Module 8: Portfolio Project

Why Software Developers Should Take Ethics into Consideration

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Nowadays, software is impacting all aspects of our lives, including how we meet people online. As society is becoming more reliant on software, it is up to the software engineers to develop their software ethically, as the software that they are creating can make profound impacts to our society. If software developers do not consider ethics in the software that they create, the results could be devastating to the end users who are affected by the software that is released, even if the said devastating results were not intentional by the developers. Not only can a lack of ethics in software developers hurt the ones affected by the software, but it can also hurt the reputation of the company that the software was created by. This paper explores unforeseen lapses in ethics with dating applications, ways to mitigate them, and the importance of why software engineers should take ethics in consideration throughout the software development process.

Wiwad, Ph. D determined that the dating app Tinder had a decline of reviews from having a 4.05 star rating in 2013, to 2.35 in February, and after he analyzed 525,000 reviews, he noticed that the major factor was due to complaints of “fake users (e.g., bots, scammers, etc)” (Wiwad, 2022, para. 1). By allowing bots and scammers on their platform, Tinder can boast about the increased match count, since, ideally, bots and scammers would want to match with as many users they possibly can. If the Tinder software developers considered the ethical impact of having bots and scammers interacting with their human users, they could have come up with ways to mitigate the risk of having their users being scammed and mislead, and potentially avoiding the downtrend of their ratings.

Developers need to be careful, and ethically consider how they use algorithms to help drive potential matches on dating apps. Tseng claims that “most recommendation algorithms utilize ‘collaborative filtering’, where majority opinion influences what a new user sees on their feed” and “because these algorithms are based on human opinion, they introduce bias” (Tseng, 2022, para. 2). If women “disliked” men who are bald when looking for matches, bald men would appear less likely for women who are looking for matches, and the same goes with different races. By using a collaborative filtering algorithm in dating apps, developers are introducing biases on who is more and less likely to be matched, which favors the majority, but can be detrimental to minority subsets of users.

In order for a dating website to be successful, they must recruit and maintain a large user base. End users will use the dating sites in hopes of meeting someone, and the end goal is to not need to use the dating website when they find their partner. One of the ways the developers of a dating application can have their users continue to return to their platform is by making their application addicting. Tinder executive Jonathan Badeen admitted that the swiping mechanism of Tinder was partially inspired by one of B.F. Skinners experiments where “he conditioned hungry pigeons to believe that food, which was actually being delivered at random times, was prompted by random pecking. So, the pigeons began pecking more often in certain ways, in the hopes of getting more food” (Johnson, 2018, para. 2-3). With the users of Tinder performing the action of swiping on the application, they are sporadically rewarded with a match, and like the pigeons, they would continue pecking to receive more rewards.

While displaying reviews of users who claimed they got married because of the relationships they have created by using the app, the addictive nature of the application itself shows that their true intention is to keep their users hooked to the application, which help produce more revenue for the dating application.

In order for developers to incorporate ethical considerations into their work, I would suggest asking questions, and discussing with their peers, managers, and stakeholders throughout the development life cycle. By doing so, teams can identify how the software they create can potentially harm others and come up with solutions to mitigate the potential ethical problems that may arise with the product design, or the features that are included in the product. I believe that one of the most important questions that developers should be asking is how can the software that they are developing hurt someone. By doing so, this allows the developers to come up with sensible solutions to resolve any ethical concerns before their release. Ford identified that Tinder “introduced machine learning to detect abusive messages and language, and then ask the writer to reconsider the message before sending it” and “in 2020, Bumble introduced AI to blur specific images and require user consent to view them” (Ford, 2021, para. 12 ). Tinder released “this new feature to help curb abuse and harassment on the app before it happens” (Javed, 2021, para. 1). Although these are great features that Tinder and Bumble released, if the ethical considerations of how their software could harm others were asked during the development process, then these features could have been introduced upon release of their software, rather than implementing them in a reactionary way.

It is not only up to the individual developer to maintain ethics in the software that is being created, but also for the whole community that is involved.

Companies should provide annual ethical training for their employees and adopt a code of ethics that they follow. Nieweler claims that adopting a code of ethics helps create a company culture which positively pressures others to maintain the values of the company and prevents violations of ethics from occurring that may not be obvious to the developers (Nieweler, 2016, para. 5-8). By providing annual ethical training for the employees, it would help keep ethical considerations in the forefront, and to remind their employees of their own code of ethics that they follow.

I do not think there should be legal consequences of unethical software if there was no intent in the software harming someone else. It is difficult for law to keep up with technology. Acenda claims that dating applications can cause stress & anxiety, poor body image, and lower self-esteem (Acenda, 2021, para. 4-6). These are all profound negative effects of dating applications, and the creators of these dating applications did not have intent to cause harm to its users when launching their respective dating applications. Should there be consequences for the creators of dating applications on the fact that their dating websites contribute to damage to mental health? If there were consequences for any software solution that resulted in negative outcomes for individuals, I feel that it would stifle innovation, as nobody would want to take the risk of being charged for releasing unethical software.

Andrea Matwyshyn claims that law is generally five years behind technology (Tanneeru, 2009, para. 9). This is because it is difficult to predict technology innovations, and the effects that they will have on society. If it takes 5 years for governments to create law to address unethical behavior, 5 years of damage would have already occurred before law would be able to address it.

I do think it is still important to create law to prevent ethical behavior, however, as software engineers, we need to be proactive rather than reactive in the way we address ethical issues in the software that is being created.

To reduce the amount of unethical software from being released, software engineers should discuss the ethical considerations during the software development life cycle, and they should also take classes on ethics as well. Sezer pointed out that “a large body of research has shown that unethical behavior often stems from actions that actors do not recognize as unethical” (Sezer et al, 2015, para. 3). By having discussions on the impacts that our software will create, and learning about ethics as a software engineer, it will help prevent unethical software from being released.

Ethics in software engineering has a great importance, especially for software developers who work on dating applications. Even if the intentions a dating application are pure, certain features that are included within the application could have negative effects to society, making the software unethical. Dating apps that are addictive can help maintain a large user base but can foster unhealthy relationships. Without the foresight of bots and scammers populating the use base, it can lead to honest users being taken advantage of. Dating applications can also enable the users to verbally abuse and send unwanted pictures to each other. Considering the impacts of the applications that software developers throughout the development life cycle process, it enables them to come up with creative ways to mitigate those risks. Tinder has included a feature that will ask a user if they are sure they want to send a message if their software detects that it could be an abusive message, and Bumble released a feature that would blur images, and ask the user for consent to view them before the image is shown. These were great examples of ways that software engineers mitigating ethical risks, but perhaps if they thought about the risks before their initial release, then there would have been fewer victims of verbal abuse or seeing unwanted photos. We cannot rely on law to punish developers who release unethical software because it takes about 5 years for law to keep up with technology. By the time that law is implemented to punish developers who release unethical software, damage has already been done. Software engineers should consider how a software solution will improve the lives of others, but also consider how the solution will negatively impact the lives of others. By doing so, developers can come up with safeguards to prevent negatively impacting lives from the beginning, rather than to implement safeguards after damage has already been done. As a software developer, it is important to ask questions about the features that are planned on being implemented, and discuss with peers, managers, and stakeholders about the potential risks of implementing the said features. As a community, we should adopt a code of ethics, and promote yearly trainings to make help promote a work environment that consistently considers ethics with the solutions that are developed. Software developers are at the forefront of shaping how our society works due to the ever-increasing reliance on software in our daily lives, which gives our software developers the heavy responsibility of maintaining ethics with the software that they release to ensure profound injustices and damage does not take place in society.

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