

Ethics Essay - Kurt Markham

Ethics involves accepting the personal obligation and accountability we have in regards to our profession and the work we do. Our work affects our community, our world, and people's perspective on engineering. A code of ethics provides a guideline for members of our profession to follow. It allows for our work to be reviewed by ourselves and others to make sure that our actions are ethical and professional. Without following a code of ethics, engineers might do something that does harm to the world, the community, or their reputation with or without their intent to do so.

I follow the IEEE code of ethics provided to us as computer engineers at Iowa State University. I use it to check if I'm making the ethical decision when faced with a situation that has effects beyond myself. When I decide on a decision based on my own decision making, I reference with each of the statements listed on the IEEE code of ethics and evaluate if my decision obeys them. If it doesn't, I adjust my decision accordingly and change my decision making for the future.

For example, we can use the statement "to reject bribery in all its forms" from the IEEE code of ethics and explain how it applies to professional decisions. This equates a supplier giving something gracious, including money, opportunities, etc., to alter a decision being made. If choosing to use software from Company A or Company B, Company A might offer cash to choose their software where Company B's software has better performance. Accepting the cash and choosing Company A's software is a clear bribe and violation of ethics. Although not all bribes are so clearly defined with cash. A superior in a company might offer his employee an opportunity for promotion if they file a complaint about another employee the superior does not like. Although no material good are traded, the superior is still bribing his employee and is a serious violation of ethics if he or she accepts. All decisions must be made without accepting bribes from anyone, even if they are not directly involved.

We discussed an ethical issue that required this type of decision making in the course CprE 294 at ISU. The issue discussed was deciding who owned the data gathered from Amazon Echoes and other smart home devices and who should be able to access the data. The people involved include law enforcement, Amazon or company that owns the smart device, the owner of the device, and/or people recorded by the smart device. Another issue involves the case if the smart device may contain valuable information about a crime that occurred in its presence. With whom should the data be available to, including law enforcement, if a crime has been committed.

We decided as a group that the data belonged to the owner of the smart device and the owner accepts that the data will be used by the smart device's company for various analysis and improvement of their systems. If the owner decides that it doesn't want the data used by the company anymore, the company should be obligated to delete any data they have and

refrain from gathering more from that device. Law enforcement should not have universal access to data from smart devices without the pretense of a crime. We came to this conclusion based on various criteria from the IEEE code of ethics. One criteria was that our decision must avoid injuring others, their property, reputation or employment by false or malicious action. If the data was freely available to the public outside of the owner and company, they might use it to collect information about the owner and use it to commit harm to them. Our explanation was that the information could be used to determine what time the owner was away from home or asleep, and use that to burglarize the owner's home, which is an injury to the owner's property and possibly the owner themselves in the worse case. Another criteria we used was avoiding real or perceived conflicts of interest whenever possible. If the company of the smart device had total control of the data they collect, they could sell that information to other companies. That would allow them to show particular favor to some companies over others for various reasons, creating a conflict of interest. While some companies may use the data for good, the company of the smart device may decide to sell the data to companies that will use the data maliciously because they have a mutually-beneficial agreement or they will pay more.

A contradiction occurs when a crime has been committed and law enforcement requests the data as it has a chance to determine the perpetrator. Assuming the data is useful to the law enforcement, they can use it to identify and capture the perpetrator, leaving less time for the perpetrator to commit another crime and hurt anyone else. This makes the community safer and benefits the public, but ignores the many problems that can come from this decision. The first is that the data is used to misidentify the perpetrator, letting the real perpetrator get away. This directly harms the misidentified as he or she is falsely accused and the public as the criminal has not been detained. Another problem arrives later when more law enforcement ask for data from other smart devices. This allows for the first problem to possibly occur repeatedly and injuring the reputation of smart device technology. If the smart device chooses to only give data to select law enforcement agencies, it creates a conflict of interest as one agency is given substantially more power than others. Due to the many problems that arise from giving law enforcement agencies access to the data freely or even partially, our group decided that they should not have any access to any of the data from a smart device, excluding use of a legal warrant.

In my opinion, the three virtues of ethics that best relate to this ethical issue are fidelity, self-discipline, and responsibility. Fidelity is related to the faithfulness of the company to the owner of the device. The company should demonstrate their fidelity to the owner by respecting their privacy. If the owner requests that all of their data to be deleted, the company should do so and completely. Self-discipline relates to the extent that the company uses the owner's data. The company should not give the data away freely, but they should use the data to improve their technology for the benefit of the owner. Responsibility relates to how the company is responsible for keeping the owner's data secure and private. That means the data has sufficient layers of security and data leaks are prevented from inside the company.

In all decisions made, ethics should be used as a guide to the correct decision. The IEEE code of ethics is the guide used by myself and all other computer and electrical engineers at ISU. Although many decisions have hidden elements that influence the decision, including bribery, careful examination with each of the ethics guidelines should bring these to light and prevent them from altering the decision. The smart home device example showed the process being performed, but also showed the fact that each decision choice may need to be considered carefully; that one decision may seem to be the most ethical, but is not under closer examination. Ethics is something that must be practiced throughout professional work and is always used to make decisions.