Facial Recognition FAILS on Race

By Steve Lohr

Facial recognition technology is improving by leaps and bounds. Some commercial software can now tell the gender of a person in a photograph.

When the person in the photo is a white man, the software is right 99 percent of the time.

But for darker-skin, the error rates ballot — up to nearly 35 percent for images of darker skinned women, according to a new study that breaks fresh ground by assessing how the technology works on people of different races and genders.

These disparate results, calculated by Joy Buolamwini, a researcher at the M.I.T. Media Lab, show how some of the biases in the real world can seep into artificial intelligence, the computer systems that underpin facial recognition.

In modern artificial intelligence, data rules. A.I. software is only as smart as the data used to train it. If there are many more white men than black women in its data, it will be worse at identifying the black women.

The new study elevates broader questions of fairness and accountability in artificial intelligence at a time when investment in and adoption of the technology is racing ahead. Today, facial recognition software is being deployed by companies in various ways, including to tag images people post to social media and to help target ads online.

> *"One widely used facial-recognition data set was estimated to be more than 75 percent male and more than 80 percent white, according to another research study."*

But companies are also experimenting with face identification and other A.I. technology as an ingredient in automated decisions with higher stakes, like hiring and lending.

Researchers at the Georgetown Law School estimated that 117 million American adults are in face recognition networks used by law enforcement — and that African Americans were more likely to be singled out, because they were disproportionately represented in mug-shot databases. Facial recognition technology is lightly regulated so far.

"This is the right time to be addressing how these A.I. systems work and where they fail — to make them socially accountable," said Suresh Venkatasubramanian, a professor of computer science at the University of Utah.

Until now, there was anecdotal evidence of computer vision miscues, and occasionally in ways that suggested discrimination. In 2015, for example, Google had to apologize after its image-recognition photo app initially labeled African Americans as "gorillas."

Logan Bruner

Fall 2020

BFA Portfolio - Graphic Design

Department of Art and Art History

Artist Statement:

I use art as a way to help people. By creating designs for clients, I am able to express myself while benefiting others. To find inspiration, I look to my love for music. By listening to a song, I can transform rhythm and lyrics into a visual work. I gain a lot of inspiration from a variety of other artists, such as Saul Bass, who has led me to using warm background colors in my digital illustrations.

I plan to explore many illustration styles and continue to create innovative work as my career progresses. My goal is to capture the maximum amount of information into a work with as much simplicity as possible. I like to keep my creations simple, whimsical, and playful. Combining and experimenting with new techniques allows me to create a style of my own.

My goal is to create designs that resonate with people emotionally. Whether this be moving others to act on an exigent cause, or to get people excited for an artist's upcoming concert. If I can do this, then I am doing my job well.

- Logan Bruner, Fall 2020

Title	Original Format
Figure 1: Access Vote Campaign Logo	Illustrator, 11 in x 17 in
Figure 2: Access Vote Application	Photoshop and Illustrator, 11 in x 17 in
Figure 3: Local App Logo	Illustrator, 11 in x 17 in
Figure 4: Local App Application 1	Photoshop and Illustrator, 11 in x 17 in
Figure 5: Local App Application 2	Photoshop and Illustrator, 11 in x 17 in
Figure 6: The Secret Life of Color Book Redesign	Photoshop and Illustrator, 11 in x 17 in
Figure 7: Facial Recognition Fails on Race Article Spread	Photoshop and Illustrator, 11 in x 17 in
Figure 8: Rebirth (2016) Animation (Screenshot)	After Effects, 1920 px x 1080 px
Figure 9: Holy Fuck Podcast Rebrand Logo	Illustrator, 17 in by 11 in
Figure 10: Holy Fuck Podcast Episode 1 Illustration	Illustrator, 17 in by 11 in
Figure 11: Holy Fuck Podcast Episode 2 Illustration	Illustrator, 17 in by 11 in

