Rail Tracer

DATA 605: Ethical and Legal Issues in Data Science

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Contact tracing for Covid 19 has emerged as a hot topic for debate in recent years when it comes to ethics. In this paper I will discuss some common ethical concerns. For background, I will provide a brief overview of the current proposed protocol by government on the Maryland state level, as well as the technology industry.

For the implementation of contact tracing, Maryland defines contact tracing as “the process of identifying people who may have come into contact with an individual who has an infectious disease like COVID-19…” (Maryland, 2022).

The protocol says to get tested regularly, and if you test positive, tell everyone you know as soon as possible. Then, tell your doctor to seek treatment (Maryland, 2022). To report a positive test, you can submit a report through a designated portal (Maryland, 2022). Additionally, whenever you want to talk to a contact tracer, a hotline is provided to do so (Maryland, 2022).

As for the private industry, I will discuss Apple and Google’s positions. These big technology companies have come up with their own technology to implement contact tracing. They tap into “short-range Bluetooth signals from smartphones. Phones would keep track—anonymously—of other phones they were near. When the owner of one of those phones was diagnosed with Covid-19, alerts would be sent to others who had recently been nearby…” (Barber, 2020).

In terms of scope, Maryland’s program is implemented in the entire state. Although there is no explicit declaration in its official website, it’s common sense that this protocol will remain in place until the spread of Covid-19 has stopped. Thus, this protocol is here to stay.

Apple and Google’s contact tracing technology can potentially be implemented in the whole country, with the decision up to the states (Barber, 2020). Back in 2020, Apple and Google said they would “disable the service after the outbreak had been sufficiently contained…on a region-by-region basis…” (Brandom, 2020).

Both programs have a lot of benefits. Maryland’s program shows the state values and actively implements contact tracing. Doing contact tracing allows us to slow down the spread of Covid-19, decrease the number of new infections, and educates people on the importance of quarantining and how to stay safe (Maryland, 2022).

Apple and Google’s contact tracing system also has good benefits. Their technology alerts governmental health professionals and the people in recent proximity quickly and effectively of people who are infected and those exposed to them (Barber, 2020). Timing is important, so quick timing would help these professionals quarantine people and stop the virus from spreading to more people.

Nonetheless, there is always a flip side. There are privacy concerns that come with contact tracing. For Maryland’s program, an issue is the government as well as other people knowing about where you have been and who you have been hanging around.

Submitting reports to the state means you are giving them personal information about your whereabouts. Big technology companies like Apple and Google also have this issue, however it is significantly riskier regarding them.

Whereas Maryland’s program collects voluntary and consciously disclosed information, Apple and Google’s contact tracing system operates behind the scenes in our phones, communicating via blue tooth signals with surrounding phones (Barber, 2020).

As our phones are always with us, we are giving Apple and Google locational data about where we are at any given moment. What these big technology companies could potentially do with this information, is why there is a lot of risk.

Thus, the pros are that these systems are a big help in informing the public about who has been infected, the areas of high infection, and if they have been near someone who has been exposed to covid. It also gives health officials knowledge about who in the community has been infected and exposed, so they can effectively coordinate quarantine procedures and contain the spread.

Without a contact tracing system, states would be entirely vulnerable to Covid-19, because there would be limited knowledge of who has it, when, or where. Contact tracing systems in both state programs and the technology industry have a positive purpose towards serving communities.

As for cons, privacy is a concern. Information collected is highly personal information, as it shows a person’s health status (Howell, 2020). This sensitive information if leaked, makes a person “vulnerable to abuse and stigmatization” (Howell, 2020).

Furthermore, privacy itself and its high risk of violation are a major ethical concern in contact tracing applications (Barber, 2020). The questions of privacy and violating privacy rights stem from the data used in contact tracing technologies and protocols.

Contact tracing systems collect as much data as possible, maintain it, and make decisions off it. In other words, the ethical concern of privacy violations centers around data gathering, possession, and usage. Another ethical concern is the strong influence of big technology firms, such as Apple and Google (Barber, 2020).

In terms of data gathering, Maryland’s program is voluntary. People can take at home tests and submit a positive result into their system (Maryland, 2022). The infected person is urged to tell everyone they know as soon as possible, including their doctor (Maryland, 2022). A contact tracer may call the infected person, for the purpose of getting basic information and a survey done (Maryland, 2022).

Using relativism, in my opinion Maryland’s system is reasonable and easy to understand. They are not forcing anyone to submit a positive test report, and forcibly notifying all their contacts when an infection is discovered. Thus, the individual has more control over what they share.

Other people may be uncomfortable with reporting their health status and locations. Because they have the choice, they can choose not to report it. Notwithstanding, from a utilitarian perspective it benefits the state due to slowing down the spread of Covid-19, so people should report positive results.

