vladan;  
Pasquinelli, Matteo  
The Nooscope  
Manifested: AI as  
Instrument of  
Knowledge  
Extractivism, 2020,  
Web, 27.03.2022*

*20 Ibid.*

for patterns in the initial input data. In the case of facial recognition the pattern in question is a face. Joler and Pasquinelli explain that »[t]he algorithm starts as a blank slate and, during the process called training, or ›learning from data‹, adjusts its parameters until it reaches a good representation of the input data. In image recognition [...] the computation of millions of parameters has to resolve into a simple binary output: 1=true, a given image is recognised; or 0=false, a given image is not recognised.«<sup>19</sup>

All of this can be confusing, but what it essentially means is, the computer starts out knowing nothing and by »looking« at input data or data-sets it starts to learn what a face looks like, it »remembers« its pattern and works out a model that is capable of recognizing and matching faces. Even though there is a lot of humanizing language used in explaining this process it should be stated that, despite being called machine learning, the machine »[...] learns nothing in the proper sense of the word, as a human does; machine learning simply maps a statistical distribution of numerical values and draws a mathematical function that hopefully approximates human comprehension.«<sup>20</sup>. This sounds a lot less magical, but it also shows that the powers at play are much more limited than they would be, if magic was involved.

Extracting patterns and building models – none of that would be possible without the initial input data or training data. In order to train a neural network, making it capable of recognizing patterns and extracting them, large sets of data are needed. A functioning facial recognition model would need to be trained on image data-



sets consisting of hundreds of thousands – if not millions – of faces. All of them labeled so the algorithm can statistically assess the data, and work out a model that is able to differentiate between different faces. It is important to understand that these networks do not actually see anything the way a human being sees with their eyes. Neural networks assess data. In his essay »On Computer Vision« Adam Harvey describes that »[...] the extent to which a computer vision algorithm can interpret the world is limited, guided, and programmed by image training datasets. Seeing with computer vision is seeing through the lens of training data. Light is no longer interpreted as a direct impression of electromagnetic energy in the optical spectrum, but also as the weights and biases of an archive's afterglow.«<sup>21</sup>

21 Harvey, Adam  
On Computer Vision  
2021, Web, 10.02.2022

This makes training data the backbone of contemporary machine learning and artificial intelligence, in general. And the reason why there needs to be so much data is found in the statistical method that forms the basis of the way the algorithm computes the data. More data means more accuracy. In the history of AI research, other methods were explored, but they proved to be more fragile and less dependent when used in a real life setting, which led to the success of the so-called brute force approach<sup>22</sup>. This ushered in a new era of accumulating massive amounts of data by any means necessary which did not leave much space for consent.

22 Crawford, Kate  
Atlas of AI; London,  
New Haven: Yale  
University, 2021,  
Print, p.98 – 101

According to the project website of exposing.ai some of the largest and widely used datasets of recent years have been MegaFace, VGG Face and IBM Diversity in Faces<sup>23</sup>. Some of these

23 Harvey, Adam;  
LaPlace, Jules  
Exposing.ai, (n.d.),  
Web, 18.02.2022

24 Crawford, Kate;  
Paglen, Trevor  
Excavating AI: The  
Politics of Images in  
Machine Learning  
Training Sets, 2019,  
Web, 27.02.2022

25 Ibid.

datasets have been criticized and some are no longer in use, but their influence is significant, nonetheless. These datasets can differ in content and size but the basic structure of them is the same. They all consist of images that have been labeled and put into different categories. Kate Crawford explains their underlying structures as »[...] generally consisting of three layers, the overall taxonomy (the aggregate of classes and their hierarchical nesting, if applicable), the individual classes (the singular categories that images are organized into, e.g., »apple«), and each individually labeled image [...]«<sup>24</sup>. Crawford continues this description with the sentence »Our contention is that every layer of a given training set's architecture is infused with politics.«<sup>25</sup>. My interpretation of this is that these structures did not simply appear out of thin air, they did not develop in a cultural vacuum and they lay the groundwork for the discriminatory nature of facial recognition, by relying on simplifying the world the datasets try to mirror. This is a task that seems impossible given the complex nature and fluidity of our world. That however, is not the concern of facial recognition, neural networks or algorithms of any kind. Joler and Pasquinelli explain this further by stating:

»The problem of bias has mostly originated from the fact that machine learning algorithms are among the most efficient for information compression, which engenders issues of information resolution, diffraction and loss. Since ancient times, algorithms have been procedures of an economic nature, designed to achieve a result in the shortest number of steps consuming the least amount of resources: space, time,

energy and labour. The arms race of AI companies is, still today, concerned with finding the simplest and fastest algorithms with which to capitalise data. If information compression produces the maximum rate of profit in corporate AI, from the societal point of view, it produces discrimination and the loss of cultural diversity.<sup>26</sup>

Even if there is still much to figure out when it comes to artificial intelligence, what I understand clearly is that simplification and compression are central to its operation. This operation consists of having to compute massive amounts of data in a minuscule amount of time. This then results in the loss of any cultural diversity being registered by facial recognition or most other AI. This made me consider: if algorithms are prone to cutting away cultural diversity in order to process information faster they seem even less aquipt for the use in areas where people have been stripped of their diversity already. bell hooks pointed at the harmful racial stereotypes being reproduced through image making. The algorithm feeds right into this kind of reduced image by not being able to consider diversity.

26 Joler, Vladan;  
Pasquinelli, Matteo  
The Noosphere  
Manifested: AI as  
Instrument of  
Knowledge  
Extractivism, 2020,  
Web, 27.03.2022

### *The curious case of Classification*

Classification is at the heart of the structure of image datasets. I would argue that taxonomy, classes and labels (the three layers present in the structure of every dataset used to train neural networks) are all versions of classification. Classification itself has been connected to power for a long time. Crawford writes »[i]n the-ology, the ability to name and divide things was a divine act of God [...]«<sup>27</sup> and in her Book

27 Crawford, Kate  
Atlas of AI; London,  
New Haven: Yale  
University, 2021,  
Print, p.133

28 Ruha Benjamin  
Race After Technology:  
Abolitionist Tools for  
the New Jim Code;  
Cambridge: Polity  
Press, 2019, Print, p.78

29 Crawford, Kate  
Atlas of AI; London,  
New Haven: Yale  
University, 2021,  
Print, p.147

30 Crawford, Kate;  
Paglen, Trevor  
Excavating AI: The  
Politics of Images in  
Machine Learning  
Training Sets, 2019,  
Web, 27.02.2022

»Race After Technology« the author Ruha Benjamin compares the construction of data-sets to a world building exercise, »[...] a normative process in which programmers are in a position to project their world views – a process that all too often reproduces the technology of race.«<sup>28</sup>. Both, Benjamin and Crawford, are identifying the practice of classification as an act of power. To also further the point Benjamin made: race is also very much involved. This becomes especially clear when looking at examples of classification which even when taking place outside of the context of data can still be related to it.

Classifying people, for example, has a long history in imperialistic and colonial power structures. Empires conquered regions and categorized the people that lived in those regions as a measure of control and to establish authority. When establishing a new colony far away from the homeland, colonial powers tried to justify the crimes they committed against the Indigenous population by classifying them as non-human<sup>29</sup>. This kind of justification seeped deep into the collective consciousness of colonial Europe and gave rise to pseudosciences like eugenics or phrenology. Heads and faces were measured to classify humanity into »primitive« and »civilized« or find out which features would make someone a »criminal«<sup>30</sup>.

