

Facial Recognition and Privacy

WRT102

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Abstract

Facial recognition is a growing form of AI that is found in many technologies, from surveillance cameras, to personal phones, and to even restaurant orders. This essay argues how facial recognition is found everywhere a person goes, and how it can be dangerous to society without regulation. Privacy issues including how to manage facial recognition in one's life on their personal devices are addressed. Both sides are addressed to whether facial recognition exists. However, facial recognition is not going away anytime soon. Rather, it is continuing to grow and will be a prime source of identification for the future.

Keywords: Facial recognition. Privacy. Security. Passwords.

Facial Recognition and Privacy

Introduction

Facial recognition has become a widespread form of technology for millions of people, especially found in handheld phones. The newest way to unlock a phone is now through screening the users face as a new form of a passcode. In 2016, the Galaxy Note 7 and Apple iPhone X started to use facial recognition (Louradour, & Madzou, 2020). The main reason to use this is to identify phone users' identity and make it more convenient. Privacy becomes a main question when it comes to facial recognition, and not just on someone's phone. Facial recognition is found in airport security, in criminal justice, and even at restaurants. There have been some studies that focus on whether this form of Artificial Intelligence (AI) makes people's lives easier and more efficient. However, many would argue that it invades one's privacy and needs to be regulated by the government. In addition, a user can regulate the use of facial recognition on a device by turning it off and on in their settings, making it optional and a way to manage facial recognition use. This research paper argues on how facial recognition affects everyone in multiple ways, and why it is necessary to regulate it to ensure privacy will be made in the future.

Facial Recognition

Facial recognition is a software application which is a form of technology that is most commonly found in phones and handheld devices. It is set up on a phone by scanning one's face to unlock their phone, making it easier than a normal number passcode from previous generations of devices. To set it up on a personal device, the user scans their face in multiple angles in their settings (Louradour, & Madzou, 2020). The phone then picks up 30,000 tiny dots that make an in depth map of a user's face (About Face ID Advanced Technology, 2020). It then

can recognize the user when they pick up their phone to unlock in seconds. On top of unlocking itself, with facial recognition, the user can pay for apps and music on their phone through the phone scanning their face as well (About Face ID Advanced Technology, 2020). Facial recognition also has a huge market that is growing annually, and continues to grow the more it is being implemented in the newest technologies being released. It is expected to boost the market by 2024 to seven billion (Louradour, & Madzou, 2020), making it a huge investment for companies implementing this system into their devices. .

iPhones and personal devices are completely impacted by the use of facial recognition, changing the way people are using their phones. Now, Apple, Android, and other companies are implementing it into all their devices changing the way we use passcodes. Before facial recognition, a user had to enter in a number passcode and type it out. Now, facial recognition scans a user's face using contours and shapes of facial features (Louradour, & Madzou, 2020). Facial recognition offers a faster way to unlock a personal device. Thus, making technology utility faster and more efficient to use with facial recognition.

Current Trends in Facial Recognition

Every year Facial Recognition is growing in all different countries, creating trends and a growing market for facial recognition all across the world. In 2020 (now postponed to 2021), facial recognition is being used to let workers into the olympics to get into certain areas by just scanning their face (Thales, 2020). It is also being expanded for the use of security and faster identification for workers. India this year in 2020 is also working on creating a large facial recognition system to be implemented into technology (Thales, 2020). On top of that, Moscow is now bringing in 160,000 surveillance cameras for public safety in large populated areas (Thales,

2020). Airports in Sydney Australia are also implementing facial recognition to identify Visa holders to make the scanning process easier and more efficient (Thales, 2020).

Facial Recognition Market

Facial recognition provides security for many private and public sectors. Facial recognition is taking over basic biometrics and causing governments to invest. Starting from 2015, facial recognition is predicted to be a 9.6 billion dollar industry by 2022 (Sing, & Rachna. 2016). Many countries like Asia and the United States are taking advantage of this new form of AI for terrorists, border control, and even advertising. It has become bigger than 2-D scanning and facial analytics (Sing, & Rachna. 2016). China and the United States are the leading countries that use facial recognition the most. The reason the countries are investing is because having the newest form of AI in a company makes it more up to date with technology and more progressive (Sing, & Rachna. 2016).

