Privacy & VSD

Dear tech companies,
I don’t want to see pregnancy ads after my child was stillborn

By Gillian Brockell
Dec. 12, 2018
Source: https://www.washingtonpost.com/lifestyle/2018/12/12/dear-tech-companies-i-dont-want-see-pregnancy-ads-after-my-child-was-stillborn/

1) The following public letter has been posted on Twitter and Facebook and has then been shared multiple times via social media (you are allowed to read the whole article – see link above):

"Dear Tech Companies: I know you knew I was pregnant. It’s my fault, I just couldn’t resist those Instagram hashtags — #30weekspregnant, #babybump. And, silly me! I even clicked once or twice on the maternity-wear ads Facebook served up. What can I say? I am your ideal “engaged” user.

You surely saw my heartfelt thank-you post to all the girlfriends who came to my baby shower, and the sister-in-law who flew in from Arizona for said shower tagging me in her photos. You probably saw me googling “holiday dress maternity plaid” and “babysafe crib paint.” And I bet Amazon.com even told you my due date, Jan. 24, when I created that Prime registry.

But didn’t you also see me googling “Braxton hicks vs. preterm labor” and “baby not moving”? Did you not see my three days of social media silence, uncommon for a high-frequency user like me? And then the announcement post with keywords like “heartbroken” and “problem” and “stillborn” and the 200 teardrop emoticons from my friends? Is that not something you could track?

You see, there are 24,000 stillbirths in the United States every year, and millions more among your worldwide users. And let me tell you what social media is like when you finally come home from the hospital with the emptiest arms in the world, after you and your husband have spent days sobbing in bed, and you pick up your phone for a few minutes of distraction before the next wail. It’s exactly, crushingly, the same as it was when your baby was still alive. A Pea in the Pod. Motherhood Maternity. Latched Mama. Every damn Etsy tchotchke I was considering for the nursery.

And when we millions of brokenhearted people helpfully click “I don’t want to see this ad,” and even answer your “Why?” with the cruel-but-true “It’s not relevant to me,” do you know what your algorithm decides, Tech Companies? It decides you’ve given birth, assumes a happy result

and deluges you with ads for the best nursing bras (I have cabbage leaves on my breasts because that is the best medical science has to offer to turn off your milk), DVDs about getting your baby to sleep through the night (I would give anything to have heard him cry at all), and the best strollers to grow with your baby (mine will forever be 4 pounds 1 ounce).

And then, after all that, Experian swoops in with the lowest tracking blow of them all: a spam email encouraging me to “finish registering your baby” with them (I never “started,” but sure) to track his credit throughout the life he will never lead.

Please, Tech Companies, I implore you: If your algorithms are smart enough to realize that I was pregnant, or that I’ve given birth, then surely they can be smart enough to realize that my baby died, and advertise to me accordingly — or maybe, just maybe, not at all.

Regards, Gillian"

2) Answer the following questions (200 - 300 words)

Q1 (Privacy): According to the definitions of privacy, which kind is at stake here and why? What solution would you propose?

Q2 (Privacy): Identify three reasons why privacy should be preserved in this case. Give reasons why.

Q3 (VSD): Suppose you are responsible for the Value-Sensitive Design section in a company that deals with algorithms such as the one just discussed. Which *empirical*, *conceptual,* and *technical* investigations would you carry out to avoid cases such as Gillian’s?

Q4 (VSD): Identify the three values to be design in an algorithm such as the one discussed. Why do you think these are the most important? Mention at least two potential conflicts among them. Give a brief explanation why they are in conflict.

Bias and Fairness

Racial Bias Found in a Major Health Care Risk Algorithm

By Starre Vartan
October 24, 2019
Scientific American
https://www.scientificamerican.com/article/racial-bias-found-in-a-major-health-care-risk-algorithm/

1) Read these excerpts from the article by Starre Vartan in Scientific American (you are allowed to read the whole article – see link above):

A study published Thursday in Science has found that a health care risk-prediction algorithm, a major example of tools used on more than 200 million people in the U.S., demonstrated racial bias—because it relied on a faulty metric for determining need.

This particular algorithm helps hospitals and insurance companies identify which patients will benefit from "high-risk care management" programs, which provide chronically ill people with access to specially trained nursing staff and allocate extra primary-care visits for closer monitoring. By singling out sicker patients for more organized and specific attention, these programs aim to preemptively stave off serious complications, reducing costs and increasing patient satisfaction.

To compute who should qualify for this extra care, the algorithm's designers used previous patients' health care spending as a proxy for medical needs—a common benchmark. "Cost is a very efficient way to summarize how many health care needs someone has. It's available in many data sets, and you don't need to do any cleaning [of the data]," says Ziad Obermeyer, an assistant professor of health policy and management at the University of California, Berkeley, and lead author of the new study.

In this case, however, the researchers found this proxy arrangement did not work well because even when black and white patients spent the same amount, they did not have the same level of need: black patients tended to pay for more active interventions such as emergency visits for diabetes or hypertension complications. The paper examined the health care records of almost 50,000 patients—of whom 6,079 self-identified as black and 43,539 self-identified as white—and compared their algorithmic risk scores with their actual health histories. Black patients, the researchers found, tended to receive lower risk scores. For example, among all patients classified as very high-risk, black individuals turned out to have 26.3 percent more chronic illnesses than white ones (despite sharing similar risk scores). Because their recorded health care costs were on par with those of healthier white people, the program was less likely to flag eligible black patients for high-risk care management.

The researchers suggested a few reasons for the cost disparity that caused this problem. For one, race and income are correlated: People of color are more likely to have lower incomes. And poorer patients, even when insured, tend to use medical services less frequently or have reduced access to them because of time and location constraints. Implicit racial bias (nonconscious or automatic behaviors that are not obvious to the biased person) also contributes to the health care disparity. Because black patients often experience this kind of bias, they receive lower-quality care and have less trust in the doctors whom they feel are exhibiting bias: one 2018 working paper from the nonprofit National Bureau of Economic Research showed that black patients have better health outcomes when they have black doctors because of higher levels of trust between the doctors and patients. Without a trusting doctor-patient relationship, black individuals are less likely to request extra care and end up paying for it.

Marzyeh Ghassemi is a Canada Research Chair in the departments of computer science and medicine at the University of Toronto [said that] additional computational models were used to verify the accuracy of the findings. Still, she points out, “lack of diversity in data is a long-standing and pernicious issue.”

2) Answer the following questions (200 - 300 words)

Q1 (Bias): What form(s) of bias can you identify in this case? Give reasons as to why these are the most likely form(s) of bias.

Q2 (Bias): The article stipulates some reasons as to why this algorithm discriminates against black patients. Could you identify which source of bias this is? Of the remaining two sources, could you indicate how such algorithm coud discriminate?

Q3 (Fairness): Evidently, a biased algorithm leads to forms of unfairness. Could you mention at least two forms of (un)fairness perpetrated by the algorithm (TIP: think of the sources of (un)fairness, such as data, outcomes, and the design of the algorithm)? How could these forms of (un)fairness be addressed by the algorithm in order to be reduced (or utterly eliminated)?

Q3 (Fairness): Supposed you have been hired by the National Health Agency (NHA) of some country to implement a “risk-care management” algorithms nationwide. Based on the previous experienced gained from the algorithm just discussed, which considerations would you recommend NHA to take into account in order to avoid current and potential sources of (un)fairness? Which provisions would you take up for increasing fairness in risk-care management algorithms?