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June 12, 2019

IS 212: Values and Communities

Making America Unsafe Again: The Use of Discourse to Perpetuate Systemic Racism through

Facial Recognition

I. Introduction

The current political climate of the United States is fraught with fearmongering and hostile discourse, leading to the further marginalization of minorities in communities across the country. This discourse is reflective of more than words, seeping into the constructs of our society and expressing itself as racial biases. Technology company's utilization of discourse is a primary example of discourse as a tool to perpetuate racism and socio-economic inequities. Facial recognition technology is not exempt from these biases, this is of particular concern because of the technology's rising popularity. Culturally impactful institutions and government agencies alike have supported the use of facial recognition systems. These organizations are using a discourse of safety to justify the use of facial recognition while the technology perpetuates racial hierarchies and biases, endangering minorities across the United States that are underrepresented in the technology industry.

II. The Innerworkings of Facial Recognition and its Creators

a. How These Systems Work

Facial recognition systems are used to identify individuals using computer vision and algorithms, making them a threat to privacy for many Americans.¹ These systems use software to "scan an image or live video for a person's face and then match it with a similar, previously

[&]quot;What Is Facial Recognition Technology, and Why Is It so Controversial?," accessed June 10, 2019, https://finance.yahoo.com/news/facial-recognition-amazon-114720161.html.

taken image or video of that same person."² Machine learning is used to teach facial recognition systems how to identify and scan an individual's face. Company's rely on large photograph databases to train artificial intelligence during machine learning, "[t]o find a single person... an operator uploads a photo of whoever they are trying to identify, the computer then looks at the person's facial landmarks, such as the distance between their eyes... and compares that against the other images in its stockpile."³ Facial recognition is rapidly improving and spreading, and its success is attributed to new databases with vast amounts of records containing images of faces from Americans across the country.4

b. The History of Facial Recognition

The U.S. government developed facial recognition in the 1960s, steadily working on its accuracy until introducing the technology to the commercial market in 1993.⁵ After emerging from behind the government's closed doors, facial recognition has been used by law enforcement agencies at the Super Bowl, to unlock iPhones at Apple, to tag photos on Facebook, and for military missions like identify Osama Bin Laden.⁶ The government has played a large role in the development of facial recognition, but American companies have begun creating their own facial recognition software and databases, such as Amazon's Rekognition API, which allows individuals to purchase facial recognition technology for their business.⁷ With the tech industry

4"Analysis | Facial Recognition," Washington Post, accessed June 10, 2019, https://www.bloomberg.com/view/quicktake/facial-recognition.

5 "History of Face Recognition & Facial Recognition Software," *FaceFirst Face Recognition Software* (blog), August 1, 2017, <u>https://www.facefirst.com/blog/brief-history-of-face-recognition-software/</u>.
6 Ibid.

7 "Amazon Rekognition – Video and Image - AWS," Amazon Web Services, Inc., accessed June 10, 2019, https://aws.amazon.com/rekognition/.

² Ibid.

³ Ibid.

finetuning facial recognition systems with little to no regulation, biases and inequities are blending into the technology and changing the trajectory of facial recognition's future.

c. The Faces Behind Facial Recognition Technology

The lack of diversity in the technology sector has perpetuated spawned racial biases in technology systems and products. A 2014 report from the United States Equal Employment Opportunity Commission found that only 7.4% of the technology sector was made up of African Americans, while African Americans made up 13.2% of the entire country's population.8 In contrast, white Americans made up 62.1% of the population and 68.5% of the technology sector; furthermore, whites comprised 83.3% of tech industry executives, and 80% of those executives were male.9 Without minority representation in the creation of these systems, as Safiya Nobel writes, racial biases fall through the cracks and embed themselves into technologies: "[T]he public still struggles to hold tech companies accountable for the products and errors of their ways. These errors increasingly lead to racial and gender profiling, misrepresentation, and even economic redlining."¹⁰ She goes onto explain that when minorities are left out of the creation process, the final product does not equally represent the population:

There is a missing social and human context in some types of algorithmically driven decision making, and this matters for everyone engaging with these types of technologies in everyday life. It is of particular concern for marginalized groups, those who are problematically represented in erroneous, stereotypical, or even pornographic ways in search engines and

^{8 &}quot;Tech Is Dominated by Even More White Dudes than the Rest of the Private Sector," accessed June 10, 2019, https://mashable.com/2016/05/19/diversity-report-silicon-valley-white-men/.
9 Ibid.