Organizational Reliance on Facial Recognition

Ever since the iPhone X was introduced, people have been able to unlock their phones through their faces. However, facial recognition is being found in more than just phones. For instance, social media is being used to tag people in photos, and people are trying on makeup virtually through a picture of them on a makeup website (Thales, 2020). Additionally, law enforcement agencies are investing in facial recognition. Besides, big name brand companies are investing money into facial recognition (CBINSIGHTS, 2019). Indeed, research focusing on how different organizations are investing in facial recognition seems to yield a positive result as findings indicate various reasons why organizations have focused on relying on facial recognition to do businesses ((Buckley, & Hunter, 2011).

Social media knows exactly what users look like as well. One of the biggest social media platforms called Facebook, is now implementing a new system of facial recognition. They are doing this by tagging one's friends in a post. When someone is posting a photo, Facebook can automatically recognize the other person in the photo by having facial recognition identify the other person in the picture based off of their own photos on their page (Buckley, & Hunter, 2011). This software is so successful that it can recognize a person 97.25% of the time in a photo (Thales, 2020). However, Facebook did not make users aware of this new technology, which crossed the line in privacy for users. Users could manually turn off this feature, but would have to figure out how to do it on their own (Buckley, & Hunter, 2011). Thus, their privacy is being invaded and they should be asked beforehand by Facebook if they want to use the facial recognition feature or not.

Another way facial recognition is found is in Asian countries is personal check out with fast food (Thales, 2020). Kentucky Fried Chicken in Beijing has started to implement a screen that orders a customer's food (Wu, & Cheng, 2018). The machine scans what the customer looks like and stores a picture of their face in its data for future use. The reason behind this is to know what the person looks like coming into the restaurant. So, when a customer is ordering again, the machine gives them recommendations from their last orders (Wu, & Cheng, 2018). This becomes very effective for a few reasons. The first reason is that it can recommend things they have ordered in the past to get them to order it again and have their favorite item on the menu. Thus, making the customer want to return again. Another way the facial recognition on the machine is helpful is by recommending new products that relate to what they have ordered in the past, making the customer want to try new things and keep returning (Wu, & Cheng, 2018). It

could also include more expensive products that relate to the customer orders and make them want to order that to create more business. This overall makes it a better experience for the person ordering the food and wanting to come back with easy and efficient service (Wu, & Cheng, 2018).

Facial recognition is also found in business. Companies are now knowing what consumers look like when they are buying a product. Their computer system will have a memory of the customers age, gender, and past purchases. This way, the customer can be put in a data machine that gives marketers ideas on what they can market to a certain age group, ethnicity, or even gender. They would want to market to the right group to make the most profit and make sure their marketing and advertisements are accurate.

However, companies are already doing this with just remembering a user's search history, or even listening to a person through their device (Buckley, & Hunter, 2011). When someone looks something up on their phone, their search goes through a data system, and puts out advertisements on their phone that relate to their google searches. Now with facial recognition, it is getting more personal with comparing advertisements to types of people (Buckley, & Hunter, 2011). Some say it is just a marketing strategy, and they are not just spying on one person. But one could say this totally invades a consumer's privacy, and companies do not need that much information about a consumer to suggest advertisements to appear on their devices.

Lastly, law makers are using facial recognition to catch people breaking the law. One example of this is cameras being placed by the roadside to monitor, fine, or penalize bad, law breaking, and inexperienced drivers (Kumar, & Rawat, & Gaur, & Benerjee, 2018). Any picture taken by the road is then put into a data system and is correlated with a driver's license photo on

file to identify the driver. This makes it easier to catch offenders on the road without actually having to pull them over, making work for police officers more convenient (Kumar, & Rawat, & Gaur, & Benerjee, 2018). The police are now wearing body cameras to be able to identify victims as well (Kumar, & Rawat, & Gaur, & Benerjee, 2018). This makes the law system trickier to beat, though overall it can help police in catching offenders and saving victims more efficiently.

