Reflection on Ethics

Ryan Pals
Computer Engineering
Iowa State University

There are many well-known incidents of engineers getting caught making unethical decisions, such as the Ford Pinto fuel tank or Volkswagen's "Dieselgate." When these types of occurrences are brought to light, they tend to make national headlines and inspire outrage from the public, and rightfully so. A single selfish decision made by a few engineers can have a serious impact on the lives of thousands, if not millions of other people. All engineers need to make it their duty to remain ethical in every decision they make.

Not every ethical decision in our professional career will be "black and white." Many times, there are actions that could be interpreted as either ethical or unethical depending on many factors, such as the way the problem is presented or the context of the situation. The purpose of the IEEE Code of Ethics is to provide a discipline-wide, unified code of ethics which can serve as a guideline to make the correct decision when the answer isn't immediately obvious.

Personally, my prefered way of handling an ethical dilemma is the "front page" test. If I am considering taking an action, I think about whether I would be ok with that action being published on the front page of the newspaper. If not, it's probably an unethical choice, and I refrain.

Additionally, I always take time to think about how my actions affect other people. This is important because, as an engineer, my actions could have incredibly far-reaching consequences. For example, only a handful a people were involved in the design of Volkswagen diesel engines, but every single person on the planet is affected by the increased pollutants in the atmosphere. Working as engineer, any unethical design decision could have a massive impact.

I also make a point to pay attention to the people around me. I observe what they are doing, and try and analyze the reasoning behind their actions. If I think that an action might be unethical, and I notice that the person advocating for that action might be motivated by a less-than-noble reason, (money, recognition, anger, etc.) I am instantly more cautious moving forward. These techniques help me stay ethical in every decision I make.

As part of my required Computer Engineering 394 seminar course, I spent an hour with a professor and about one hundred other students discussing ethical issues in the tech industry. During our meeting, we discussed the ethical issue of companies collecting, storing, using and selling data about us. The conversation focused mostly on the Amazon Alexa and Google Home. This exercise was interesting because about half the class showed concern for what these tech giants were doing, while the other half reacted with complete indifference. I sided with the concerned group because, while I understand that every user agrees to data collection when they

purchase their Alexa, I think that most of them don't really understand just how much data is being collected. I would also argue that few people fully understand just how much companies can learn about them, or how effectively they can use this data to influence their shopping habits. It greatly concerns me how little the average user understands these devices.

After this meeting, we were given a list of six "Virtue Ethics" and asked to reflect on how each relates to the case study discussed in class. The six virtues are integrity, honesty, fidelity, charity, responsibility and self-discipline. The three virtues most relevant to the Alexa debate are responsibility, honesty and self-discipline.

Responsibility is the first on my list because consumers are putting a lot of trust in these companies when they give away their data. While many people are ok with Amazon knowing a great deal about their life, they would probably not be happy if that data was stolen by a hacker. There are also other ways a company can handle data irresponsibly; in class, our professor discussed a incident where Netflix released a large amount of anonymized data as part of a coding contest. A group of coders were able to use social media data to de-anonymize the Netflix data. From this, they obtained private information, such as browsing habits, on every Netflix subscriber. Furthermore, they were able to use correlations between browsing habits and things like sexual orientation to discover even more sensitive information. This kind of data misuse is unethical and unfair to the consumer.

Honesty is next on the list because I think it plays a very interesting role here. In the case of the Alexa, Amazon does not hide the fact that they record every second of conversation in your home. They also don't hide the fact that they store this data indefinitely and process it in some way: presumably to find out how to sell more stuff. The interesting part is that even though everyone knows that they are storing and processing the data, no one really knows exactly what they're doing with it, and few consumers truly understand just how powerful the use of this data can be.

The last virtue I chose was self-disciple. This is an interesting virtue because it applies to both parties in this ethical case study. I hope that Amazon has the self-discipline to only use customer data in ways that will improve their lives, despite the high likelihood that they will discover ways to influence them to do things outside of their best interest. On the other hand, the consumer should have the self disciple to realize that some of this new technology comes with a great trade-off; we should respect our own privacy enough to realize that allowing a mega-corporation access to every word said in our homes is not worth the slight increase in convenience when ordering knick knacks from the internet.

It is the duty of every engineer to remain constantly aware of the multitude of ethical considerations involved in their profession. Thankfully, we have The IEEE Code of Ethics to serve as a universal guideline to help all engineers maintain the highest of ethical standards. This is important because these ethical considerations are becoming more prevalent, and more intensely debated, as technology continues to become increasingly complex and integrated in our daily lives.