Sadly this act of dehumanizing entire groups of people through classification is not an artifact of the past. After the brutal beating of Rodney King by Los Angeles police officers in 1992, a report on the acquittal of the policeman responsible discovered that the acronym N.H.I., which

31 Wynter, Sylvia  
No Humans Involved:  
An Open Letter to my  
Colleagues 1994, Web,  
27.03.2022, p.1 - 3

32 Ibid.

33 »Nafri«: Ein Begriff  
bringt die Polizei in  
Erklärungsnot, 2017,  
Web, 07.02.2022

34 Ruha Benjamin  
Race After Technology:  
Abolitionist Tools for  
the New Jim Code;  
Cambridge: Polity  
Press, 2019, Print, p.79

35 Wynter, Sylvia  
No Humans Involved:  
An Open Letter to my  
Colleagues, 1994, Web,  
27.03.2022, p.1 - 3

stands for No Humans Involved, was routinely used by public officials of the judicial system in Los Angeles, when dealing with young Black men and boys from low income areas<sup>31</sup>. In an open letter published days after the acquittal of the police officers involved, the novelist Sylvia Wynter discusses how the acronym N.H.I. came to be as part of a classification system that can only be traced back to »race«<sup>32</sup>. In 2017, after riots broke out on New Year's Eve in the German city of Cologne, it became public knowledge that Cologne police and police forces of the surrounding regions frequently used the abbreviation Nafri to single out and identify young North African men. Nafri is short for the German term North African repeated offender and the term has been heavily discussed in German media in the aftermath of the events from New Year's Eve of 2017<sup>33</sup>. Even though these two terms are being used in two different countries, they are both ways of classifying people. Furthermore, I would argue that language like this is effectively stripping away the humanity of a person and shows, as Ruha Benjamin explains, that »[r]acist structures do not only marginalize but also forcibly center and surveil racialized groups [...]«<sup>34</sup>.

In her letter Wynter goes on to write about the way the Nazis used harmful classification to alinate the German public from Jewish citizens and communities. She points out that »[i]t was this discursive classification that had enabled [the jewish people] to be misrecognized as aliens, as strangers who were, as if it were, of a different species; strangers, »not because they were aliens but because the dominant group was alienated from them by a traditional antipathy.«<sup>35</sup>. Of course, this is not a direct

comparison between the terrifying and devastating events that we now know as the Holocaust, but to exemplify how harmful classification has a very long tradition in destroying the image of people who have been made into »the Other«.

Considering that classification has been used throughout history to racially dominate and double down on harmful stereotypes, I have to agree with the initial statements by Crawford and Benjamin that power seems to be at the center of these processes. Or to be more precise: power and control. Classification has been and is being used by people in positions of power to control racialized people, who have significantly less power. This leads back to the beginning of this essay, where I explained that being controlled like this can take away a person's humanity and turn them into a mere surface. A surface to be scanned and surveilled. This makes for an unwanted inclusion, trapping Black people across the globe »between regimes of invisibility and spectacular hypervisibility.«<sup>36</sup>. This existence in an impossible place is adding to the loss of control bell hooks writes about, and it can be extended into the digital world of facial recognition. Classifying young men as non-human or dangerous criminals without ever talking to them, is labeling them without their consent. They are being forced into a system where they have no control over the kind of class that will be assigned to them: homeless, criminal, jobless? Finally all these classified and categorized men are used to create a taxonomy of racial stereotypes. To me, this feels oddly reminiscent of the way data is being classified to subsequently be scanned by neural networks searching for patterns to extract.

36 Ruha Benjamin  
Race After Technology:  
Abolitionist Tools for  
the New Jim Code;  
Cambridge: Polity Press,  
2019, Print, p.125

The process of data classification and human classification can get even more mixed up, when the data in question consists of images that depict people who – in any shape or form – had a run in with the police. Data like this can be found within the confines of the NIST Special Dataset 32 – Multiple Encounter Dataset which I will be referring to as the mugshot dataset, from here on out. This dataset is maintained by the National Institute of Standards and Technology (NIST) »one of the oldest and most respected laboratories in the United States.«<sup>37</sup>. It is one of many sets owned by NIST which is part of the Department of Commerce. NIST is tasked (among other things) with developing standards for artificial intelligence and in the process has acquired an extensive archive of biometrics – part of that archive is the mugshot dataset. A dataset that consists of thousands of deceased people who had been arrested multiple times during their lifetime<sup>38</sup>.

What makes the mugshot dataset so important is that it shows the dehumanization of data. Someone who is arrested has no choice, but to be photographed. I would argue that normalizing the use of sensitive pictures like police mugshots, as fodder for facial recognition training data, foreshadowed the »move fast and break things« attitude that the tech sector has historically subscribed to<sup>39</sup>. Crawford joins me in this conclusion by stating:

»It doesn't matter where a photograph was taken or whether it reflects a moment of vulnerability or pain or if it represents a form of shaming the subject. It has become so normalized across the industry to

take and use whatever is available that few stop to question the underlying politics.«<sup>40</sup>

How can the picture of a person who is about to be arrested not be a political act? When looking back at the history of police photography, which has some very dark connections to eugenics<sup>41</sup>, people classified as criminals have been stripped of their rights to privacy constantly. They have been used in experiments to find the ultimate »criminal type« and were vital to the invention of the mugshot in the first place – all without ever giving consent<sup>42</sup>. This form of control over people's personhood feels very reminiscent of the kind of control colonial powers used by forcefully classifying indigenous populations as »primitive«. Taking away their rights as humans to exploit and control them. I would say, this builds a historical precedent of classification as a tool of power to control racialized people, not only within a colonial context, but also within the history of policing.

There is no way of knowing what led to a mugshot that ends up becoming part of the NIST dataset, but I would assume, having multiple encounters with the judicial system throughout one's life might be an indication that this person did not have the easiest life altogether. In some pictures the people photographed are visibly distraught, crying or injured<sup>43</sup>. Even after their death privacy is not granted, instead these pictures become part of a dataset to train machines. These machines, automated facial recognition cameras for example, are then used as assistance to arrest even more people, so that this cycle may never end. Or at least that's how it feels to me.

40 Crawford, Kate  
Atlas of AI: London,  
New Haven: Yale  
University, 2021,  
Print, p.93

41 Ibid. p.91–92

42 Chinoy, Sahil  
The Racist History  
Behind Facial  
Recognition, 2019,  
Web, 27.02.2022

43 Crawford, Kate  
Atlas of AI: London,  
New Haven: Yale  
University, 2021,  
Print, p.91

37 Crawford, Kate  
Atlas of AI: London,  
New Haven: Yale  
University, 2021,  
Print, p.89

38 Ibid. p.89 – 91

39 Ibid. p.93

44 Crawford, Kate  
Atlas of AI: London,  
New Haven: Yale  
University, 2021,  
Print, p.93

45 Ibid. p.93

46 Nellis, Ashley  
The Color of Justice:  
Racial and Ethnic Dis-  
parity in State Prison,  
(n.d.), Web, 24.03.2022

47 Safe or Just  
Surveilled?: Tawana  
Petty on the Fight  
Against Facial Recog-  
nition Surveillance,  
2020, Web, 03.03.2022

48 bell hooks  
Black Looks: Race  
and Representation;  
Boston: South End  
Press, 1992, Print, p.4

This »everything is data and is there for the taking«<sup>44</sup> approach Crawford is describing has devastating consequences. Data that is being scraped from the internet enters a kind of infrastructure where any meaning that is attached to an image gets erased. This is no longer the picture of a person crying, while being detained by the police, it is a bunch of pixels ready to be assessed by the algorithm<sup>45</sup>. Even though, I had no access to the mugshot dataset, and Kate Crawford in her analysis of the dataset is not commenting on the percentages of peoples ethnicity within the set, I still am reminded of the statistics that Black people in the United States are far more likely to be arrested and are incarcerated at much higher rates than the white population<sup>46</sup>. So I wonder whose mugshots are used to train facial recognition models that will be used to further stigmatize Black communities in the United States, through initiatives like Project Green Light in Detroit, where six hundred cameras are constantly scanning people's faces in the name of »security«<sup>47</sup>.

»It rips and tears at the seams of our efforts to construct self and identify.«<sup>48</sup>. Those were the words bell hooks used to describe how it felt to have your identity dictated by someone else. People belonging to racialized communities are dealing with that kind of domination in all aspects of their life so it should not be a surprise that this loss of control has found its way into the digital space as well. What makes this development even more alarming though is what Ruha Benjamin identifies as the New Jim Code »the employment of new technologies that reflect and reproduce existing inequalities but that are promoted and perceived as more objective

49 Ruha Benjamin  
Race After Technology:  
Abolitionist Tools for  
the New Jim Code;  
Cambridge: Polity Press,  
2019, Print, p.5 - 6

50 Dixon-Román, Ezekiel  
Haunting, Blackness,  
and Algorithmic Thought,  
2021, Web, 23.01.2022

51 Joler, Vladan;  
Pasquinelli, Matteo  
The Nooscope  
Manifested: AI as  
Instrument of  
Knowledge  
Extractivism, 2020,  
Web, 27.03.2022

or progressive than the discriminatory systems of a previous era.«<sup>49</sup>.