¹⁰ Safiya U. Noble, Algorithms of Oppression: How Search Engines Reinforce Racism (New York: NYU Press, 2018).

who have also struggled for nonstereotypical or nonracist and nonsexist depictions in the media and in libraries.11

This lack of representation leads to technologies and algorithms that can overlook minorities entirely or acknowledge minorities through a stereotypical lens.

As stated, facial recognition systems rely heavily on photograph databases to train artificial intelligence. Although, when an industry lacks diversity, foundational components used to develop a technology can be completely overlooked. Facial recognition systems ran into a problem in which the systems were misidentifying people of color because of the absence of diversity in photographs used to train the system, "[t]he massive sets of facial images they train on skew heavily toward white men."¹² The technology sector did not ensure that these databases equally mirrored communities around the United States, and releasing flawed technology with no oversight or penalties. This is in part attributed to the concept of whiteness. Whiteness covertly holds its power "by seeming not to be anything in particular."¹³ Whiteness is the unquestioned norm and is always "the unmarked category against which difference is constructed, whiteness never has to speak its name, never has to acknowledge its role as an organizing principle in social and cultural relations."¹⁴ Communities like the technology sector inadvertently perpetuate whiteness due to a lack of diversity, and whiteness's silence helps it covertly blend into the

¹² "Will Updates to Facial Recognition Software Be Used against Immigrants? - The Washington Post," accessed June 10, 2019, https://www.washingtonpost.com/technology/2018/06/28/facial-recognition-technology-is-finally-more-accurate-identifying-people-color-could-that-be-used-against-immigrants/?utm_term=_f9b6da9865d2.
¹³ Nicole A. Cooke, Miriam E. Sweeney, and Safiya Umoja Noble, "Social Justice as Topic and Tool: An Attempt to Transform an LIS Curriculum and Culture," *The Library Quarterly* 86, no. 1 (January 2016): 107–24, https://doi.org/10.1086/684147.

¹⁴ "The Possessive Investment in Whiteness: Racialized Social Democracy and the 'White' Problem in American Studies on JSTOR," accessed June 10, 2019,

https://www.jstor.org/stable/2713291?seq=1#metadata_info_tab_contents.

¹¹ Ibid.

community. The lack of minority representation leads to the furtherance of inequities and perpetuates whiteness in the American culture to retain racial hierarchies.

III. Discourse Perpetuated by Big Tech and Government

In the current political climate, industry and government leaders are capitalizing on the discourse of fear. From the inception of his campaign, President Donald J. Trump has used the "word animals to describe people crossing the border," recognized members of the alt-right and Nazi sympathizers as "fine people on both sides," and was a loud supporter of the birther movement.15 Such discourse, whether believed or not, has impacted the American culture, including everyday technologies. Retail of facial recognition systems has increased at an almost exponential rate, while companies and government agencies have touted the software as a way to bring safety to communities across the country.16 This is a concern for people of color, as facial recognition can be used as yet another tool to target and disenfranchise minorities.

IV. Facial Recognition Case Studies

a. Facial Recognition in Corporate America

i. Amazon

Amazon created its own facial recognition system that fell short when used on women and people of color.17 When Amazon's facial recognition devices are used on people with dark skin or women, the system is "more likely to find an error, it's more likely to find a mismatch, it's more likely to fail to identify you, it's more likely to identify you as someone you're not."18 Joy

17 "Amazon Refuses To Quit Selling 'Flawed' And 'Racially Biased' Facial Recognition," accessed June 10, 2019, https://www.forbes.com/sites/zakdoffman/2019/01/28/amazon-hits-out-at-attackers-and-claims-were-not-racist/#abd7e8a46e78.