Figure 1: Access Vote Campaign Logo

Figure 2: Access Vote Application

Figure 3: Local App Logo

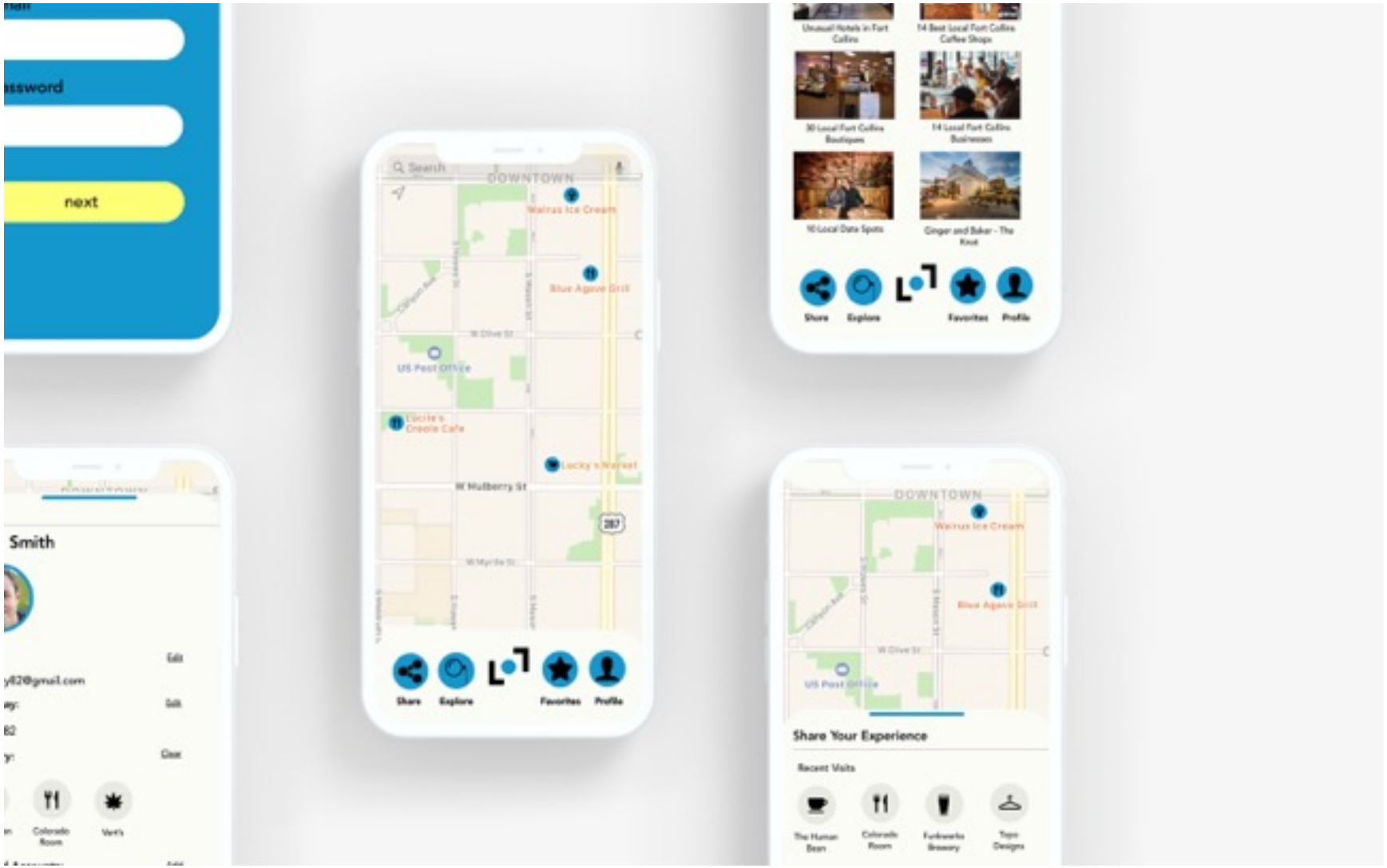

Figure 4: Local App Application 1

Figure 5: Local App Application 2

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These disparate results, calculated by Joy Buolamwini, a researcher at the M.I.T. Media Lab, show how easily A.I. biases in the real world can seep into artificial intelligence, the computer systems that influence facial recognition.

In modern artificial intelligence, data rules. A.I. software is only as smart as the data used to train it. If there are many more white men than black women in its store, it will be worse at identifying the black women.

To be sure, the rules for broader questions of fairness and accountability in artificial intelligence are a time when investment in and adoption of the technology is racing ahead. Today, facial recognition software is being deployed by companies in various ways, including to help target product pitches based on social media profile pictures.

> ***"One widely used facial-recognition data set was estimated to be more than 75 percent male and more than 80 percent white, according to another research study."***

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Figure 6: The Secret Life of Color Book Redesign

Figure 7: Facial Recognition Fails on Race Article Spread
Figure 8: Rebirth (2016) Animation (Screenshot)
https://vimeo.com/487855047

