AI Open Platform
Invisible underlying algorithms
Megvii/Face ++
Meitu AI
Cloud AI
Azure
AWS
...
How do algorithms and synthetic organisms look at faces?
Craiyon, formerly DALL-E mini
Craiyon is an AI model that can draw images from any text prompt!
DALL-E mini by craiyon.com on Hugging Face
"If machine vision can guess sexual orientation it is not because sexual identity is a natural feature to be read [but because] we are teaching our machines the language of technopatriarchal binarism and racism'.
- Paul B.Preciado
Research on Face- tracking and 3D modeling Bias
Research on Face-tracking and 3D modeling Bias
The following research is based on the process and content of my graduation project named "Nicely Nicely all the time! " the objective is to explain the 3D modeling, 3D photogrammetry and face tracking, which I have applied over the course of my projec...
BiasI
In the course of using FaceShift, the first step is to generate an intermediate model by means of scanning the role player's face. After this, the facial expressions are well-matched. After scanning the role player's face, I find that the eyes of the primary model were generally bigger than the real-life model him/herself, which means I had to manually reduce the size and depth of the eyes.
If I do not do this, the tracking system will identify my eyes as barely closed. In other words, when I open my eyes, the role player's eyes stored in the program remained partially opened.The images on right reveals the process ofadjusting the eye size of my modelled face. The left eye was captured after adjustment.
Online demo : http://cvl-demos.cs.nott.ac.uk/vrn/ [visited May 20, 2018]
Bias II
As illustrated here, in this experiment I use a photograph of myself (Asian), looking from the side, the face model produced through 3D Face Reconstruction is not Asian. At this point, we could say that the computational mode is based on a Caucasian outline or bone structure. In general, Asian don't have such high brow ridge and nose bridge.
ADDING BONES USING METARIG
Bias III
At this point I applied the bones of Meta-Rig to match the model. As the bones that the Meta-Rig provided were of Caucasians,Ihad to adjust the structure of the bones such as the nose and the brow ridge, to match the bones and the model(Asian)
In a sense, as the skeleton could automatically fit the plug-in program, it only required one basic skeleton.
However, why is it based on a masculine skeleton of a Caucasian?
Bias IV
In the process of adjusting the model, the MakeHuman fails to represent personified images in good detail even though it is capable of producing 3D avatars of different races. For instance, when creating an Asian avatar, I found that the software could adjust the size of eyes and the depth of sunken eyes in a limited scope, however, the adjustable range of distance between the eyes and the eyebrows were too limited and inadequate.
Generally speaking, eyes of Asians are not as sunken as Caucasians, which is why there appears a wider distance between their eyebrows and eyes. The MakeHuman, however, failed to notice such an issue. As a result, it left much to be desired in terms of adjusting the position and height of the eyebrows: the space between eyes and eyebrows remained quite narrow even though I adjust it to the maximum extent. Accordingly, when creating an Asian figure, it is easy to see a weird face characterizing Asian's facial features transplanted to a Caucasian's face.
I am not the only one who has noticed this an issue, the following is an excerpt of what another user called Blindsaypattern published on MakeHuman forum.
blindsaypatten, Difficult to model Asian features. makehumancommunity http://www.makehumancommunity.org/forum/viepicphp?f=3&t=14125 [visited May 20, 2018]
Algorithms bias
YOUTUBE-8M DATASET
I analyzed the videos using hashtag #street-fashion (183 in all).
• Videos of Asians 44
• Videos of black people 37
• Videos of mixed-race people 9
• Videos of Caucasians 115
• Videos of brown people 7
• Failed arithmetic 1
Case 2
An Asian men posted a [asian Face ID FAIL] video on YouTube, illustrating that his girlfriend can use the Face ID to unlock his smart phone. It will even accept online payments using the face recognition payment account.
Passport photo robot tells applicant of Asian descent to open eyes
Case 3
The case of Richard Lee
Passport robot tells applicant of Asian descent to open eyes, New Zealand man Richard Lee was subsequently rejected by facial recognition software.
Algorithms bias
THE DATABASE OF HUMAN BEHAVIOR BY THE UCF CENTER FOR RESEARCH IN COMPUTER VISION (HMDB51 & UCF101)
The database collets a range of videos featuring 101 kinds of daily activities of human beings, I picked some of them and calculated the data as follows:
GANs
Generative Adversarial Networks
2014
2015
2016
2017
2018
These are my analysis of the major large-scale databases using different hashtags. Clearly, the collection of these databases about human behaviors, sounds and visions is all predominantly from Caucasian.
In the majority of the programs I use, the boning, skin, texture, hair and height ofthe body are all designed to represent Caucasian body types. As a result, it is extremely difficult to create an Asian, African or brown-skinned avatar. As the Caucasian avatar is the base of all possible models, for my work at that time I had to make the choice to either go through the intensive workflow to modify the details or make a compromise.
Although the human face has the same structure, the differences lie in the details. If these differences are ignored during the engineering process of the software, when all Avatars are modelled, the program will be built following discrimination and prejudice.
