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How Surveillance Cameras Could Be Weaponized With A.I.

Advances in artificial intelligence could supercharge surveillance cameras, allowing footage to be constantly monitored and instantly analyzed, the A.C.L.U. warned in a new report.



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Businesses and the government have spent years installing millions of surveillance cameras across the United States. Now, that technology is on the verge of getting a major upgrade, the American Civil Liberties Union warns in a new report.

Advancements in artificial intelligence could supercharge surveillance, allowing camera owners to identify “unusual” behavior, recognize actions like hugging or kissing, easily seek out embarrassing footage and estimate a person’s age or, possibly, even their disposition, the group argues.

“We face the prospect of an army of A.I. security guards being placed behind those lenses that are actually, in a meaningful way, monitoring us, making decisions about us, scrutinizing us,” said Jay Stanley, senior policy analyst at the A.C.L.U. and the author of the report, which was released on Thursday.

The United States is, by various estimates, home to tens of millions of surveillance cameras. While many of those devices have been around for years, it has been widely understood that it would be unfeasible, if not impossible, for each device to be constantly monitored and its footage carefully categorized and documented, Mr. Stanley notes in the report, titled “The Dawn of Robot Surveillance.” Even the Justice Department has said that watching such footage is “boring and mesmerizing,” and that attention fades after about 20 minutes.

But improvements to technology created to actively monitor such feeds, known by several names including “video analytics,” are poised to change that, ensuring that every second of footage can be analyzed.

Software is also being trained to identify a wide range of activities, such as using a phone, shaking hands, punching something, drinking beer and walking toward or away from an object. (Amazon claims that Rekognition can already identify some such actions, including blowing out a candle and “extinguishing fire.”)

One area of research that the A.C.L.U. described with particular concern is the movement to train software on “anomaly detection,” which can single out an individual for unusual, atypical or deviant behavior. Another is emotion recognition, which promises to discern a person’s mood, though there is little evidence that emotions are universal or can be determined by facial movements alone.

As the technology improves, users will be able to search videos by keyword, surfacing results for precise queries like “red car” or “man wearing hoodie,” a capability that already exists for images stored on Google Photos and Apple Photos.

The associated threat

The spread of such technology has a number of dangerous implications, the A.C.L.U. warns.

First, algorithms can be trained on biased data sets, leading to discriminatory results. The well-documented racial shortcomings of facial recognition technology, for example, have been linked to training data that skews heavily white and male.

Video analytics software is often trained on publicly available footage, such as YouTube videos, but there may be bias in the kinds of people who post them or in what such videos show.

“There are reasons to fear this technology when it works, and there are reasons to fear this technology when it doesn’t work,” Mr. Stanley said.

The use of video analytics may also have a chilling effect on society, the A.C.L.U. warned. If individuals feel that their every movement is monitored, they may alter their behavior. It may also lead to over-enforcement of smaller crimes, a practice that has disproportionately affected minorities or other disadvantaged groups.

“We could find ourselves subject to constant petty harassment and the ignoring of common sense extenuating circumstances,” the report warns.

And then there is the potential for abuse. Those who control such systems would wield great power. Without proper regulations, they could use it to nefarious ends, the group warned.

What can be done