

Bias in Facial Recognition Software

Case study

Name : Kweku E. Acquaye.

Topic 4

Bias in Facial Recognition Software.

Case

Project Green Light Crime Prevention Program^{1,2,3}, Detroit City, Michigan State. USA.

What the case is about

Installation of live feed (streaming) video surveillance cameras in public places, together with the use of facial recognition software for identifying and apprehending criminals.

Why I selected it

It demonstrates the ethical and moral conundrums associated with real-time citizen surveillance, and the unethical and unjust use of Facial Recognition Algorithms and Software in their current form.

Issues identified

- a. What was promised in crime reduction and public safety in 2016 is not matched by results as at 2022, despite Police Chief Craig's and Mayor Duggan's erroneous use of statistics.
- b. The program directed and continues to direct resources (money and personnel) away from proven community improvement initiatives to wasteful pie-in-the-sky pet projects of Police Chief and private tech firms.
- c. Generally, the program tramples privacy and human rights.
- d. Specifically, high false positive rates of identification (misidentification) of ethnic minorities especially blacks constitutes serious injustice to already maligned, marginalised and authority-distrusting communities.
- e. It paves the way for aggressive programs like "predictive crime prevention/policing" and the use of drones in public surveillance.
- f. There is enormous potential for misuse, e.g. known civil rights activists and lawyers could be publicly followed and monitored 24/7, intimidated, and blackmailed.

Link to 3 pillars of Ethically Aligned Design

- a. Universal Human Rights
 - i. Privacy is a universal human right enshrined in UN Charter in the Universal Declaration of Human Rights (UDHR) 1948, Article 12. It is also defined within many works and conventions as law and statute. The inclusion of driver's license photos and state ID photos in the police database utilised by the Project Green Light program, i.e. virtually the entire population of the city of Detroit most of whom have committed no crime, is a violation of their basic human rights.
 - ii. The use of facial recognition software in its current state makes a mockery of so-called "democratic values" in the light of the points raised in "Issues identified" paragraph above. The Detroit Project Green Light program runs contrary to the aspirations of the first "pillar" of the *Ethically Aligned Design*⁴ Conceptual Framework -
 - iii. "... to respect human rights, align with human values, and holistically increase well-being while empowering as many people as possible ..." ⁴.
- b. Political Self-Determination and Data Agency
 - i. The people of Detroit do not have access to, nor control over, the data "... constituting and representing their identity ..." ⁴, stored in the Detroit Police Department database. As a result, they cannot exercise *data agency* via how the data is used, and by whom. Since the Detroit Police Department regularly use civilian contractors in addition to their officers to administer the program, many people have unlawful access to these personal data and identities.
 - ii. Neither can the people of Detroit achieve the "... great potential to nurture political freedom and democracy, in accordance with the cultural precepts of individual societies ..." ⁴, rather the opposite is likely to happen through alienation by repeated wrongful arrests and persecution.
- c. Technical Dependability
 - i. With facial recognition software false positive rates of 35 to 45% cited in the literature for some ethnic minorities, the current systems are nowhere near being trustworthy. They are certainly not reliable, absolutely not safe for everyone (anyone can be misidentified) and especially so for minorities. This lack of technical dependability means facial recognition software in general, and Detroit Project Green Light Crime Prevention Program in particular, cannot actively accomplish the objectives for which they were designed (a basic tenet of the third "pillar").
 - ii. The point in i. above is further illustrated by the case of Robert Williams, a black 42-year-old father and citizen of Detroit who in January 2020 was falsely accused of shoplifting, arrested at his home in front of his family, and imprisoned on the basis of an incorrect facial recognition match by the program^{5,6,7}. In April 2021 a lawsuit

against Detroit Police Department was filed on his behalf by the American Civil Liberties Union (ACLU) and the University of Michigan Law School's Civil Rights Litigation Initiative (CRLI)⁷.

What they could have done differently to align with ethical standards

- a. Seek city-wide consent on exactly what data goes onto/into??? the program database.
- b. Positive identifications from facial recognition software should be confirmed by other traditional means before individuals are accosted or arrested, until a time in the future when false positive rates fall below 0.00001% (i.e. 1 in 100,000).
- c. Software should be trained on more representative data, i.e. a lot more data from ethnic minorities should be included in the training, validation, and test data to address class imbalance.

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