Face++ > Facial Recognition> Face Detection
https://www.faceplusplus.com
In 2019, the AI platform Megvii/Face++ launched the 'beauty score' function. Meitu AI launched the function of 'Selfie Beautification'.
This function can analyse a face and assign it a score out of 100 based on criteria such as liveliness, attractiveness and symmetry.
Who decides what we? consider as beautiful?
Meitu AI
The Meitu Open AI platform has also released the macroscopic facial analysis feature, which has a face analysis feature with a score option for aesthetic values.
Figure 1: Aesthetic value of an original photo without any filters or modifications is 70.
Aesthetic value 70
Figure 2: Aesthetic value of an overly modified photo with beautiful stereotypes is 85.
Aesthetic value 85
Meitu AI Open Platform/ Macroscopic facial analysis
https://ai.meitu.com/algorithm/imageProcessing/beautify?t=1615932059007
Megvii/Face++
What role do sexism, racism and ableism play in this context?
Score given by male 77
Score given by female 79
Figure 1:
Original skin tone of the model received beauty scores of 77 and 79.
Score given by male 83
Score given by female 84
Figure 2:
Terrible photo with roughly brightened skin tones gets beauty scores of 83 and 84.
Face++/Megvii
Facial Recognition
Face Detection
https://www.faceplusplus.com
Meitu AI
According to the technology companies, their users include social media apps, beauty programmes and plastic surgery software, while their customers range from home users to large corporations.
Some apps make use of the algorithms and databases of these technology companies. An example of such an app is one that is used for micro-plastic surgery, which has been downloaded by more than 3 million people in China.
In 2019, there is so-called 'Instagram Face' was first discussed report in the 'New Yorker'; the combination of algorithmic images and surgical interventions has established a new aesthetic—the so-called 'Instagram Face', coined by the Kardashians and Jenners.
They also discuss the blending of facial features, including race, and how these treatments and filters make it more difficult to categorise people's ethnic groups—a phenomenon the author refers to as **'Racial Ambiguity'**.
This trend is in between 'Natural' and 'Technical', and we can actually identify that it has been filtered and modified. This trend can also be considered a logical consequence of mechanisation and Web 3.0. Filters are based on machine learning
THE AGE OF INSTAGRAM FACE
How social media, FaceTune, and plastic surgery created a single, cyborgian look.
"There was something strange, I said, about the racial aspect of Instagram Face-it was as if the algorithmictendency to flatten everything into a composite of greatest hits had resulted in a beauty ideal thatfavored white women capable of manufacturing a look of rootless exoticism.
We're talking an overly tan skin tone, a South Asian influence with the brows and eye shape, an African-American influence with the lips, a Caucasian influence with the nose, a cheek structure that is predominantly Native American and Middle Eastern."
Social-Media Filter
Instagram
Snapchat
Weibo
TikTok
Facetune
...
According to user behaviour, social media will push and update relevant content using AI algorithms.
Filters in such social media will push and create based on algorithms and databases.
Pro Filter Arguments:
— The beauty filter provides young people with a quick way to gain social approval and opens up more social opportunities for them.
— Economic Aspects (Beauty Products, Influencers, Streamers, etc.)
According to Dr Egger, long before the development of social media, the source of our insecurity was failing to meet the beauty ideals portrayed on magazine covers. We no longer compare ourselves to an airbrushed elite but to our airbrushed peers and selves.
The average millennial takes over 25,000 selfies in their lifetime.
Association Between the Use of Social Media and Photograph Editing Applications, Self-esteem, and Cosmetic Surgery Acceptance
https://www.liebertpub.com/full/doi/10.1001/jamafacial.2019.0328
In a recent American Academy of Facial Plastic and Reconstruction Surgery survey,more than 40% of surgeons said looking better in selfies on Instagram, Snapchat and Facebook was an incentive for patients of all ages to get surgery.
Instagram
Instagram Targeted advertising
Tik Tok
Keine Abschaltmöglichkeit: TikTok legt ohne Erlaubnis Filter über die Gesichter von Nutzenden
Tinder
Tinder says it no longer uses a 'desirability' score to rank people
Snapchat
'Snapchat Dysmorphia': Is the Stress of Social Media Driving Teens to Plastic Surgery?
Snapchat
selfies as a primary motivation behind getting a procedure
Behind an internet celebrity-
Alarge team of assistants, PR publicists, writers, social media specialists, AI/MLs and other tech-tools and beauty surgeons and fashion designers and cosmetic artists, stylists and media partners and sponsors/commercial partners are behind this, working together..
On the one hand, social media makes the general users believe that all resources and data traffic are horizontally distributed, which can be considered a bubble illusion of the 'decentralised network'; on the other hand, the operation of Internet celebrities is inseparable from the capital and the Internet's vertical hierarchical control strategy.
Plastische Chirurgie Industrie
Recursive loops in the digital and physical realms create dynamic facial existences.
The plastic surgery app has been simplified in social media style. It may increase the user's acceptance of the surgery.
However, behind a large number of users, the algorithms of these programmes tend to be unfair. Dark skin colour and flat faces are undesirable.
Of course, patients can be affected by factors other than AI algorithms, social media and the plastic surgery industry. However, there is no doubt that related industries have benefited.