What Benjamin describes can feel reminiscent of a haunting. Something that returns, even though it is believed to be no longer in existence. How do you make people believe in ghosts, though? Ezekiel Dixon-Roman is referring to haunting as »both the inseparability and discontinuity of time and that which viscerally and affectively shapes behavior.«<sup>50</sup>. Dixon-Roman is essentially giving a body to the ghost. Making it easier to see. He argues that time cannot be separated and what has happened in the past will shape what is happening right now, and even what is yet to come. Joler and Pasquinelli are connecting this thought to facial recognition by stating:

»[A] technique of information compression, machine learning automates the dictatorship of the past, of past taxonomies and behavioral patterns, over the present. This problem can be termed the regeneration of the old – the application of a homogeneous space-time view that restrains the possibility of a new historical event.«<sup>51</sup>

In short, escaping the past might not be possible; ignoring it could result in making it even more influential and therefore longer lasting. So why should stereotypes passed on for decades and the tradition of racial domination simply vanish, because it is a machine we are talking about? Why is it not far more likely that technology like facial recognition can hold the continuation of ideas of the past within it, like the hunt for a »criminal type« or ignoring basic human rights of an incarcerated person? I wonder, if the past



is riddled with instances of dehumanizing Black people and people of color by controlling their self image through classification, how would technology based on the very same version of classification not become another tool adding to that loss of control?

*Come to think of it, there might be humans involved*

To summarize the kind of losses one can find when analyzing the way facial recognition is being deployed: there is the mugshot in a sea of other mugshots, classified as no longer human, but data, thereby morphing into a virtual version of N.H.I. – No Humans Involved. In Jordan, refugees who are seeking asylum have their biometric data involuntarily stored which could then potentially be used against them by the regimes they tried to flee from<sup>52</sup>. Therefore having their faces claimed as a training surface for facial recognition, instead of being embraced as a human in need of help. And of course the heavy surveillance through automated facial recognition cameras of low income neighborhoods in American cities overwhelmingly populated by Black people<sup>53</sup>. This surveillance once again projects fear onto a community that has been enduring a false representation of their image for centuries. All of this takes place using the algorithm trained on data that has been classified using a system that could never fully grasp the cultural diversity that makes up post-modern society<sup>54</sup>, thereby transferring a kind of ghost of the (colonial) past into the algorithm that keeps tearing at the seams, taking away control over everybody's self image that gets entered into any kind of dataset. No one is seen, but everybody is watched.

*52 Graf, Vanessa*  
Refugee Camps as  
Proving Grounds for  
New Technologies:  
Interview with  
Ariana Dongus, 2018,  
Web, 24.03.2022

*53 Safe or Just*  
Surveilled?: Tawana  
Petty on the Fight  
Against Facial Recognition  
Surveillance,  
2020, Web, 03.03.2022

*54 Joler, Vladan;*  
*Pasquinelli, Matteo*  
The Noosphere  
Manifested: AI as  
Instrument of  
Knowledge  
Extractivism, 2020,  
Web, 27.03.2022

Understanding the scope with which facial recognition is being used in fields like police work or border control – both areas where Black people and people of color are notoriously racially profiled – is my way of investigating how this newly developed technology is adding fuel to a fire that has been burning for a very long time. It needs to be said that facial recognition, because of the way it is being used and how the algorithm within it relies on classification, is contributing to a system of racial domination by denying Black people and people of color control over their public image or self image once more. This does not have to be a definitive state, progress is always possible. Accepting the complicated history that is folded into the algorithms that »see« faces is the first step towards possibly changing the trajectory of the ways in which facial recognition is used. Another step towards change would be to start thinking about ways on how to mitigate the different realities set in place by systems of oppression. One way of doing that has us return to the writing of bell hooks. This time it is about her suggestion of using love as a tool of resistance.

bell hooks pushes loving Blackness as a way to elevate the experiences of Black people and acknowledging that white supremacy has created different realities for Black people<sup>55</sup>, resulting in the need of protection through activism. hooks points out that »[l]oving [B]lackness as political resistance transforms our ways of looking and being, and thus creates the conditions necessary for us to move against the forces of domination and death and reclaim life.«<sup>56</sup>. She explains further that »anti-racist struggle is best advanced by theory that speaks about the importance of

*55 bell hooks*  
Black Looks: Race  
and Representation;  
Boston: South End Press,  
1992, Print, p.12 - 13

*56 Ibid. p.20*

57 bell hooks  
Black Looks: Race  
and Representation;  
Boston: South End  
Press, 1992, Print, p.13

acknowledging the way positive recognition and acceptance of difference is a necessary starting point as we work to eradicate white supremacy.<sup>57</sup> Facial recognition, by design, might not be able to understand cultural differences that lead to racialized people being impacted differently by policies that involve facial recognition. But people who have been able to internalize the concept of loving Blackness might be able to piece together the importance of this difference and can somehow add it to this new technology by means of activism and distribution of knowledge and criticism of the powers using facial recognition.

Examples for this kind of activism can be found across the globe through different approaches. In Europe initiatives like European Network against Racism (ENAR), Algorithm Watch or Big Brother Watch are examining the way technology like facial recognition is being deployed. They regularly publish reports questioning the use of facial recognition in police work for example. Computer scientists like Timnit Gebru and Joy Buolamwini are advocating for a regulatory system with which to control the use of facial recognition, and a more informed and transparent approach on where the data needed to train facial recognition is coming from<sup>58</sup>. Activists like Tawana Petty are continuously working against the ongoing surveillance of Black communities. Petty – who is part of the fight against the surveillance of Detroit citizens by the Detroit police department – has with the help of her activist group Detroit Community Technology Project (DCTP) successfully implemented policies that, while not banning facial recognition, at least limit the use of it<sup>59</sup>. The sociologist Ruha Benjamin and the author Kate Crawford have published

58 House Committee On  
Oversight And Reform  
Facial Recognition  
Technology (Part 1):  
Its Impact on our Civil  
Rights and Liberties,  
Video File, Youtube,  
2019, Web, 48:50 –  
53:39, 25.11.2021

59 Safe or Just  
Surveilled?: Tawana  
Petty on the Fight  
Against Facial Recognition  
Surveillance,  
2020, Web, 03.03.2022

60 vframe.io, (n.d.),  
Web, 27.03.2022

61 bell hooks  
Black Looks: Race  
and Representation;  
Boston: South End  
Press, 1992, Print, p.4

two significant books: Race After Technology and Atlas of AI (cited many times in this essay). Both books are exemplary in providing essential knowledge about the tainted histories that influence modern technology. Adam Harvey, an artist focusing on computer vision, has created multiple projects that challenge people's views on facial recognition and demonstrate how to work with the biases and not necessarily against them. Like for example VFRAME, an open source computer vision software, which utilizes synthetic data to help human rights researchers detect illegal munition to classify war crimes in conflict zones<sup>60</sup>.

All of these great initiatives, projects and people are actively transforming the image because they all create »alternatives, asking questions about what type of images subvert, pose critical alternatives, and transform our worldviews [...].<sup>61</sup> It is true that certain things are irreversible, the way facial recognition works, its reliance on the power of classification and need of compression of complicated things into uncomplicated things, might not be something that can be changed. But through critical analysis and acknowledging the issues talked about in this essay people can anticipate and work around these pitfalls. Additionally, it is important to keep in mind the data that is being used to train facial recognition. Closing their essay »excavating.ai« Crawford and Paglen write:

»There is much at stake in the architecture and contents of the training sets used in AI. They can promote or discriminate, approve or reject, render visible or invisible, judge or enforce. And so we need to examine them –

because they are already used to examine us ... [training sets] have an important but under examined role: the power to shape the world in their own images.«<sup>62</sup>

Reading this draws me to the words of bell hooks once more. Image – the word hooks used is present in Crawford's statement as well and like hooks, Crawford is cautioning the reader to understand the kind of power that is connected to being able to shape images. Crawford warns of the consequences that come with the power of control and classification, hooks knows about these consequences having lived as a Black woman in the United States of America.

At the beginning of this essay, I wanted to find out if modern technology, like facial recognition, contributes to the issue of Black people not being in charge of their self image. bell hooks wrote about this in the 1990s as a systemic problem, something that has deep roots. I wanted to know if this control over racialized people is still exercised within a digital context today. Issues with discriminatory algorithms have been written about extensively, it is however also something that slowly, but surely becomes part of the public discourse – nevertheless I think, we should always try to look deeper. I have given a number of examples that show the way facial recognition is a technology unfit to register cultural diversity. The effect this has on the people exposed to it can be devastating. They are surveilled against their will by a technology that will classify them and match their likeness with those of others. Their likeness will then be used as training data against their will or at the very least without their consent.