^{15 &}quot;10 Times President Trump's Comments Have Been Criticized as Racist," accessed June 10, 2019, https://www.usatoday.com/story/news/politics/onpolitics/2018/08/14/times-president-trump-comments-called-racist/985438002/.

¹⁶ "History of Face Recognition & Facial Recognition Software," *FaceFirst Face Recognition Software* (blog), August 1, 2017, <u>https://www.facefirst.com/blog/brief-history-of-face-recognition-software/</u>.

¹⁸ Ibid.

Buolamwini noticed this trend in her research as a graduate student at the Massachusetts Institute of Technology (MIT). Buolamwini tested facial recognition software and found that it was unable to detect darker-skinned faces:

[Software] created by brand-name tech firms such as Amazon uncovered much higher error rates in classifying the gender of darker-skinned women than for lighter-skinned men. Along the way, Buolamwini has spurred Microsoft and IBM to improve their systems and irked Amazon, which publicly attacked her research methods.19

Even with research from Buolamwini's and leading AI scholars, companies, police departments, and government agencies continue to create, use, and sell flawed facial recognition technology. As a result, companies and institutions are deepening the socio-economic inequities in communities around the country, creating databases and targeting minorities because of structural biases.

Amazon recently acquired Ring doorbell, a popular doorbell that connects to a customer's phone and automatically records individuals who interact or walk up to the doorbell.₂₀ Ring Doorbell's mission is to "reduce crime in neighborhoods [by giving customers the ability to] safely answer the door from anywhere".₂₁ Ring's savvy discourse surrounding safety caught Amazon's eye, enough so that Amazon filed a patent for a "suspicious persons database" after soon after acquiring Ring.₂₂ Amazon's patent application suggests that home safety is extremely important for homeowners:

https://www.washingtonpost.com/technology/2018/12/13/this-patent-shows-amazon-may-seek-create-database-suspicious-persons-using-facial-recognition-technology/?utm_term=.1c30489bc222.

¹⁹ "MIT Researcher Exposing Bias in Facial Recognition Tech Triggers Amazon's Wrath," Insurance Journal, April 8, 2019, https://www.insurancejournal.com/news/national/2019/04/08/523153.htm.

^{20 &}quot;About | Ring," accessed June 10, 2019, https://shop.ring.com/pages/about. 21 Ibid.

^{22 &}quot;This Patent Shows Amazon May Seek to Create a 'Database of Suspicious Persons' Using Facial-Recognition Technology - The Washington Post," accessed June 10, 2019,

The presence of doorbell recording devices can be a powerful deterrent against would-be burglars... The application also posits other potential uses for cameras equipped with facial-recognition technology, such as comparing such facial images to a database of suspicious persons. If a suspicious person showed up on a homeowner's doorstep, for example, the technology would then retrieve information about that person from the database.23

Considering the structural racism that permeates American culture, the technology industry, and racial biases found in Amazon's facial recognition system, the problem with categorizing people into this database are apparent. As previously noted, structural biases contribute to a higher rate of incarceration for African Americans, but those released may face additional discrimination upon re-entering the workforce: "if a person who has a criminal record is delivering a package, but the system has been set to automatically recognize anyone who has a prior criminal history as a 'suspicious person' and then the cops show up" the cyclical nature of inequity and discriminatory targeting will never cease for a person trying to escape the cycle.24 Amazon is capitalizing off of fear birthed from discourse perpetuated by American leaders and media outlets.

ii. Uber

Uber uses facial recognition as a safety precaution to verify its drivers. The ride hailing application "randomly asks drivers to verify their identity to ensure that the same person that they have background checked and cleared to drive is the person using the app."²⁵ Uber introduced this safety feature in 2016 and it works "by asking the driver to take a selfie on their

²³ Ibid.

