

Facial RECOgnition

Written-Work



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# Introduction

Facial recognition is a biometric tool like fingerprint recognition and iris recognition which uses Big Data and Artificial Intelligence. Facial recognition is a method of identifying or verifying the identity of a person using their face from photos, videos, or in real-time. The identifying, so-called one-to-many consists of determining the identity of one person among N individuals known in a database (1: N). The verifying, so-called one-to-one consists of verifying the identity of the person is the good one. For example, it’s used to unlock the smartphone (1: 1).

Facial recognition is a field of computer vision. Computer vision is an intelligence artificial technology trying to imitate human vision. The goal of computer vision is to understand a real-world scene using images and videos. It can interpret the scene by identifying objects. The different things that can do the computer vision are to identify, track, measure, detect, and classify objects from an image or a video. Facial recognition is only based on the face.

The process of face recognition is based on 3 phases. First, our face is detected and captured with a photo or video or in real-time after that a software is used to create a virtual model that’s very detailed based on all face features like the distance between the eyes, the width of the nose, and so on. This virtual model represents a unique facial signature. That facial signature is then compared to a database of known faces. All the process can happen in a matter of seconds.

The first apparition of facial recognition was in the 1960s. Wilson Bledsoe developed a system that classified photos by manually recording the coordinates of facial features such as the nose and mouth using a graphics tablet. A computer could then automatically compare the distances and return the closed match.

In the 1990s the Defense Advanced Research Project Agency (DARPA) and the Army Research Laboratory (ARL) designed a face recognition program that led to more sophisticated face recognition technology. The first version of this technology was tested by law enforcement agencies at the 2002 Super Bowl to found criminals. But this test was not conclusive, it gave a lot of false positives.

Due to the rapid development of artificial intelligence facial recognition technology is getting faster and more accurate.

Nowadays there are a lot of facial recognition applications. The main application of facial recognition is in the area of safety and security. The law enforcement agencies use it to fight against crime, prevent terrorist attacks, help locate missing people, and so on. Security checkpoints in airports around the world are increasingly using this technology to protect flyers and identify criminals. The second main application of facial recognition is in the area of police surveillance to identify criminals that are wanted.

Facial recognition can also be used on Social media to identify someone in a picture. In 2017s, Apple introduces Face ID that allows using facial recognition to authenticate a user on the smartphone.

The bigger argument against facial recognition technology, it’s the privacy of individuals. Some cities across the world can collect the facial data of people and store them without any permission.

The reason that I choose facial recognition it’s because we are living in a strange world since the pandemic and I wanted to know what the impact of the mask on facial recognition was. Facial recognition is growing so fast we can use it on a recent smartphone to make a bank transaction or other things.

# Monitoring

During the summer, there were a lot of manifestations about racial injustice in United States mainly. The Facial recognition was abused widely in the search for protestors.

In New York, The police department used the facial recognition to find an activist of Black Lives Matter movement who was charged with assaulting an officer.

Many officers were sent to the home of the activist without a search warrant, which provoked movement in the streets. After that NYPD was criticized for using facial recognition to find the activist because in a video, we can see an officer analyzing a document marked “Facial Identification Section Informational Lead Report” with a picture from the activist’s Instagram. But the police department confirmed to a local newspaper, that it was only using facial recognition for investigative purposes by comparing an image from a surveillance video with a set of legally possessed images. But since 2011, the police department use the software from Clearview AI to identify suspects in investigations.

Clearview AI is a firm that specialized in facial recognition, more than 2400 police department use Clearview AI software. This company is controversial because it collects data from social medias. Even before the protests against police violence, the company was criticized for not respecting the privacy of individuals. It’s for this reason that the police were also criticized to use a software from a company which not respecting the privacy.

After that all these criticisms, the mayor of New York said that they had to be careful with the use of facial recognition and that they were going to review the standards of use.

Due to this recent event, The Senator of Manhattan State Brad Hoylman even wants to ban the use of facial recognition by the NYPD.

In addition to the case in New York, the Miami police used the Clearview’s software to identify protestors. Due to the investigation against a young woman who threw two rocks at an officer during the protests, the police department of Miami had to clarify the use of facial recognition saying that it is not used against peaceful protesters but against violent protesters who commit crimes.

(est ce que je dois rajouter que les gens ont critique fortmenent l’utilisation de la reconnaissance car il pensait que les manifestants arreter était des manifestsants pacifique ? Ce n’est pas écrit dans l’article mais c’est une déduction qui est forte.)

In the United-states, facial recognition is used by at least 25% of police agencies. 8,000 is the number of times that the police of New York have used the facial recognition in 2019.

Beside mass monitoring, facial recognition at another negative point: it’s not 100% reliable. There is a real risk to have a false positive. One of the recent victims of facial recognition is Robert William who has been wrongfully accused by an algorithm for a crime he did not commit. Because the algorithm is less accurate for people of colors due to a low diversity of images in the database.

IBM, Amazon, and Microsoft have all committed to not sell facial recognition to law enforcement at least temporarily to support the Black Lives Matter movement against racial injustice.

COVID-19:

Du à la crise sanitaire Mondial L’entreprise RealNetworks à mis à jour son logiciel de reconnaissance faciale SAFR permettant ainsi d’avoir une meilleur detection des visages et une meilleur precision pour les visages masques et non masques.