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October 8, 2023

Ethics in Engineering

Ethics are incredibly important in engineering, as decisions made by engineers can have significant consequences for individuals, society, and the environment. Organizations such as the IEEE have developed a "Code of Ethics" to ensure that ethical principles are supported in engineering. In addition to these standards, there are multiple approaches to ethics, such as the "Virtue Ethics" and the "5 P's of Ethics," all of which highlight the most crucial aspects of making ethical decisions. This essay will explore the purpose of having and following ethical rules, my decision-making process in ethical situations, the ethical issues we discussed in class, and their relationship to personal ethics and virtue ethics.

A "Code of Ethics" is a set of principles and guidelines that serve as a moral compass for professionals in a specific field. In computer engineering, the IEEE Code of Ethics is a notable example. It provides a framework for ethical behavior, helping engineers navigate complex ethical decisions. It emphasizes values such as honesty, integrity, and responsibility, so that decisions can be made that are moral and benefit society. The Code of Ethics also instills public trust in the engineering workforce by ensuring that engineers are held accountable for their actions. Since it's a widely known and accepted standard for ethics, it helps prevent unethical conduct and malpractice, safeguarding the interests of others and the environment. Overall, a Code of Ethics promotes ethical behavior, protects engineering's reputation, and maintains public trust in the profession.

When I am confronted with an ethical situation, my decision-making process involves a combination of my personal values and ethical standards. I always make sure to carefully consider several factors before reaching a decision. Before anything else, I clearly identify the issue and who all is involved. Then I gather information about the dilemma by collecting relevant facts, considering different perspectives, and even consulting others. When thinking of potential solutions, I always evaluate the consequences of each decision, and I do my best to consider both short-term and long-term impacts for myself and the other people involved. I also assess how each decision aligns with ethical standards and my own morals. I want my decisions to be an accurate and consistent representation of who I am, how I think, and what I value. Based on the information and my analysis of the situation, I finally make an informed decision that

aligns with my ethical values. Afterwards, I make sure to evaluate my decision's outcomes, looking at where things went well and where I could improve next time. I know I always have room to grow, and I want my thought process to be open for continuous improvement.

During this class, we discussed several ethical issues. One was the Amazon Echo issue, where Amazon refused to release data stored on an Echo device that was in use at the time of a crime. The Pinto issue was about the rushed production of the Ford Pinto, where a known safety hazard was left unfixed when the car was released to the public, leading to preventable injuries and deaths. Meanwhile, the Big Data issue was about a computer scientist who was asked to include sensitive health data in a research project without the individuals' consent. When discussing these issues with my classmates, I found that many of their ethical considerations were similar to my own ethical values, while their insight also offered new perspectives I had not considered before. For instance, we all agreed that while the Amazon Echo issue had a conflicting outcome, Amazon's decision to keep the data private was for the best, as it shows a commitment to user privacy. One classmate also brought up the fact that releasing the data would have set a precedent where Amazon would then be obligated to release data for any other police or government official that asks. I had not initially thought about this consequence, and I agree with their assessment. Overall, by referring to the Code of Ethics in our discussion, we all were able to agree about the outcomes of each situation.

The case study I presented to the group was the Big Data issue, where Marcus, a contract computer scientist, was instructed by a colleague to handle personally identifiable information (PII) and sensitive health data for his research project. Out of the six virtue ethics, I think this issue is most relevant to the virtues of integrity, responsibility, and self-discipline. Integrity is essential in this case, because Marcus has a commitment to moral and ethical principles. By handling PII and other sensitive data, Marcus would be compromising his integrity. Even when facing the request from his colleague on the project, Marcus must maintain integrity by refusing to participate in unethical practices and protecting the privacy of others.

Responsibility is also an important virtue in this case. As a professional in the field of data mining, Marcus has a responsibility to ensure the data he is working with is handled in a manner that respects the privacy and confidentiality of others. He has a duty not only to the research group, but also to society, to protect people's information. By choosing responsibility, Marcus must also recognize the ethical and legal consequences of his actions and decisions.

Finally, self-discipline is also relevant in this case, because it relates to Marcus's ability to make his own ethical decisions, despite the external pressure. While Marcus is told to handle PII inappropriately, he should employ self-discipline to resist the temptation, even when it might be easier to agree. The other virtues, honesty, fidelity, and charity, are also important ethical principles, and I think they are already encompassed in the first three virtues. Honesty goes hand in hand with integrity, and fidelity, or faithfulness, relates to Marcus's responsibility to respect people's privacy. Similarly, compassion is present in all of the virtues, as upholding integrity, responsibility, and self-discipline is done out of compassion for others. In addition to the six virtue ethics, I think the virtue of assertiveness also relates to this case. In order to act ethically, Marcus must stand up to his colleague, which requires him to be assertive and clearly state his decision.

Ultimately, engineering is a multifaceted discipline that requires a strong ethical foundation. The IEEE Code of Ethics, along with other ethics standards like the "Virtue Ethics," serve as valuable frameworks for making ethically sound decisions. Personal ethics, which incorporate these principles and one's own morals, guide our actions and help us navigate difficult decisions. In the constantly evolving field of computer engineering, it is crucial to adhere to ethical principles to ensure our innovations benefit society and uphold the virtues of ethics.