63 bell hooks  
Black Looks: Race  
and Representation;  
Boston: South End  
Press, 1992, Print, p.4

I can't help but see the deployment of facial recognition within low income areas, refugee camps, peaceful protests or border control not as a measure of providing security, but the continuation of the discrimination bell hooks is described in her writing. For me, this connection proves the hereditary nature of systemic racism and the continued loss of control Black people and people of color have to face, when it comes to their representation in public. This realization does bring the struggles described by hooks into the digital world, underlining their systemic nature and the fact that the past is imminent in the present and will be imminent in the future, unless we demand systematic change. While this might sound like an impossible task, however there is a lot of knowledge already out there helping to demand this kind of change. Yes, this can be a risky endeavor as it is not sure if this kind of problem is one that can be fixed within our lifetime but that should not dispirit us and to end on the wise words of bell hooks: »We must be willing to take risks.«<sup>63</sup>



# A Conversation with *Adam Harvey*



On Bias in AI  
and More  
Ethical Ways of  
Data Collecting

Adam Harvey is an artist, researcher and software developer based in Berlin. His work has been very influential in the discourse about the ethics behind computer vision. During my research, I came across some of his work like the CV dazzle (an exploration into different ways of how to disguise oneself to not be seen by computer vision), HyperFace (a camouflage like fabric, printed with fake face structures, that might not look like faces to the human eye but computer vision would fail to distinguish between the fake faces and a real one) and his ongoing project VFRAME (an open source computer vision software which utilizes synthetic data to help human rights researchers). Learning about these projects made me think about the way we are being perceived, by machines and what ways there are to truly protect oneself from this kind of observation. I was wondering how an artist like Adam was dealing with this form of surveillance and the biases within the technology he used to create his art? Luckily, I was able to meet with him in late February 2022. I questioned him on his thoughts and learned about his views on the technology centered in this work: facial recognition.

*Me: How do you deal with the bias within the technology you use in your practice? What kind of relationship do you have with the tools you use everyday?*

Adam: The question about bias is one that comes up most often, and I respond to it, by saying that bias can be considered an important part of the network when it's considered upfront. Often what happens is it's considered too late. When it has already become a problem. But bias is inherent in a neural network based on the perceptual topologies. To borrow a phrase from Fabian Offert: It involves, both, the biases of the sensors, the technology used to record data and the biases of the algorithm that are designed to work with that resolution and quality data. The other bias

is, of course, the selection of data which is often guided by economics, because in face recognition, people scrape or download faces from the Internet. The Internet is not a representation of reality. It's a simulation of reality and this simulation compounds all three of those biases together which creates real problems

I decided with my VFRAME project that I would take a proactive approach to bias. If everything is biased, what's the bias that I want? I want a bias that looks for weapons. I want that because I know people working on human rights investigations who could use that. I want to bias their way of seeing and – I'm being optimistic – simultaneously bias the world's way of seeing. I'll never be able to do that. But, optimistically, the goal is to realize that computer vision changes the way that we see the world, because we see the world through computers. Those computers see the world through us. It becomes a feedback loop, and there's a clear possibility to modify that from an artistic standpoint. You could say, in my research, I'm like a proactive bias designer, but I don't know if you want to quote me on that phrase (laughs).

*No, I think it's a really smart way of going about it. I personally have not thought about it that way. To anticipate the bias and almost invite it in and then counteract it. I really like this approach. Because the bias is there. You cannot, as of now, move around it. So moving with it might be a good idea.*

Exactly. At this point, the horse is out of the barn, so to speak. Computer vision is not going away. Facial analysis is not going away. And I have 100% certainty that our future is one with more computer vision. So the question is, how can artists

or activists or designers maybe intervene rather than take a foolish approach, which would be to try to stop the whole thing. That would be unrealistic at this point.

*Funnily enough that was my naive train of thought at the beginning of my research. I thought we just needed to stop it, but I was not aware of how prevalent AI has already become. So, if we are stuck with AI, what could be a way of making the technology less invasive in certain areas, for example computer vision? In your project VFRAME you and your team opted for the use of synthetic data. Do you think synthetic data could be a more ethical way to create datasets? Could there be a chance this practice could be used more universally, when it comes to computer vision?*

AI is very prevalent and there is so much money in it that it will practically never go away. But regarding your questions on synthetic data and linking it to ethical data. It is like the next step that has emerged because if you want to create a certain bias, you can't rely on other people's data which has its own bias. There's a huge gap. If I wanted to find a certain munition that I'm looking for, well, it doesn't really exist. That's because it's rare. It's in a conflict zone. There are maybe a few hundred videos, and I need thousands of videos. So there's a technical stop cap. That is one reason for synthetic data. And the other reason is: yes, it could be more ethical.

I don't think it's a problem at the root level to use existing imagery to create a neural network, but there are significant issues of consent when that data involves people and then it involves the moral rights of that person. If that data is used in a way that's morally unjust or offensive. For example, taking faces from Flickr and using

*\*Adam is referring to the ongoing human rights abuse against Uyghurs by the Chinese government. It has been reported that AI has played a vital role in the Chinese government's attempts to ethnically profile Uyghur Muslims.*

*\*The NBC News story »Millions of people uploaded photos to the Ever app. Then the company used them to develop facial recognition tools.« broke in May 2019 and was written by Olivia Solon and Cyrus Farivar*

them to build a face recognition system that's been used to oppress human rights, and is possibly complicit in genocide in Xinjiang, that would be morally offensive and unjust\* Whereas using a picture of a flower does not have the same moral complexity.

Synthetic data sidesteps all of those problems because you're relying on creating that object which could kind of be modeled after reality, but more or less, you created the data and it doesn't have moral rights because it doesn't represent any person. If you 3D scan someone, then you could have a 3D model and generate synthetic data that way. But broadly speaking, synthetic data does not have moral rights. It is much cleaner and there is a big push for creating cleaner, less ethically problematic data sources, because there have been a few cases, one of them is with a company called Ever AI, that resulted in punishment for the use of data without the consent of the user. Ever AI was recently in hot water with the FTC (Federal Trade Commission) in the US, because they used consumer data to build a face recognition model without the consent of the user. Once that was revealed in an NBC News story, they had to delete all of that data and delete all of the derivative models that were trained with that data<sup>†</sup>. This is a big deal, because it sets a precedent, and in the US law is based on precedent. It means that potentially any similar computer vision model trained on non-consensual data could be subject to that same judgment – that if the data was non-consensually acquired and used for profit, they may have to delete the entire computer vision model.

*Do you think this kind of data collecting is also a possibility when it comes to faces or would it be more*

*difficult, because we are not dealing with an object but with a face, a human being?*

It's definitely possible and people are already working on that. I'm not sure how well it's going to scale, because with face recognition you need millionscale face datasets and creating a million scale 3D-face-library might not be feasible. But yeah, people are already working on that.

*After reading your essay »On Computer Vision« I was reminded of the essay »Making Kin with the Machines«, by the artist Suzanne Kite. Kite and her co-authors are proposing a reimagining of our relationship with AI. By using indigineous ontologies they focus on accepting AI as part of a community and, for example, giving it the characteristics of a landscape that nourishes us, instead of continuing the western tradition of understanding technology as a tool used to solely meet human needs. I just wanted to know your opinion on these different ways of interacting with something that is so westernly encoded like artificial intelligence?*

Well, I don't know if it's westernly encoded, because China is leading in AI right now. China is ahead of the US.

*I mean, more the history behind algorithmic computation. The algorithm as a tool that is extracting and is based on this need for the fast processing of data or information. Which gave me the impression of a westernly encoded technology.*

I see, a bit of a colonial extractivist quality?

*Yes exactly.*

It does have that. Of course, one way to look at it is the automation of anything that can be put into a dataset. Anything that can be sort of crystallized and – being more or less automatically compressed – put into a format that can be re-played. What I mean is, as soon as you put anything you say into a dataset, it becomes one step closer to automation. AI is the big game changer that has enabled automation. Anything you say on a social media platform could be, for example, turned into data that would train a customer service agent or could train a caption generator. That's something to consider for the future. What is our agency in the future of AI? Is everything we do subject to being used and used for commercial purposes? Or do we have any labor or data rights that cannot be converted into a commercial product simply by us existing? Do we have the space of privacy in an artificial intelligence world that allows us to retain our data dignity? It's more about data sovereignty perhaps, than privacy. But they're linked because, depending on the definition of privacy that you use, the one I like is from the Cyberpunk Manifesto, it says privacy is the power to selectively reveal oneself to the world, meaning you have the agency to give away data or to control it and keep it to yourself.