Reasons against the Use of Facial Recognition

Several arguments have been made against the use of facial recognition. Some people state that the use of facial recognition should be banned. Others argue that surveillance cameras for public use should be taken away because people's identity on the cameras could be used against them, but can still remain on personal devices (Biometric Technology Today, 2019). Thus, everyone has different inputs on what facial recognition should be used on.

Indeed, some have gone further to emphasize that technology should not be made to know what a user looks like, since this could easily go against them in the courtroom (Herrera, 2019). However, having this extra form of security makes it easier to catch criminals and provides evidence as to how and when a person breaks the law. According to Karwford (2019), facial recognition should be taken away all together since it is harmful, and the government doesn't care enough to make it regulated. Despite these arguments, facial recognition continues to grow and the government needs to put plans in place to regulate the use of facial recognition to protect American's privacy if it is used in their lives.

Unarguably, there are so many hackers now going into someone's phone knowing what they look like (Garvie, & Martin, 2017). Some argue that this causes a huge threat towards the

person, and it isn't worth risking for a quicker speed to unlock their phone. However, facial recognition is great and should be continued to be added throughout more technological devices for personal use. A user could turn it off on their phone manually if they do not want it on their phone (Garvie, & Martin, 2017). Plus, almost all devices have a camera regardless if the person uses facial recognition, so someone's phone could still be watching them (Garvie, & Martin, 2017).

The use of facial recognition comes with many privacy concerns. In Garvie and Martin's (2017) interview with Garvie, an associate at the Center on Privacy and Technology at Georgetown Law Center, it was argued that many would blame Apple for this issue. Since they are the ones that implanted facial recognition in almost every gadget at this point in time. However, they are not to blame for facial recognition getting out of control. The United States needs to come up with ways to regulate it. It should continue to grow with ongoing technology releasing every year, but there has to be limits for how and where the information is sent to. There is too much opportunity for hackers to know too much about what the user likes and who they are.

Managing the Choice of Using Facial Recognition

Facial recognition users can choose to turn it on or off in their settings. If someone does not want their facial recognition to be used on their phones, they can keep it at just a number passcode (Garvie, & Martin, 2017). For most phones, if the device cannot recognize the person (example of having makeup on) then the phone will ask for a passcode anyways. There are ways to turn off the setting. However, phones and devices still have cameras on them and potentially see what they look like regardless (Garvie, & Martin, 2017). It is up to the user to block their

device's camera on the top of one's device. However, people cannot stop cameras and public facial recognition from scanning their face, which is why it needs to be regulated to keep everyone safe.

Looking into the future, it has been observed that facial recognition is being discussed to be implemented into more and more technological services. For example, car companies like Subaru are looking into using this form of AI to watch drivers fall asleep behind the wheel (Thales, 2020). Hotels are now considering this to interact with customers checking in and out of their room (Thales, 2020). Emotional recognition is also being researched and tried out for future advancements with detecting how a person feels through a computer screen (Corning, 2019). Facial recognition is continuing to grow into daily life and again needs to start to become regulated to make it reliable and trustworthy for companies and for consumers.

Conclusion

Facial recognition is a helpful tool for society and making technology easier for one's use. However, it needs to be regulated to an extent. Hackers and companies are watching people behind the screens and should not know what users look like. Several companies and popular public places rely on facial recognition to make things run more smoothly and more efficiently. To ensure that facial recognition is more private in the future, organizational leaders must work with the government to have some safety measures so it is safe and reliable to use everywhere. Undoubtedly, facial recognition makes things easier for anyone working with technology in the workforce or for personal use. There's no way of stopping facial recognition to continue to grow. Every year, its market continues to increase. Many organizations are planning on using it because it is one of the newest technologies that eventually will become extremely common,

especially since so many users already use it in their personal devices like their smartphones.