Figure 9: Holy Fuck Podcast Rebrand Logo

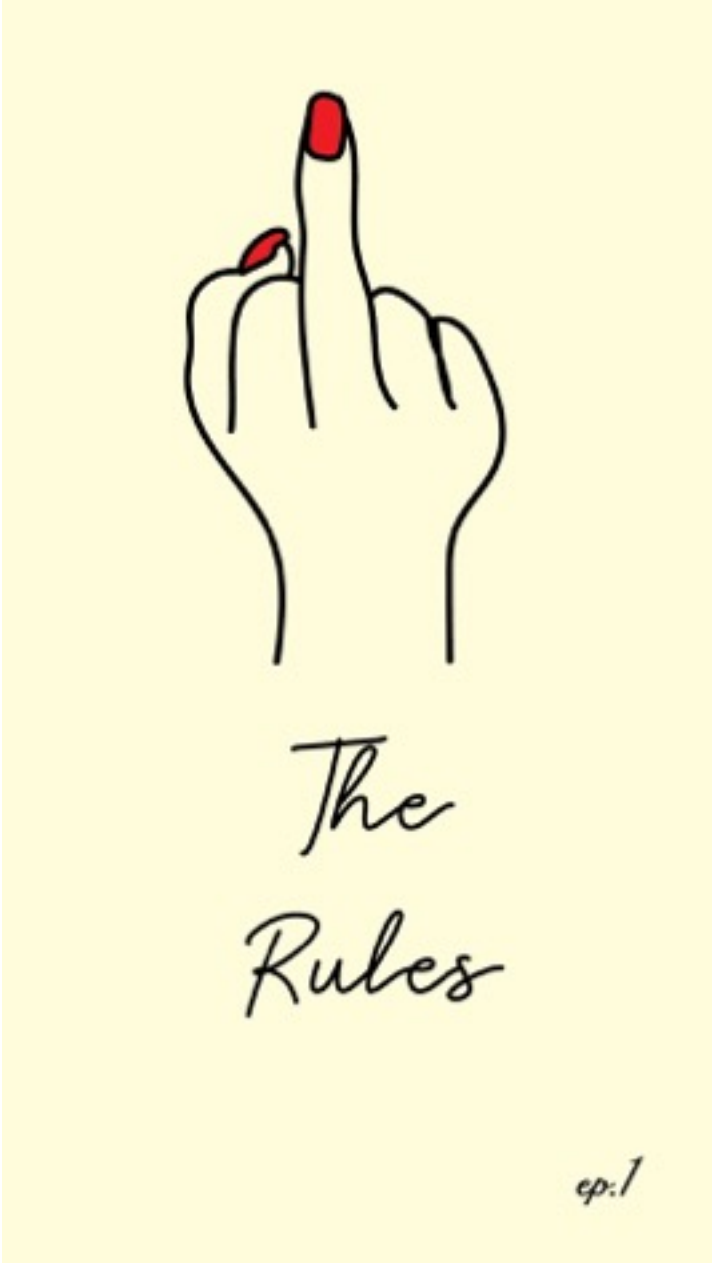

Figure 10: Holy Fuck Podcast Episode 1 Illustration

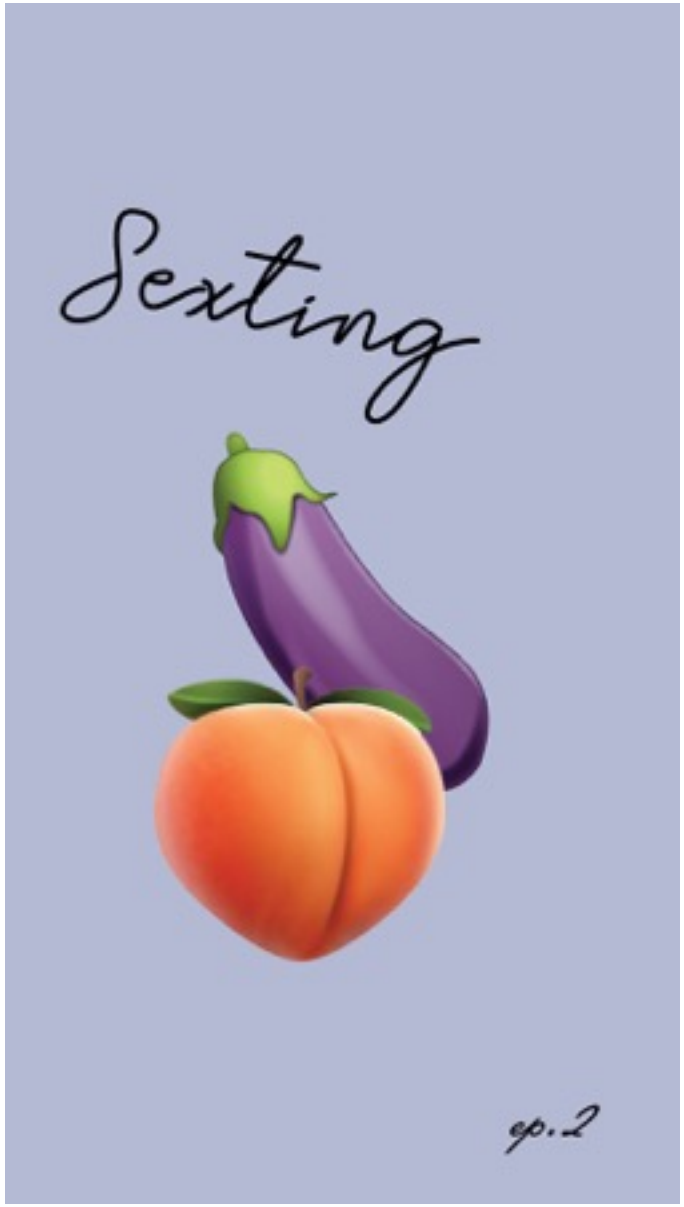

Figure 11: Holy Fuck Podcast Episode 2 Illustration