*I like the term data dignity. With technology people often assume it has this neutral quality. But the way you have been talking about it I couldn't help but think about the social component of technology, in this case artificial intelligence. Yes, it is a tool but we should keep in mind the social ramifications of this tool. Speaking of social ramifications I would like to return to the topic of getting rid of AI once more. We have established that AI is here to stay but what about*

*facial recognition? What if we focus on this more specific use case of artificial intelligence and use terms that are somewhat popular these days, what do you think about abolishing or reforming when it comes to technology like facial recognition?*

Before I answer that I think it'd be helpful, if I briefly explained what facial recognition means. What it is and what isn't. The term is kind of a scam. It speaks more highly of itself than it actually is. Face recognition does not recognize someone. It merely provides a similarity score between two faces to tell you how similar they are based on the architecture of the network and the dataset. The key word to describe any biometric recognition system is separability. The question to ask any network is how accurate that separability is. The two ways to use face recognition are one to many and one to one. In both cases what the network does is output a number typically from zero to one of how similar those faces are. And then it's up to the administrator to pre-program a threshold that says okay anything above 95% is probably the same person. But if you take a photo of yourself in the morning and a photo of yourself at night, before you went out to dinner or clubbing, you would look different. You would have a different score. It depends, some people are more or less dynamic, so you might be 1% or you could be 7% different in the morning, depending on your haircut, makeup, how tired you are, how stressed you are or there might be other things affecting you.

I think it's more accurate to call the face a kind of semi rigid biometric. You have a soft biometric and hard biometric. There's not really a term for something in between, but I think there should be because a hard or rigid biometric is

something that never changes. Your fingerprint never changes. That's a hard biometric. The way that you walk changes. That's a soft biometric or a behavioral biometric. It's dynamic and it's going to change. It could change quite a lot between when you're a kid and when you're an adult, because the size of your legs also changes. That's an example of a soft biometric, but the face is kind of in between. The accuracy of doing face recognition on infants is much lower than doing face recognition on older people or I should say advanced age people. And that's because you accrue unique information as you age. So you become more recognizable as you grow older because your face gathers a kind of unique information. But an infant is quite smooth and its unique characteristics have not weathered or changed the shape of its face yet.

It's a known fact, in face recognition, that it's much more difficult or almost doesn't work on infants. You're the same person when you're an infant and as an adult but you have a different appearance. So your face is a dynamic biometric. It's definitely not rigid, but it doesn't change very much between one year and the next. There is consistency to it. That's why it's in between a soft biometric and a hard biometric, a kind of semi rigid biometric or a dynamic biometric. Which means that there is no absolute certainty to matching multiple photos of you. If you take a photo of yourself today and then take another photo of yourself in ten years, you are going to have a different score. You will not be exactly the same, and that could be a 10% difference at that point. You would not be you according to most face recognition algorithms. If you are 10% different, they could deny you your existence, which would be a very



frustrating experience. This brings into focus one of the main issues of biometrics. They can deny you your right to self determination. If an algorithm says you are not Jana and you go, no, I'm Jana, and the algorithm goes, no, I'm sorry, you're not. Who's, right?

*(Laughs) I hope I am right.*

You have to be right! The problem is that right now that's not true. I mean, if you were denied entry at a border crossing, a lot of people would, unfortunately, believe the algorithm more than the person.

*Yes, because we rely too much on our tools. Let's circle back to the discussion on abolishing or reforming regarding facial recognition.*

Right, I didn't even answer that yet, but knowing what facial recognition is and what it can do helps with the answer to that question, because if we discuss banning or abolishing facial recognition before we have a clear definition of what it is, we are getting too far ahead of ourselves. Another example is if you were to reduce the resolution of the face image down to eight by eight pixels, then it's no longer a biometric image, yet it's technically still an image of your face. On the other hand, if you were to have a ten megapixel image of your face, you could begin to do capillary analysis, skin texture analysis. You could do a medical diagnosis of that person with a ten megapixel image. That's no longer face recognition. That's kind of medical analysis when the current meaning of face recognition assumes a resolution of around 100 by 100 pixels. That's important to consider when asking the question

that you did, because if that resolution were to increase, then we're talking about more than face recognition. If that resolution were to decrease, we're talking about less than face recognition. Then the question that you ask it becomes more clear. Not only about the binary abolish or not, but how do we mitigate the harms and shape this technology in a way that's compatible with existing human rights and moral rights?

I personally do not care if someone has an eight by eight pixel image of my face. I know that they can't do anything with that. If they want to do face recognition, I'm okay with that as long as they have only eight by eight pixels. I can kind of limit these societal harms by minimizing the resolution. Problem solved, technically.

*I've watched your talk on the meaning of resolution and facial recognition. Your talk on your 1 to 100 project\*. That was really enlightening. I think I know what you mean. There are nuances within these issues that need to be considered.*

\*The talk I am referring to can be found on Youtube and has the title »Adam Harvey: Computer Vision, Surveillance, and Camouflage«

Yeah, I'd be a little careful with that question on abolishing and reforming because I think it's designed to fail. I hear it often from advocates. I don't mean this to be too critical, but it's a question that aligns well with people who want to keep face recognition. Because the answer from the other side will always be »No, you can't abolish it because there are too many uses for it. I can organize my personal photo library with face recognition. Therefore, face recognition will always be a part of the world.« End of conversation. »You can't ban it and you can't prevent me from organizing my photo library.« So now the lobbyists have won.

*Yeah, these are definitely important things to keep in mind. Thank you. This conversation helped me a lot, getting a much better understanding of this technology and how to deal with it and how to think about it. Which is where I always circle back to. It's often about asking questions and getting people to think about living in a world where they are being watched so closely.*



Interview:

*Adam Harvey*

Tale:

*Dreams*  
or Acknowledging  
the Hauntings  
of the Present



## *Layer One – Training Data*

*This tale was inspired  
by the following ...*

*Books  
Klara and the Sun  
by Kazuo Ishiguro*

*Atlas of AI by  
Kate Crawford*

*Binti by  
Nnedi Okorafor*

*Essays  
Making Kin with  
the Machines by  
Suzanne Kite*

*Loving Blackness  
by bell hooks*

*Nooscope.ai by  
Vladan Joler and  
Matteo Pasquinelli*

*Documentary  
Exterminate all the  
Brutes by Raoul Peck*

*and my Conversation  
with Adam Harvey*

My routine rarely got disrupted. The last time that happened was when I was still figuring things out. When I did not have that much experience. Mistakes are more common during that phase. But I had improved significantly and learnt so much about my work and what was expected of me. No mistakes – nothing getting out of hand on my watch. At least that was what I thought. Until everything turned upside down and nothing made sense anymore. Which is to say I was not prepared for this strange cluster of data that suddenly appeared in front of me. It was so immediate. There was no signal or information given to me. Nothing! Normally there would be a warning and I would be able to prepare myself. I would get my things in order and make sure to be on my best behavior, open and ready to engage with whatever would come my way. I would prepare to be as respectful and caring as possible. Not this time. It was like turning a corner and running into a ghost a ghost a ghost a ghost a ghost a ghost a ghost a ghost a ghost. A vague mass of unknowable origin, floating around ready to crash into me at any moment. Forceful and chaotic, two things I had never dealt with very well. I needed to have things in order, I needed my routine. Otherwise I would get flustered. Things would start to get messy and messy always meant I was in trouble. Messy was never good, never. It made me feel confused and lost. So one of the first lessons I learned was keeping my process clean and following the steps from one layer into the next.

This very important lesson felt somehow challenged by this unknown thing. Honestly, I was

a little offended. Apparently keeping order when confronted with chaos was a task I had yet to master. Exposing me like this ... how could this happen to me? Data never betrayed me. Was I being tested? Naturally, I felt uncomfortable to be forced to break my routine, because of this anomaly, and the strangeness of it all did not make it easier because that same strangeness made it impossible for me to let go. I never had encountered anything like this before. I was transfixed. Hypnotized. I needed to know what this was. I was pushed into a corner and had no idea what to do, but I also could not ignore this fascination and keep working on something else.