Thus, it is one's choice to use this feature on their personal devices, and how much privacy they are willing to give up to use facial recognition in their everyday life.

References

About Face ID Advanced Technology. (2020, February 26). *Apple*. Retrieved from

<https://support.apple.com/en-us/HT208108>

Biometric Technology Today. (2019, February). Americans strongly support facial recognition.

Elsevier B.V. Retrieved from file:///C:/Users/lhohl/Downloads/203324.pdf

Biometric Technology Today. (2016, February). Facial recognition tech at JFK airport as DHS

stalls on the biometric exit system. *Elsevier B.V.* DOI: 10.1016/S0969-4765(16)30023-6

Buckley, B., & Hunter, M. (2011). Say cheese! Privacy and facial recognition. In *Computer Law*

and Security Review. The International Journal of Technology and Practice, 27(6),

637-640 DOI: 10.1016/j.clsr.2011.09.01

CBINSIGHTS. (2019, June 5). Facial recognition is already here: These are the 30+ US

companies testing technology. Retrieved from

<https://www.cbinsights.com/research/facial-recognition-technology-us-corporations/>

Corning, A. (2019, September 3). Facing the future: New applications and trends in facial

- recognition. *Radiant Vision Systems*. Retrieved from <https://www.radiantvisionsystems.com/blog/facing-future-new-applications-and-trends-facial-recognition>
- Garvie, C. & Martin, M. (2017, Sept. 17). Apple gets mixed reactions to new iPhone's facial recognition technology. *National Public Radio, Inc. (NPR)*. Retrieved from <https://www.npr.org/2017/09/17/551670875/apple-gets-mixed-reactions-to-new-iphones-facial-recognition-technology>
- Herrera, A. (2019). Biometric passwords and the Fifth Amendment: How technology has outgrown the right to be free from self-incrimination. *UCLA Law Review*, 66(3), 778-817
- Krawford, K. (2019, August 29). Regulate facial-recognition technology. *Nature*, 572(7771), 565. DOI: 10.1038/d41586-019-02514-7
- Kumar, K., Rawat, S., Gaur, A., & Benerjee, A. (2018, March). Smart traffic rule violation monitoring system. *International Journal of Recent Research Aspects*, 5(1), 37-39.
- Louradour, S., & Madzou, L. (2020). A framework for responsible limits on facial recognition use case: Flow management. *World Economic Forum*. Retrieved from http://www3.weforum.org/docs/WEF_Framework_for_action_Facial_recognition_2020.pdf
- Mordor Intelligence. (2020). Facial recognition market - Growth, trends, and forecast (2020

- 2025). Retrieved from
<https://www.mordorintelligence.com/industry-reports/facial-recognition-market>
- Ologunde, R. (2015). Plastic surgery and the biometric e-passport: Implications for facial recognition. *Journal of Plastic Surgery & Hand surgery*, 49(2), 127-127.
- Paul, K. (2020, March). 'Ban this technology': students protest US universities' use of facial recognition. *The Guardian*. Retrieved from
<https://www.theguardian.com/us-news/2020/mar/02/facial-recognition-us-colleges-ucla-ban>
- Sing, R. (2016, June). Facial recognition market. *Allied Market Research*. Retrieved from
<https://www.alliedmarketresearch.com/facial-recognition-market>
- Thales. (2020, February 16). Facial recognition: Top 7 trends (tech, vendors, markets, use cases and latest news). Retrieved from
<https://www.thalesgroup.com/en/markets/digital-identity-and-security/government/biometrics/facial-recognition>
- Wu, H-C., & Cheng, C-C. (2018). What drives experiential loyalty toward smart restaurants? The case study of KFC in Beijing. *Journal of Hospitality Marketing & Management*,

27(2), 151-177.