Professional Ethics

By Ryan Gallus

In computer engineering, a code of ethics is a crucial part of the professional industry. The technology we develop affects millions of people around the world, often in critical infrastructure where failure could result in the injury or death of users, passengers, or bystanders. The code of ethics ensures engineers are working to the best of their ability to provide safe, quality designs. It is also important for maintaining honest communication with manufacturers and users of engineered products. When I am faced with an ethical situation, I first evaluate the conditions that lead to this situation. What can I change to avoid an ethical dilemma in the future? Next, I analyze how my decision will affect others. In an engineering sense, this generally means considering how the user is affected by a decision. Finally, I may look at other factors that will be affected by my decision. Once I have considered all of these outcomes, I will make the most ethical decision I can.

While studying abroad, I participated in ethics case studies as part of a professional computing class. One case study explored the following ethical dilemma: in a situation where a self driving car must decide between hitting several pedestrians or swerving off the road and possibly killing the driver, which action should be taken. If the car swerves off the road, it will minimize the possible loss of life but direct injury toward the operator of the vehicle. If the car remains on course, the driver will be better protected but several pedestrians will be hit. There were many differing positions on this issue, with several of the computer engineering students believing the car should be developed to protect the user over other people. In the end, however, we came to the consensus that minimizing loss of life is the most ethical course of action, as long as the operator of the vehicle is aware that the car will respond in this way.

I believe several of the virtues from the "Virtue of Ethics" list apply to this case study. First of all, integrity is critical to this situation. Integrity is described as exercising good moral judgement. In this case, a judgement is being made between injuring several people or injuring the operator. Another virtue that applies is honesty. When marketing this self driving car, it is important that the operator understand what decision the car will make in this scenario. If the car is programmed to swerve off the road at the expense of the operator in order to minimize loss of life, then the operator needs to know that before using the car. Finally, the virtue of responsibility applies to this case study. Who is responsible for the decision the self driving car makes? Does the blame fall on the manufacturer, or the operator? What if the pedestrians were crossing illegally? All of these questions relate to responsibility. While various virtues apply to this situation, I believe integrity, honesty, and responsibility are most critical to this particular case study.

It is always important to consider ethics when making decisions. Having an established code of ethics ensures consistent, quality work. In computer engineering, decision we make in develop can directly affect the lives of others, making it very important that we consider ethical dilemmas before they are implemented into planes, cars, computers, and critical infrastructure.