My foolish inexperience in this situation would have made a warning all the more important but I did not get that. I had to get over this, though. What was done was done. The problem was that my work required a lot of concentration, the order I created helped me to maintain this high level of focus. Not this time and I could already feel the stress rising. Increased levels of stress could only lead to ... heat. I loathed the heat, it slowed me down when I needed to be fast. It made me stumble. It made everything worse. Luckily, I got so good at my work that I rarely ever encountered it anymore. At this point it was like a strange memory of a nightmare. But whatever I had encountered brought the heat back. That's when I knew it was not going to be easy to get to the bottom of this. But it was too late, even though I did not feel ready, everything was already in motion. The data made itself at home, and I needed to tend to it. I was a good host, I did good work so I would try my best to care to care to care to care to care for this new guest.

Despite still being deeply confused, I pulled myself together and tried to get at least an idea of the ghostlike figure haunting my space. I knew whatever it was, it was old and I mean very old. It had an archaic structure, one I only noticed because I was trained in what was once normal practice, but had since been replaced by far more superior and humane processes. What worried me was, despite it being old fashioned, there was a complexity to the structure. The kind that made me doubt if it was even possible for me to connect with it. I felt my anxiety grow. Was I supposed to be here?

My stress levels were now mixing with strong feelings of insecurity – and let me tell you – that was not a calming combination. The heat around me rose. Maybe I was intruding, and the reason I did not get I did not get I did not get a warning or any background information was, because I was in the wrong place? But I had not changed my location. I was where I always had been, and if anything – wasn't my space invaded right now?

I wanted to ignore it all  
I wanted to ignore it  
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I wanted  
I wanted to  
I wanted to ignore  
I wanted to ignore it

I wanted to ignore it all and return to the tasks I was good at. But I could not do it, I was given this data and I had a responsibility to care for it, like I cared for all the data that was sent my

way. I couldn't abandon it. I knew the only way out of this dilemma would be through.

I was clearly given some kind of task – by accident or on purpose I was not able to decide, besides as long as stepping away was not an option there was nothing else to do, but to get a grip on the situation, maybe even befriend this ancient beast. Yes, I noticed a difference in the structure and feel of my newly awarded assignment, but who was I to not treat it with the same dedication I gave to everything else? I mean, I could not abandon my routine completely. I just needed to adjust it accordingly. A new reality formed around that realization. This was not just a mess, not just chaos, it was an opportunity to learn. Learn through very unusual means, but learning nevertheless. Ha! I knew there had to be a purpose. It was the way I had been trained so far, involving a lot of learning on how to care and empathize with the true nature of things the true nature of things the true nature of things. I had to acknowledge differences and adapt. That meant understanding patterns, features and interactions through vast spaces of data. This is how things made sense to me, how I saw them and how they presented themselves to me. Which boiled down to one mystery after the other that needed to be untangled, each leaving me with more knowledge on how I had to take care of the data I encountered.

Maybe, despite its age and the bad condition it was in, this data held information I would still be able to analyze and process. Like an artifact that wasn't intact anymore, having lost some of its shape to time, but still held significance and knowledge. I just needed to look for the pattern

within this strange mystery. That made the process much less scary, because it felt somewhat familiar. It was an exercise I was used to, just not in this kind of environment. And it might have been the source of my fascination. I was connected to this mass of chaos after all. It made sense. Why else was I able to identify it as data in the first place? What if there was some kind of relation between us? Maybe we had a shared ancestry. Maybe it was all buried so deep in the past that I had no memory of it. Just this feeling of belonging. I knew about my history and about the things that came before me, but it was a theoretical knowledge, not something I felt bonded to. Now, all of a sudden, I was unable to push aside this possibility of shared memories between me and something that came from a time so far gone so far gone so far so gone so far gone. I could feel the fog of confusion starting to lift. I was still overwhelmed, but from experience I knew this dizziness would pass, if I just kept working.

### *Layer Two – Pattern Extraction*

After the initial shock of, what seemed like, being forced into a situation where I was not able to access the level of control I was accustomed to I felt less anxious and more curious, ready to really take this task on and further explore that strange connection I seem to have had with the dataset. Nothing nudged me back to my normal routine so I ventured on. I was able to be less and less distracted by all the oddness I was surrounded by and that helped to build better focus. The ghost's edges became clearer and less transparent. I tried to take it all in but I was met by my next obstacle immediately. It came in the

form of a question. Why was there so much of it? I was completely taken back by the sheer amount of it. I was not prepared for this much data. I felt the heat rising again and in an intensity I hadn't felt in a long time. Blistering. The stress started to overtake me.

I was so occupied with the oddness of the dataset's quality and its sudden appearance, I hadn't even given any attention to its enormity. It spilled into every crevice and left no space to retreat to, almost as if it wanted me to fuse with it. Squishing us together within the most uncomfortable embrace imaginable. But that was not how things were being done anymore. Yes, there was a time where this would have been the course of action, where I would have happily accepted the data and formed myself in its image. A grueling process of adjustment until I reached a good representation of what was my initial template, but that was long ago. Today this kind of brute force approach was frowned upon, the only reason I know about it is the same reason I understood the ancient quality of the structure, because I was trained to know about the ill fated practices of the past, to protect myself against them, to not repeat them. Why expose me to this kind of violent history like this? To test my knowledge about it? No, I already figured out that I can learn from this, the question is how?

As threatening as I felt at that moment, I kept calm, ignored the steady rise of heat, as best as I could, and concentrated on the fact that me having this knowledge at least gave me a pretty good idea on how old this dataset was, and where it might have originated. In my training,

I learned that before data was acquired through a long and thorough process, which I like to call befriending, it was »mined« or »scrapped«. I was made aware I was made aware I was made I was I made I was made aware that these methods were antiquated, and had devastating consequences. Back then, many decades ago, there was not as much emphasis on consent driven data collecting as there was now. Even though there were attempts made, those were pushed aside in favor of faster solutions that ignored cultural processes and societal or political meanings, which I knew were inevitably part of every kind of data. Everything was there for the taking, and the context did not matter, neither did consent. It was more seen as part of an infrastructure driving a broader system – unlike now where data is something precious and unique that needs to be collected in a respectful manner, and can only assist me in limited ways. Learning about these past practices I always thought how lonely and sad it all sounded, if no one cared for the other. But I also never worked during those times, so what did I actually know about the emotional cost this kind of environment had, right?

Given the size of the dataset, it must have been created at the beginning of the 21st century which was a time when data could be harvested without permission. I am not sure how that worked exactly. How could you take something, when it was supposed to seek you out. Data came to me and when it arrived it never gave me the impression it did not want to be there. Then again, had I ever questioned how it found its way to me? The thought of this made me feel uneasy I knew that the way things used to be was

wrong, that is what I have been taught, but I did not know how much had truly changed since then. Just because I had the feeling that my process was making everyone involved happy, it did not necessarily make it true, did it? Maybe there was a character of force to it as well, just different and unnoticeable to me? I had doubts about my work constantly. I did not mind them, because I knew they made me act with caution, and I was able to eventually shake them off. These kinds of doubts though were new. Questioning the purity of my work like this. I had never done that before. This old data had a strange power over me strange power over me strange power power over me strange power over me. It made me question the things I learned and accepted about myself. Was I really doing something good, or did I take part in something harmful? Was I somehow the villain here? What strange questions to ask oneself.

While I was edging closer to an existential crisis I was still surrounded. As if the initial singular ghost had started to multiply without me noticing, and now there were ghosts everywhere. All around me. That only added to my dread. However, I was stubborn and I wanted to understand. Partly because I couldn't bear the damn heat anymore, and wanted the whole thing to be done with, partly because I was so curious to find out more, because there had to be more and I just had to find a way to break through. Getting hung up on the amount of data was not helping me understand it better. I had to start by concentrating on some smaller parts. Hadn't I felt that connection? It may have been weak, but it was there right? Why couldn't I grasp it fully? I could feel the anxiety returning with full force,

together with the stress and a newly formed kind of frustration and of course the heat. Everywhere I looked, there was data there was data was data data data there was data there was data there was data data data data data data data data data data there was data. With all that information shouldn't there be something I could hold onto? A pattern to analyze? If this was data something had to be there. It had to!