Regarding possession, although it does not say on its official site, I expect Maryland will keep the data in their archive and use it for further analysis and predictions. This is called time series data, as it stretches across time.

With usage, Maryland makes it clear that all personal information is to be used for contact tracing purposes only (Maryland, 2020). Furthermore, because all the information was volunteered, the system does not contain other sensitive information that would harm the individual in the event of a data leak.

I see nothing wrong with this since the data was voluntarily reported. With utilitarianism, this is preferred. The fact that the data will be stored for further use means the data is valuable and can be used to help fight the spread of Covid-19.

On the other hand, there is a lot more going on behind the radar with big technology companies and their contact tracing applications (Doffman, 2020). Big technology companies already have so much influence in our daily lives as well as the economy, these applications are just another way to extend their influence.

Regarding the data, a lot of personal information comes from our phones, including our locations, everyone we have been in contact with via their phones communicating, and our own health status (Barber, 2020).

These big technology firms would have all this information on its users, which touches on our rights to privacy. Besides this, there are other risks, such as what these big technology firms could potentially do with this data. Explicitly, these companies say they would only limit the use of this information to contact tracing purposes (Apple, 2020).

However, there is still risk simply because they have this data. Who is to say these companies will not use our information to market towards us? There is no proof that they are not, and there is no shortage of scandals throughout the years of the same companies violating customer privacy rights, among other rights.

Furthermore, there is plenty of skepticism towards the usefulness and necessity of these applications (Doffman, 2020). The UK government in particular, “blamed Apple for the mess it had gotten into, claiming a lack of support—denied by Apple.” (Doffman, 2020).

Also, big technology companies are huge targets for hackers. If someday soon a team of hackers succeed in breaking into Apple or Google, they could mine all customer information. After which, Apple and Google will renounce all responsibility as is business as usual.

Using relativism, I see the potential that Apple and Google’s applications have, and I am not too pressed about these companies knowing my locations and the people I’ve been in contact with. So, I would not have a problem using these applications for myself.

From a utilitarian perspective, we need to factor in the low payoff of these applications. It certainly is not performing as successfully as it was intended to. Coupled with the ethical concerns for privacy and data breaches, the costs would not be worth mass implementation.

Regarding Jane’s scenario, there are ethical issues with both the conduct of the contact tracers and Jane. With the contact tracers, the ethical issue is privacy, which has already been discussed. Using relativism, I thought the contact tracer was just doing their job. Every job comes with risk, including ethical risks. However, jobs still need to be done. The tracer was also professional in their questioning.

From a utilitarian perspective this is also fine. The purpose of deploying contact tracers to the campus was to investigate and mitigate the spread of a new Covid strain. There is a big potential payoff to not only the campus but to the country. Aside from the tracers, Jane’s actions had a few ethical issues.

Jane only notified her close friends and family about John. One ethical issue with her is negligence. She should have done her due diligence and notified anybody else she knew who had also been exposed to him. This ethical issue of negligence can be expanded upon due to her going AWOL. She showed a blatant refusal to help with the investigation.

Destroying her phone is literally destroying important information useful to the investigation. Although Jane was afraid of being monitored by the government, she should have handed the phone or any other relevant information over to the investigator before going off the grid.

From a utilitarian perspective, what she did was wrong. She should have stayed and helped with the investigation. Destroying her phone and abandoning all technology was a selfish move, that she made at the expense of everyone else.

Using relativism, I do not believe this is a realistic scenario. There is no way a rational person who attends a college in the United States would have the thought process that Jane had. First, the government and our devices all monitor us to some extent.

Jane should not be surprised about this, and renouncing all technology is not sustainable. She would need to jump into a monastery or off a cliff. Moreover, everything Jane wants can be achieved if she had just communicated clearly with the tracers.

She should have told the tracers to their face that she is not interested in helping with their investigation, nor does she want to be further contacted by the County and will choose to keep her health information private.

Finally, I have some ethical decision-making guidance for data science engineers involved in developing applications for contract tracing. I suggest that government and big technology companies alike need to be “transparent about their privacy and data collection practices and should commit to restricting their use of the data for contact tracing purposes.” (Howell, 2020).

Doing this will help limit privacy violations. Also, the public will trust the applications more, and thus be more comfortable with downloading and following recommended procedures (Howell, 2020). Naturally, the more people participate, the more effective the applications will become.

The ethical compromises we need to make for mass implementation of these sorts of applications must be weighed carefully by governments, and individuals alike. From a relative standpoint, I am not fazed by risk. In daily life, there is risk everywhere. When you drive on the highway on your way to work, you could die at any given moment. But we still do it each day.

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