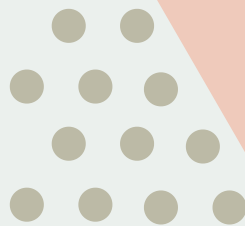


case
study

FACIAL RECOGNITION



emerging
technology



Facial recognition technology will change the way we live | The Economist

technology overview

Facial recognition is a way of analyzing human faces through a recognition system that uses bio metrics to distinguish facial features from a photograph or video.

HOW IT WORKS

Facial recognition works similarly to how we identify our friends and family through facial features like eyes, mouth, nose and how they look together. The database storing images is based on an algorithmic scale that stores facial feature data until when accessed.

WORKING WEAKNESSES

Consumers have also noted that facial recognition cannot fully identify people of color, and in particular black women. A study by the National Institute of Standards and Technology indicated that the technology was more likely to misidentify the face of West and East African and, as well as East Asian people. In turn, the lowest number of false positives was from people from Eastern Europe. The research also showed that false positives were also higher for women than men in all cases.

ETHICAL DILEMMAS

Major ethical problems around facial recognition arise around the privacy, safety, and fair use of the technology. The technology uses the same database that stores mugshots and driver's license IDs to identify people in security lines and videos. One of the primary reasons for concern is the lack of federal regulations in the world of facial recognition technology.

PURPOSE

The concept of facial recognition for consumers is to promote the most efficient experience, and accessibility. In addition, consumers usage of facial recognition affects how the marketplace will direct products towards the consumers preferences and facial expressions.

Facial recognition also has the opportunity to impact the user's experience in the singular user setting by using it to protect their data and minimizing information and identity theft. The user's experience within the world of technology and efficiency will be increased to match the changing experiences of society.

Within the mechanics of facial recognition, there are many variations of facial recognition that have been created with each having their own consumer gains and risks. This case study will cover the overarching feelings, thoughts, and gains consumers have towards facial recognition and how we can see that affect the future of supermarkets.

audience interaction

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QUALITY OF INTERACTION

The interaction between consumers and facial recognition has been developed to be almost seamless and almost unnoticeable. The design between having a seamless way to identify people or unlock smartphone devices helps improve the quality of experience for consumers so they feel its in one fluid action that they can have so much at their fingertips. For example, consumers using smartphone devices with facial recognition only have to glance at their screen to have it unlocked, as opposed to typing in a passcode in which breaks down the experience of using technology to quick singular actions. While consumers like the government, interact with facial recognition by bringing the power to target people more precisely.

WHAT THE USER BRINGS

The user brings to the experience their insights and preferences that better help stores cater and stock products that consumers purchase frequently. Facial recognition can be used to track areas of stores where shoppers spend the most time in choosing a particular product. The user also brings into play the emotional facial expression that can help indicate what levels of satisfaction or disgust people may feel towards displays or products. By bringing in the factor of emotion to track an audience's feelings towards certain displays like race-based campaigns, consumers bring the real-time factor in sharing what different kinds of people may react.

AUDIENCE PERCEPTION

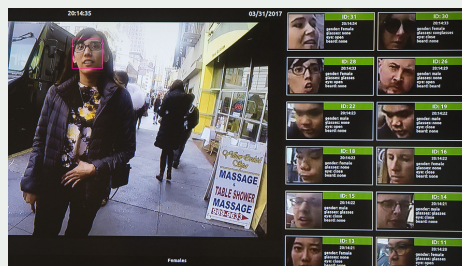
Overall US consumers express a different attitude across groups who are beginning to use facial recognition. A study was done by the [PEW Research Center](#) on how people feel towards facial recognition. The majority of Americans noted that they trusted law enforcement to use facial recognition but were less trusting of advertising and technology companies. Almost half of the Americans who participated in the study believed that advertisers' ability to see how people would respond to public ad displays was not acceptable. While over half of Americans believed that it was acceptable for law enforcement to use facial recognition to minimize the number of security threats in public areas.