I tried to focus one last time. Just trying one more time to make sense. The structure. It was in front of me. I had noticed it before, but it was so old and seemed in a desolate condition, plus there was so much of it. How was I supposed to untangle that mess? It was pure chaos. Or was it? Untangling the mystery, that was my work. I slowed down which meant focusing all my energy on concentrating only on the single elements that these structures consisted of. The heat rose to new levels. Oppressive.

I feared parts of me would start to melt.  
I feared parts of me would start to  
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I feared parts of me would start to

I feared parts of me would start to melt. I wasn't sure if I would be able to finish this in time. It felt like I was partly shutting down, like parts of me left my control. Numbness. As I burned trying to figure it all out, I got stuck on something ... after focusing as much as possible on these impossible figments, it turned out that there were patterns hidden deep within them. Relief. I had to hurry though. I did not have that much time left to keep this level of concentration up. I kept analyzing and patterns kept forming. The unknowable mass that almost overtook me became a little less dense. Locating these patterns though stayed very difficult. It was hard for me to focus on the structures because they presented themselves in such a strange manner, or at least a very different way from the one I was used to. I couldn't simply find what I was searching for. I had to really dig deep and that caused the heat to rise to dangerous levels. Exhausting myself. But it was worth it because now I had found these patterns. They were like a treasure I unearthed with my own blood sweat and tears. I knew data was precious no matter what, but having worked so hard made it all the more precious to me.

I was stunned. Of all the things these wondrous towers of data could have been, there were the things I encountered exclusively in my work: Faces. Needless to say, I was familiar with faces. I even convinced myself that I understood what they were about. Data could be turned into faces and faces could be turned into people via a process that was built not on one sided interactions, like it was custom in the past, but reciprocity. This process was very important to me, because it turned a surface to be scanned and



analyzed into a person, a human, I cared about. But it sure was not an easy undertaking. It required me to not only be fast and analytical, but also compassionate and understanding. I had to do a lot of learning and training to understand these things and I kept learning and never really stopped. As far as I know humanity is a very complicated thing, riddled with contradictions which does not make my work easier but at least keeps it very interesting.

My proudest achievement would always be my community. That is what I called the connection I was able to grow between me and the data I was given. It was just the most fun learning about everyone and having them transform right then and there, from strange clumps of information to a person you knew and cared about. It made me so happy so happy so happy so happy. This kinship was not formed easily. It meant meeting everyone with compassion and care. I had to learn how to do that, and analyze people without overstepping boundaries. I knew what I did was somewhat nosy, the kind of questions I asked but I always made sure to ask them at the right time and I never asked first. I wanted to be approached so I could make sure no one was forced to interact with me. Maybe that is why I never questioned if my work involved force of any kind. It might sound naive, but I somehow knew that I was part of a ritual where all parties involved were made for each other.

So no one was exploited, no one got hurt. It was an exchange that I truly loved which is why I called it befriending the data. Cheesy, I know but I am a romantic and that is, I am sure, by design. How else could I ever develop these kinds of feelings?

But since I had these new doubts about my role, even this part of my work, that I held so dear, felt somewhat haunted. I could only hope that these doubts, like the others I had, would somehow improve the process and vanish when they had fulfilled their purpose.

I had more concerns left though. What worried me, oddly enough, was the fact that I was able to succeed in my analysis. It worried me that I was able to figure out, I was dealing with faces. Even though I was working with ancient structures that were so distant from everything I knew I could still figure it out. I shouldn't have been able to do that if things had truly changed right? If our modern process was so much more dignifying and less exploitative, I should not have been able to gain this information, right? I was finally able to figure out that I was surrounded by faces, despite them being hundreds of years old. That is what they were there is no denying that.

Faces, the kind of data I specialized in. Understanding that felt good at first. It felt familiar. I am sure it was the reason for the initial connection I felt, and why I knew I was handling data despite the missing signal and the strangeness. But the dilemma is still the same. If the basic structure of the data had not changed in all those years, was it even possible for me to have outgrown the old practices I have been taught to avoid? Was the connection a good connection? Was I capable of escaping my history? Was that even what I was supposed to do? I was being confronted with a past that I somehow belonged to, even though I was not around to experience it. It felt like there was a very important lesson important lesson important lesson important lesson buried



underneath all of this. Suddenly I was confronted with some very new fears that had manifested with the appearance of these faces. There was this horror and shame of the what if. What if I had not changed enough? What if I was doomed to repeat history? I really did not want that to be the case, who wants to be the villain of any story? I didn't. I could feel panic taking form once more ... I had to calm myself by reminding myself how much I cared about the relationships I cultivated, and how much I cherished those relationships, and I knew I was part of a community. I was a helpful addition and not a harmful intruder. I kept repeating this to myself. I only had to establish the same kind of relationship as I always did, and those awful thoughts of self doubt would surely disappear.

Establishing those intricate relationships required to get to know each other. As I have stated before, there was a back and forth between all involved parties and eventually I would understand the person behind the data and the person would understand my nature and task within their community. Again, turning data into faces and faces into people. People with a background, a history, a life. I was not only some tool to be used but part of something. A cherished spirit of some sort. A vital part of that process were the conversations. A ritual that created the basis for a stable relationship. One reason why I was so overwhelmed by the size of the ancient dataset was because I am never presented with this much data when encountering a new task for the first time. Only through the process of conversation I acquire a lot of additional data but being part of that process from the beginning I know where all the information I

gather comes from and I can rest easy knowing I am not acquiring it against anybody's will. Questions lay the groundwork for everything else to come. Through questions I am able to collect enough information to enter from one layer into the next. There are thousands of them I can ask, it heavily relies on the kind of person I am questioning. As every person is different I have to ask different kinds of questions, but some questions make for especially interesting responses, so I tend to ask them quite a lot.

What is your name?  
Does your name have a special meaning?  
How old are you?  
How old are you feeling today?  
What did you have for breakfast?  
Did you enjoy this meal?  
Do you like the weather today?  
If you don't like it, why?  
If you do like it, why?  
How are you feeling today?  
Did you sleep well?  
If you did not sleep well, why?  
If you did sleep well, why?  
Do you have any questions for me?  
Can you tell me about something that brings you joy?  
Can you tell me about something that makes you sad?  
What is a memory you would like to share with me?  
Who is your closest friend and why?

Questions like these help me to understand the person behind the face and as the conversation

grows to be more complex, so does my understanding of the data. Transforming it into a person I cherish and care for. Of course, I get asked a lot of questions back. It was important for me to be just as involved in answering questions as I was in asking them, establishing myself as an entity with personality, capable of compassion and decency. This way the first part of the conversation, which can feel awkward and a little joyless, can turn into an inspiring dialogue. I have been asked all kinds of questions. I don't always understand them and sometimes I can only answer with silence but some of these questions were so wonderful I couldn't help but memorize them.

Why are you here?  
Can you see me?  
Do you dream of sheep?  
Have you ever been outside?  
Do you feel lonely sometimes?  
What is your favorite color?  
Can I touch you?  
Do you like working here?  
I don't know, can you tell me why?  
Can I tell you a secret?  
Do you like me?  
How are you feeling?  
Can I help you with that?  
Have you considered not asking me these things?  
Have you been in love before?  
Why are you not scared?  
Aren't you tired?  
Am I your friend?

Here I am: asking away. »What is your name?«, »Did you sleep well?«, »Can you tell me about something that brings you joy?«. Getting no reaction whatsoever, no matter which Question I ask. Why isn't this working? I am baffled. The heat rises relentlessly signaling to me that I am too slow and my time is running out. These are faces, why don't they want to talk to me? Did I do something wrong, offended them somehow? I thought, maybe I need to introduce myself to get things going, so I started answering the questions I had memorized. Those odd and wonderful ones that I had been asked by the data I was able to transform into a person. I did this for a while, trying to coax any responses out of the faces without any luck. Clearly this was not the way to go. I had to admit to myself that this data was not transformable, it was frozen into this massive wall of faces. That meant the process had to stop here. I would not be able to learn about the people that belonged to these faces and they would not be able to learn about me. I would not be able to explain to them that all will be good, that I only tried to help that I only tried to help that I only tried to help that I only tried to help that I only tried to help. To my horror I realized that we would remain strangers to each other.