²⁴ Ibid.

^{25 &}quot;Uber Sued Over 'Racist' Facial Recognition Software," accessed June 10, 2019, <u>https://digit.fyi/uber-sued-over-racist-facial-recognition-software/</u>.

phone, which is then checked using Microsoft's Face API software."₂₆ Because of the racial biases embedded within facial recognition systems, Uber employees trying to access the application have had trouble logging in. In the case of one employee, Uber contacted him "and said his images were fraudulent and terminated his account."₂₇ Though Uber is disputing these claims of flawed software, the research regarding the defective nature of facial recognition systems in recognizing minorities, as outlined above, indicates otherwise.

b. Government Agency's Use of Facial Recognition within the U.S.

i. Police Targeting

Police departments across the country have been cited for racial biases, and the addition of facial recognition could add another layer of tension between to police and minorities. Studies have found that implicit bias exist, as "[p]olice officers of all races—not just white ones— disproportionately kill African American suspects."₂₈ Predictive policing, and the idea that technology and data cannot contain biases, has become attractive to police departments. The benefits of facial recognition in police departments is evident, "[i]t has been used to catch violent criminals and fugitives... [with] law enforcement face recognition networks include over 117 million American adults."₂₉ Currently, the standard protocol surrounding facial recognition in law enforcement is as follows:

[O]fficers can use mobile devices to capture face recognition-ready photographs of people they stop on the street; surveillance cameras boast real-time face scanning and identification

²⁶ Ibid.

²⁷ Ibid.

²⁸ "Killing of Black Suspects Is More than a 'white Police Problem' - Futurity," accessed June 10, 2019, https://www.futurity.org/police-killings-african-americans-1836722/.

^{29 &}quot;The Perpetual Line-Up," Perpetual Line Up, accessed June 10, 2019, https://www.perpetuallineup.org/.

capabilities; and federal, state, and local law enforcement agencies have access to hundreds of millions of images of faces of law-abiding Americans.³⁰

The future of law enforcement is even more entangled with facial recognition, as they "would like to use face recognition with body-worn cameras, to identify people in the dark, to match a person to a police sketch, or even to construct an image of a person's face from a small sample of their DNA."₃₁ The databases that these facial recognition systems use to cross-reference mugshots is concerning "due to disproportionately high arrest rates, systems that rely on mug shot databases likely include a disproportionate number of African Americans."₃₂ The goal of any police department is to keep a community safe and, while facial recognition has the potential to do so, the technology needs to be reevaluated. Safety cannot be achieved if implicit and systematic biases exist within officers, technologies, and databases, particularly in such a discursively charged environment.

ii. United States Customs Targeting

The United States Customs and Boarder Protection (CBP) began using facial recognition to protect against criminals and undocumented immigrants from entering the country. The importance of safety is highlighted in the CBP mission statement to "serve as the premier law enforcement agency enhancing the Nation's safety, security, and prosperity through collaboration, innovation, and integration."₃₃ Facial recognition technologies are being used at airports by CBP to catch imposters at the U.S. and Mexico border to by monitoring people crossing into the United States. Microsoft has started working with CBP and claims its facial

³⁰ Ibid.

³¹ **Ibid**.

³² Ibid.

^{33 &}quot;About CBP | U.S. Customs and Border Protection," accessed June 10, 2019, https://www.cbp.gov/about.

recognition has improved the accuracy of the agency's identification of undocumented immigrants.₃₄

Implementing faulty technology at the border could lead to racial targeting and, ultimately, endanger the lives of those returning home or even seeking sanctuary. The CBP has a history of targeting minorities, underscored by a 2018 report documenting the excessive targeting of Muslims.³⁵ The CBP concluded that individuals with similar characteristics to these radical Suni Islamists should be continually evaluated because the agency believes they are "individuals who might have a higher risk of becoming radicalized."³⁶ Following this methodology seems to be the safe choice, and groups like CBP use a discourse of fear to justify their actions. Although this method can increase inequities for Muslim people, unfairly targeting individuals who live their lives lawfully. Adding racially bias facial recognition into the mix can lead to hyper targeting of American-Muslim people, forcing them to justify their innocence and live their lives as the other.