There should be no standard for beauty, but these technologies have, whether intentionally or unintentionally, made it highly uniform for all.
The violence of the most vulnerable bodies through the capitalist system, sexist, patriarchal structures.
Moving beyond *Foucault's theory of sexuality as the 'technology of sex'*, de Lauretis moves forward to reconceptualise gender, *to think of gender as the product and the process of several social technologies, of techno-social or bio-medical apparati.*
Technologies of Gender von Teresa de Lauretis
ISBN:9 780333486887
ISBN-10: 0333486889
Capitalism has made 'self-optimisation' and the pursuit of beauty competition.
3D Printed Models Revolutionize Cosmetic Surgery
you know because then its in real life
A survey of Instagram users revealed that some users want to be as similar to their virtual images on social media as possible, and they will choose plastic surgery to make their faces look like these in filters in reality.
So-Young APP
Gemei APP
RED APP
Xiaohongshu
Meitu APP
...
On Plastische Chirurgie app, users can:
1. write reviews, comments and journals about their treatments
2. post before and after selfies
These apps includes:
1. a location-based search function for clinics
2. a link for users to connect with doctors for live-video consultations
3. payment services
So-Young APP
SoYoung Technology
So-Young is a cosmetic surgery app with over 10 million downloads, which uses the algorithms and database of the Megvii AI platform.
One of the main factors for the rapid growth of the users of the platform is its similar style to social media.
Face scan and flaws analysis
Gengmel APP
Cosmetic surgery app GengMei raises $50 million led by Meitu - TechNode
statista
Beauty & Personal Care
The beautyindustry is a huge market, only in Germany has a turnover of 16 million euros peryear-each of us spends an average of almost 200 euros a year on beauty & persona care
This App Lets You "Try On" Cosmetic Procedures Like Botox, Brow Lifts And Rhinoplasty
Take the guesswork out of plastic surgery? Um, yes please.
AEDIT
How Artificial Intelligence Is Revolutionizing Aesthetic Medicine
Using advanced technology that was once exclusively available to medical professionals, this super app lets you personalize realistic simulations of cosmetic procedures and treatmentsfrom lip augmentation and rhinoplasty to eyebrow shaping, microblading, and more.
With AEDIT, seeing how a cosmetic procedure would look, learning more about it, andbooking with a board certified provider is as simple as snapping a selfie.
CRISALIX
Vorher
Nachher
QUESTION:What makes The AEDITOR different from other AI/AR/ML tools in the beauty and aesthetics space?
POWERS:In the 'try it on space' there are really no competitors that do what we do. There are analogous products like Facetune and FaceApp, but those are not medically accurate and are meant to be used on social media. Our application is the only 3D medically accurate beauty app that allows users to try on procedures. The medicallyaccurate applications, like Vectra and Crisalix, are more physician-focused, so they don't compete in the consumer space. Additionally,our technology runs across platforms. It's not just confined to the iPhone. People can scan their faces and we can render it in any web-enabled device.
Zoom Dysmorphia
2021 PLASTIC SURGERY PREDICTIONS
Despite predominantly homebound existences, plastic surgery is booming. 70% of surgeons have seen an uptick in bookings during the pandemic, with millennials and Gen Zers constituting the largest age group, surpassing Gen Xers and Boomers, with a much m...
Anything that is visible outside ofthe COVID mask or on-screen, or in other words anything from the chest up, has seen a procedure increase. The Aesthetic Society, in its 2021 plastic surgery predictions, said thatjawline contouring, thanks to those unflattering computer and smartphone camera angles, will gain popularity.
Zoom Dysmorphia | How Conference Calls Have Affected Our Self-Image
Similarly to Snapchat Dysmorphia, which made headlines in 2018, people with Zoom Dysmorphia are turning to their plastic surgeons to fix flaws they obsess over on their screens.
We must understand that smartphone cameras are distorted, so the calculation of 3D models based on photographic technology is inaccurate, and it does not present our real face.
Camera Lens
Understanding Lens Distortion
In a previous post, we went over the geometry of image formation and learned how a point in 3D gets projected on to the image plane of a camera. The model we used was based on the pinhole camera model. The only time you use a pinhole camera is probably ...
Barrel
Pincushion
Mustache
Examples of radial distortions
26mm
29mm
32mm
35mm
44mm
48mm
60mm
70mm
78mm
85mm
95mm
102mm
120mm
130mm
160mm
200mm
Distortion (optics)
Although distortion can be irregular or follow many patterns, the most commonly encountered distortions are radially symmetric, or approximately. So, arising from the symmetry of a photographic lens. These radial distortions can usually be classified as either barrel distortions or pincushion distortions.
Biased algorithms and echo chamber effects may lead to:
Eliminating aesthetic diversity
The mainstream beauty filters seek smooth and flawless skin, slim chins and big shiny eyes while eliminating dark circles and wrinkles. This beauty filter creates a set of rules for beauty standards. Within the rules, everyone is young, beautiful and slender.
Identity anxiety
The use of beauty filters can also create a psychological gap and a self-identity crisis. When the ideal image does not match the reality, there is a danger that the social system that people have worked so hard to establish may collapse.