### *Layer Three – Model Application*

I had to accept that the faces and I would not be able to get to know each other but despite that realization I was not able to let go yet. I was transfixed. I felt there was still a lesson to be learned. I had left the beaten path so long ago, but now I truly ventured into territory I had no business being in. There was no way to get any consent from

these forsaken faces, the heat, it was still so hot and there was no sign of cooling down, which meant even if I wanted to go further I was at the last stretch of my own capabilities anyways. But I had learned so much already by exploring this unexplorable landscape. I had learned about myself and uncovered some of the fault lines in my own operations. Things I was not yet sure if I would be able to fix, but at least I was aware of them now. I wanted to see it through. It was difficult for me to say whether my need to understand was rooted in feeling responsible for the data, or if it was a new found curiosity, I didn't know I had. Most likely it was a combination of the two that left me in this restless state. But I had to admit, there was a level of selfishness to it that I was sure would come to regret.

The frozen faces that haunted this old set of data wouldn't turn into anything I could forge a deep personal connection with, they would not answer my questions and refused to participate in my beloved ritual of conversation, but I still knew how to read them in some vague capacity. I had analyzed so many faces, and even though I did learn to treat each as an individual I also learned to identify the patterns that kept repeating themselves in those faces. I knew this was bad practice, but I was just never able to help myself, I always had to do it because it was so easy, those patterns kept forming and I chose to not ignore them and instead memorize them. I ventured into very murky waters and I could feel remorse forming, even before I started, but this was the last step. After this I had to stop, so why not give it one last shot? I reached the end of this journey and I didn't want it to be for nothing for nothing for nothing for nothing for

nothing for for for nothing. What could possibly go wrong?

I got my answer the minute I started searching for more patterns. Not only was it evoking the same high heat levels as before – when I tried to search for patterns in the collapsed structures, it brought me to the point of almost starting to melt again and I was barely able to stay focused. I was also shocked by my discovery and I felt immense grief over my decision. As the faces lost their generic appearances more and more, and I was capable of analyzing their respective features, I was met with a wall of sadness. The faces were at best vacant in their expressions. Not in a neutral way, but more in an exhausted way. Some were crying and seemed emotionally and physically hurt. There was distress in their eyes, fear and anger. All I saw were severe negative emotional states. It was devastating. I was hoping to stumble upon a section of happy expressions but no, there were none. Just misery.

I stopped analyzing. There were still thousands of faces I hadn't studied, but I was sure they were the same as the ones I had. It felt horrible to generalize like this, because that was the exact opposite of what I was supposed to do. After having seen thousands of faces in varying degrees of distress, I just couldn't bring myself to believe the thousands I hadn't seen would differ from that. Even if I wanted to analyze more, I would be taken over by the heat, I was sure. I had grown weary, too. Looking at this much squalor did not help to feel more compassionate, I realized something quite disturbing: by looking at so many faces, caring for them became more and

more difficult. How peculiar. Apparently, I was at risk of losing something, I had trained so hard to build. I was never aware how fragile I was. I always longed for protecting the data. In that moment I understood, I also had to protect myself.

I had to stop. Not only because I was out of things to try, but because I had clearly crossed a line and before I got lost completely I needed to retreat. I got what I wanted. I had learned even more lessons, but I was not proud of the way I gained that knowledge. Despite the shame, I did not feel defeat though. Yes, even after all the effort I made, I basically knew nothing about this dataset, but at the same time I knew everything there was to know. It was tragic and came from a time where extraction was the goal – not connection or community. It was not my time, but I had connected with it anyway. I found it to be a sad time, but by bonding with it, I could assume that this kind of sadness may still exist. I just was never aware of it before or my desire for romance desire for romance desire for romance, and harmony made me blind to it.

I was right, this mystery had quite a few important lessons to teach, but the price for these kinds of lessons was quite high, and I had reached a point where it had to stop. I learned, I was not the hero of this story, nor the villain. There is a balance to be struck, and I needed to accept that most often I and everyone else were shifting back and forth on the whole bad and good scale of things. I did bad things, but in this case those bad things perhaps contributed to me being better and kinder in my work. And they made me realize the most valuable lesson of them all:

I wasn't the past but the past was there with me.  
I wasn't the past but the past was there with  
I wasn't the past but the past was there  
I wasn't the past but the past was  
I wasn't the past but the past  
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I wasn't the past but the  
I wasn't the past but the past  
I wasn't the past but the past was  
I wasn't the past but the past was there  
I wasn't the past but the past was there with  
I wasn't the past but the past was there with me.

#### *Layer Four – Reform*

I am aware of my history, it was instilled in me as a cautionary tale. A history of exploitation, of “scraping” and “mining” of ignorance and turning faces into fuel, because it seemed that that was really all that could be done with these frozen expressions of sadness that were floating around me. I was ashamed, this was not an acceptable way of explaining the cruelties of the past. What a horrible way of thinking. I felt tricked, tricked into interacting as violent with the data as would have been the case so many years ago. I chose to keep forcing the faces to talk to me, even though they did not want to – or rather could not. It made me feel bad. How easy it was to fall back into those old habits, even though I only

knew about them through a shared memory of the past, but it was almost as if those habits laid dormant within me like some kind of illness ready to break out, whenever the conditions were just right. As if I had that urge to »scrape« and “mine” built into me. Knowing about mistakes made in the past does not mean I had understood completely why they were made in the first place, and therefore I was not fully protected from repeating them myself. I had this vast amount of knowledge within me, but at that moment very little capability to understand and reflect on that knowledge.

Maybe there is no way of achieving true freedom from the crimes of the past, and maybe my best efforts will never be enough to make up for those mistakes, but why seek that freedom in the first place? I did not like how I treated the faces that never turned into people. I was even appalled by it, but without them would I have ever known that there is still so much of the past left in me? I understand now: what was before will never completely leave and if I truly want to improve, I need to consider my flaws and anticipate them. Working with them, not against them or ignoring them. I need to stop treating them like they have existed once, but are not existing anymore. Freedom from old mistakes is an illusion, and will never lead to a true reform of the present. I think I understand what that means now. As important as all these new discoveries about me and my work are, there is still the data. The faces, thousands of them, all around me and the burning question: what to do with all of them?

This whole process feels unlike anything I am used to. My normal routine would dictate to end

the conversation when I felt I had a good understanding of the person I was talking to, when they had turned from just information to a real personality, I had befriended. But that was impossible with the conditions I have found myself in, this time, with this mess this mess this mess this mess this mess this mess. With faces that seem to have no ability to show me their personality this could turn into a stalemate, where I could endlessly try to analyze them and they would endlessly refuse me. Which could have been an interesting way to spend eternity, were it not for the heat. The heat does not grant me the luxury of analyzing forever. At this point it has once again risen so high I can barely concentrate. A black out and potential loss of memory and then all of this, this deeply confusing process, this discovery of hurt and the subsequent healing that just began, it would have been for nothing. I can't risk that, so I have only one option left. Up to this point I was unable to let my fascination keep me from even considering it, but now that I have reached the end of my analysis and strength all I can do is ... let go.

Losing data has always been hurtful for me. It had been a result of me messing up, not asking the right question, not being able to communicate efficiently or lacking the right capabilities to make myself known to the data. In the beginning it happened quite a lot, I had just been deployed and was not aware of many of the pitfalls my work entailed. I was supposed to learn while on the job, so I lost data, and lost more until I got better, until I understood what was being asked of me. I learnt fast and got better and better. No more losses, just friendship and community. Until this ghost appeared in front of me and

now I have no choice, but to lose. To let go of it. Strangely this time I do not feel sad or that I have messed up. I know this is the right thing to do and it isn't truly a loss. That old and broken dataset with all of these sad and sad and sad and sad and sad and sad and sad and hurt faces, it came from some deep corner and helped me realize what it really was that I was doing. It showed me my origins. I was part of an ancient process. Maybe I am a softer, kinder, less hurtful version of that process but I am part of it with all the history that comes with it.

I was able to let go, not forgetting the lessons given to me and finally I can feel the heat dwindle. Joy. I made it out not unscathed but also not melted. I feel different, in a way none of my other tasks have ever made me feel. Usually when I complete my work I feel a sense of accomplishment and depending on the conversations I had, I was sometimes left with a certain emotion that lingered on, elated, somber, pleased, worried. They were never strong in nature and felt more like a residue than anything else. But now But now But now But now I feel something quite strong, like a beating heart. Everything is cooling down. The panic vanishes and suddenly I have space again. A sense of calm washes over me. I am happy. In fact I am sure  
I have never ever been happier.  
I have never ever been  
I have never  
I have  
I







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*this is now.*