Furthermore, all databases are vulnerable to hacking, but hacking is of particular concern when a facial recognition photo database has millions of American biometrics. In the last week, CBP officials disclosed that "photos of travelers had been compromised as part of a malicious cyber-attack."₃₇ Cyber-attacks like this should provoke questions causing agencies like CBP weighing the benefits of safety versus the dangers of these systems. The message from government agencies that facial recognition has become more accurate, and therefore safer, is

 ³⁴ "Will Updates to Facial Recognition Software Be Used against Immigrants? - The Washington Post," accessed June 10, 2019, https://www.washingtonpost.com/technology/2018/06/28/facial-recognition-technology-is-finally-more-accurate-identifying-people-color-could-that-be-used-against-immigrants/?utm_term=.f9b6da9865d2.
 ³⁵ "Leaked DHS Report Uses Junk Science to Argue for Surveillance of Muslims," American Civil Liberties Union, accessed June 10, 2019, https://www.aclu.org/blog/national-security/discriminatory-profiling/leaked-dhs-report-uses-junk-science-argue.

³⁶ Ibid.

³⁷ "U.S. Customs and Border Protection Says Photos of Travelers Were Taken in a Data Breach - The Washington Post," accessed June 10, 2019, <u>https://www.washingtonpost.com/technology/2019/06/10/us-customs-border-protection-says-photos-travelers-into-out-country-were-recently-taken-data-breach/?utm_term=.2da5c332ca8a.</u>

misleading. Making these statements does not account for the software's implicit racial biases or its susceptibility to cyber-attacks.³⁸

V. Conclusion: Presence of Mind Can Have Great Impact

Though structural racism may never be eliminated from the American social structure, any hope of lessening its grip must begin with social awareness. This awareness can grow through the analysis and identification of racial biases and the deconstruction of structural racism through the use of Walter Benjamin's "presence of mind." ³⁹ Benjamin's views presence of mind as "an abstract of the future, and precise awareness of the present moment more decisive than foreknowledge of the most distant events."⁴⁰ Understanding the ramifications of technology for communities across the country could give a "voice to communities who have been forced into silence."⁴¹ Cities like San Francisco have already looked past the fiery discourse and prioritized social justice by banning facial recognition throughout the city.⁴²

Facial recognition has the opportunity to bring safety to communities but cannot do so in its current state. While organizations and government agencies are propagating the use of facial recognition, this technology is furthering inequities continually faced by minorities. Users of these systems and individuals who interact with them unwillingly are powerless when trying to insight changes in facial recognition systems because of socio-economic constructs that silence

https://www.washingtonpost.com/technology/2018/06/28/facial-recognition-technology-is-finally-more-accurate-identifying-people-color-could-that-be-used-against-immigrants/.

³⁸ "Facial Recognition Technology Is Finally More Accurate in Identifying People of Color. Could That Be Used against Immigrants?," Washington Post, accessed June 10, 2019,

³⁹ "The Possessive Investment in Whiteness: Racialized Social Democracy and the 'White' Problem in American Studies on JSTOR," accessed June 10, 2019,

https://www.jstor.org/stable/2713291?seq=1#metadata_info_tab_contents.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Kate Conger, Richard Fausset, and Serge F. Kovaleski, "San Francisco Bans Facial Recognition Technology," *The New York Times*, May 16, 2019, sec. U.S., <u>https://www.nytimes.com/2019/05/14/us/facial-recognition-ban-san-francisco.html</u>.

their voice. Making it the responsibility of regulators and companies to create an equitable facial recognition system. Until that time, users should be wary of companies and governments alike that implement facial recognition technology without confronting the risks.

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