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Ethics Paper

Software engineering is a rapidly growing field because of the technologies that are spreading throughout modern society. This career may be lucrative, and in high demand; but it also requires a strong ethical compass as well. According to an article about ethics on InfoQ.com, "... software engineering is one of the more influencing practices we have today that is shaping society" (Hermon). With the vast use of software today, and the extreme amount of data collection that occurs, I completely agree. As a software engineer, one must think not only of how to complete the project, but also, how to ethically complete the project. Personal, private data is collected on each of us throughout each day. This data collection is one of the more dangerous aspects of becoming a software engineer from an ethical standpoint. A question I believe all software engineers should constantly ask themselves is, "How much data is truly needed to perform the operation of the software I'm designing?". The second and equally important question should be, "How am I going to protect the data that my software collects?". As an engineer designing software that may be used by the masses, we are ethically bound to use only the data that is needed in our program, while also protecting that data and the privacy of our users. As stated in the Association for Computing Machinery's (ACM) Code of Ethics, "Computing professionals should only use personal information for legitimate ends and without violating the rights of individuals and groups" (ACM Code of Ethics). This is an aspect of

software engineering that I believe is often overlooked and can be an ethical dilemma for the engineers developing certain software. The Institute of Electrical and Electronics Engineers (IEEE) states, “to hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices, to protect the privacy of others, and to disclose promptly factors that might endanger the public or the environment” (IEEE Code of Ethics). With two recognized organizations publicly stating an ethical goal for all computing professionals, how is it that private data collection seems to have jumped exponentially over the past 15+ years? I believe that the reason is profit for companies, accompanied by engineers that are not holding their employers and themselves to an ethically responsible standard.

I can understand the ethical dilemma these engineers face when designing software that collects private data. I can understand that you are to follow the orders of your boss. At the same time, if you are designing software and believe that data is being unethically used, it is your responsibility to speak out. I know that may not always be easy to do. I can also understand that each of us needs to put a roof over our heads and food on the table. That is no excuse to not hold yourself, and your employer to an ethical standard though. I believe it is each of our responsibilities to stand up for what is right. If something is not right, speak up. Chances are that your peers may agree with you. The problem is, if no one asks questions, and no one speaks up when they know something is wrong, no one is being held accountable for the invasion on users' privacy and the effects of data loss that may occur if security is breached. I think that I am personally prepared well for this situation if it occurs. I will try to tactfully ask a question such as, “Why do we need to use this data for this function of a program?” if it doesn't make sense. If it comes down to it, and I know that some type of collection is wrong or unwarranted for the

situation, I will just tell my boss or higher up if needed. On the other hand, from a security standpoint in coding I'm not prepared for that because I have not learned how to best protect data and software I make from malicious use. To prepare for that aspect of software design, I will have to educate myself and always give my best effort while writing code to keep data private and protected.

Along with the codes of ethics from organizations such as the ACM and IEEE, Christian's also have the Bible to help guide us through our careers. Although these guidelines may be worded differently, at times they are saying similar things. Overall, the Bible teaches us that, "All Scripture is God-breathed and is useful for teaching, rebuking, correcting and training in righteousness, so that the servant of God may be thoroughly equipped for every good work" (*NIV*, 2 Timothy 3:16). This is comforting, to know that as a Christian, all that you learn from God's word will help you in all good works that you do on this earth, including your professional career. Ethical statements such as, "To treat all persons fairly and with respect, to not engage in harassment or discrimination, and to avoid injuring others" (IEEE Code of Ethics). Are supported in biblical teachings as well, such as "Do to others as you would have them do to you" (*NIV*, Luke 6:31). I believe this is a strong guideline to help all Christians and applies to engineers ethically developing software as well. The ACM calls computing professionals to, "Strive to achieve high quality in both the processes and products of professional work" (ACM Code of Ethics). To me, this goes hand in hand with a passage from Titus, "In everything set them an example by doing what is good. In your teaching show integrity, seriousness and soundness of speech that cannot be condemned..." (*NIV*, Titus 2:7). As a software engineer or any computing professional, if you produce high quality work and ethically strive for what is

best, you will produce quality software and raise the ethical standards of your peers, the company you work for and the community.

Works Cited

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