PERSONAL EXPERIENCE

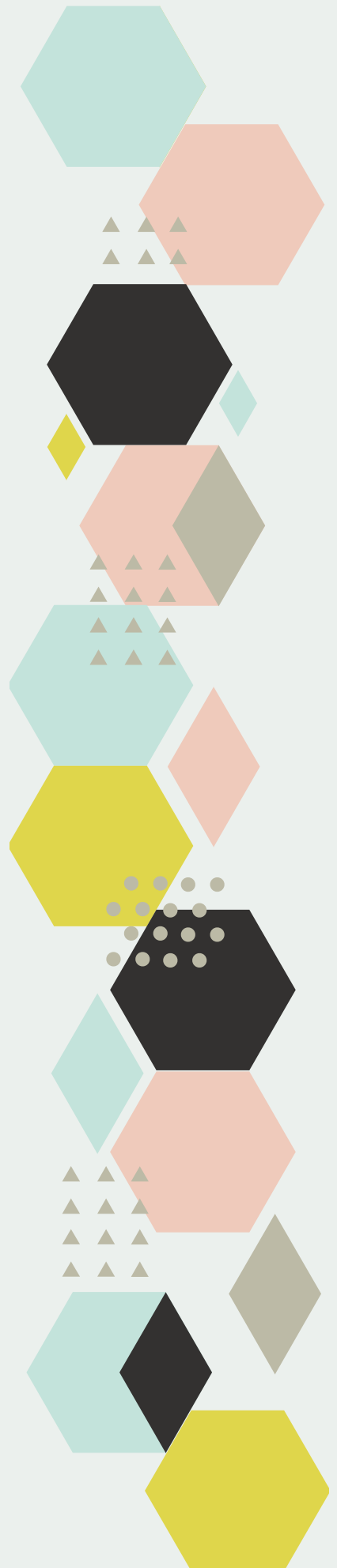
One of the most frequently used experiences with facial recognition today would be unlocking smartphones and electronic devices. Facial recognition makes using phones fast and convenient with no buttons or touches required. In my experience, the most beneficial aspect of facial recognition has been when I'm cooking. While I cook, my hands are usually either full or have food residue laced on it. With my hands preoccupied, I can easily look over my phone and unlock it to read the rest of the recipe I'm following.

The fluid motion of just looking at my phone to unlock information allows me to quickly access knowledge just at a glance. When I use facial recognition in the kitchen setting my main motivation is to keep my phone clean from food crumbs. This small, but yet important concept of keeping my screen clean is something all touch screen users share across the board. Whenever there's even a small speck of dust on my screen, my insides squirm, as I almost instinctively reach to wipe it off. This same theory applies to when I'm trying to prepare a meal, with facial recognition allowing me to save the time of washing my hands before touching my pristine screen.

"The fluid motion of just looking at my phone to unlock information"



Law enforcement use of facial recognition





facial recognition take-away for the supermarket space

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BENEFIT OVERVIEW

Key affordances that can benefit the user's experience when using facial recognition are shorter checkout lines with the use of automated checkout systems. This system works by allowing consumers to tie their faces with a payment system and allow them to simply walk into the store and grab goods off of the shelf and instantly checkout. This can be also used in age verification for products like alcohol or medicine restricted items that verify consumers' age without having to present a form of identification at purchase.

SUPERMARKET SPACE

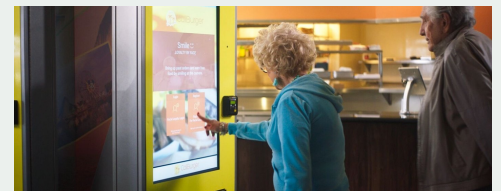
Supermarkets will also be able to use facial recognition for loyalty programs in place of showing a membership card or stamp or discount card. These loyalty or membership programs have been able to track what consumers have purchased in the past. For example, CaliBurger uses facial recognition to track their loyalty member's favorite meals and suggest it for their next purchase. This concept can be applied in the supermarket space with customized newspaper or email coupons for items they frequently purchase. This system can be used in place of having to type in a phone number at purchase or carry around a card.

EMPLOYEE USES

Facial recognition can also be used to enhance the efficiency of employees in the workplace. This technology can recognize employee faces to log in to check out machines or enter employee restricted areas like stock or back inventory spaces.

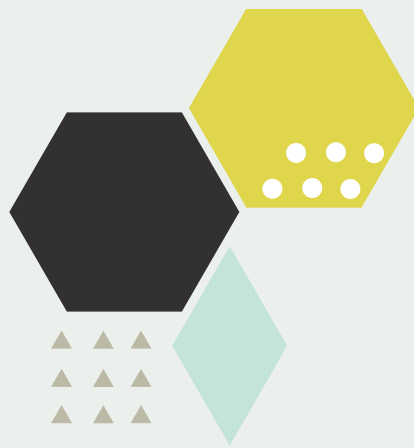
SHOPPING EFFICIENCY

Facial recognition can also be applied to supermarket visits like HEB instacart where the consumer can order their groceries online and go to the store to pick up groceries by contacting an employee. But, with the use of facial recognition, the possibility for this hopper to have in store recognition cameras cuts out the extra interaction between worker and customer verification, allowing consumers to save time and more efficiently pick up groceries.



Paying with facial recognition at CaliBurger





SOURCES

<https://www.forbes.com/sites/nicolemartin1/2019/09/25/the-major-concerns-around-facial-recognition-technology/#5e84cd134fe3>

<https://us.norton.com/internetsecurity-iot-how-facial-recognition-software-works.html>

<https://www.wired.com/story/best-algorithms-struggle-recognize-black-faces-equally/>

<https://nvlpubs.nist.gov/nistpubs/ir/2019/NIST.IR.8280.pdf>

<https://www.facefirst.com/blog/ways-future-stores-will-use-face-recognition-to-power-more-convenient-checkout/>