**Computer Vision: Facial Recognition**

Anthony Wong

Georgia Institute of Technology

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Professor Melody Moore

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As computer vision continues in becoming ever prevalent in our everyday lives, it is easy to get lost marveling at the incredible leaps we’ve made in the field. Within the technology field, every bright side that exists with any new development is also paired with the potential of something much more sinister. This is not any different for computer vision, facial recognition software specifically. While it may be an incredibly powerful tool that can benefit many aspects of our daily life, it is this power that requires us to address the fact that if we let this technology run unchecked it can have a significant impact on the American ideals that are freedom and privacy.

Facial recognition itself is a technology that almost seems tailored to be used by some authoritative regime. Nearly all, if not all, of its applications are useful because of the ability to store information about any individual, whether innocuously or not. The nature of this technology is, consequently, extremely rooted in politics because of the power it brings. It is already in use within our justice system. For example, Ousmane Bah “received a summons from a court in Boston saying he stole $1200 worth of Apple products in 2018” due to a facial recognition error in their stores (Brown, 2019). These events and more like them have led many to consider if this technology “violates the First Amendment, granting certain freedoms including speech, religion, assembly and the press; the Fourth Amendment, which protects people from unlawful searches and seizure; and the 14th Amendment, which guarantees equal protection of the laws” (Collins, 2019) Even with all these concerns, Congress still has not been able to push through any regulatory bills. This is partly because it is hard to argue that when these technologies are used correctly and for good the results are incredible, such as ATM fraud protection, cashier-less checkout, etc.

In discussing the unintentional/intentional implications of facial recognition, there are two overarching issues: violation of privacy and racial bias. Based upon the current use cases of facial recognition, most people being observed are unaware they are being observed or did not give permission. What this means is that currently, our activity can be tracked by anyone, whether it be a governmental or private entity. As said by Evan Selinger, a professor of law and computer science at Northeastern University, “If the American way of life is going to be preserved – free speech, free association and free movement – the best (way) forward is to acknowledge that, at present, facial recognition technology is a uniquely threatening tool of oppression …” (Collins, 2019). As for examining the intentions behind these violations, it seems clear that those who wield these tools are aware of these consequences as they are hard to be ignorant of. Just as the debates over internet privacy arose as the result of Edward Snowden and the NSA, the general public again has to hope that this technology is used for more good than bad. The more interesting implication in this equation is racial bias. Within this topic there are three sources of error that may cause this. Firstly, it is well-documented that those of darker complexion are harder for facial recognition systems to identify correctly (Collins, 2019). Secondly, as mentioned by Kade Crockford (Director of the Technology for Liberty Program at the ACLU of Massachusetts), the data being used to train predictive models can be skewed, having more of one race than the other (Brandom, 2018). Lastly, as said by Benji Hutchinson (VP of federal operations at NEC America), predictive models with less bias requires an extreme amount of work/money to create, meaning the less R&D budget a company may have, the more bias/error in their algorithm. It seems that this implication is both intentional and unintentional (Brandom, 2018). The difficulty in identifying those of darker complexion and the issues in R&D budgeting seem unintentional in nature. However, both the collection and utilization of skewed datasets seems like it could be intentional. For example, police using mugshots within their datasets is foolish at the least and potentially nefarious.

In analyzing the impacts of facial recognition on certain groups of people, it is important to talk about minorities/marginalized groups. Given the use of facial recognition within the justice system as well as the racial bias that has been widely publicized within the justice system, there is a potential for this technology to become another weapon for prejudice. As said by Representative Cedric Richmond, “We are troubled by the profound negative unintended consequences this form of artificial intelligence could have for African Americans, undocumented immigrants and protesters” (Collins, 2019). As for what it means for the general public, it follows that we consider what it looks like when facial recognition is used by an authoritarian regime, such as the Chinese Communist Party in China. In China, there is a social credit system which takes what a credit score can do in America and applies it “to all aspects of life, judging citizens' behavior and trustworthiness. Caught jaywalking, don't pay a court bill, play your music too loud on the train — you could lose certain rights, such as booking a flight or train ticket” (Kobie, 2019). Though this reality seems like a longshot it’s no secret that the U.S. government has experimented already with a similar idea in Detroit and Chicago where they have “purchased citywide face surveillance networks that are capable of scanning the faces of city residents in real time as they walk down the street” (Garvie & Moy, 2019). It is this seemingly looming dystopia that is so worrying. Facial recognition software likely can not be banned, given that anyone has access to the technology. However, for the sake of racial/ethnic equality and the right to privacy within the U.S., it is important that we get ahead of the problem now so that we can find a solution that not only limits the issues that will arise but also allows us to take advantage of all the pros of facial recognition to push society forward.

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