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A Question of Ethics: Big Data and AI

In today's society, artificial intelligence has become a widely talked-about topic. Some people and businesses are embracing it as a benefit to society, and others are more cautious and determining the threat. According to an article by Mike Isaac, Ford Motor Company is moving towards autonomous vehicle development to provide "mobility services" to "enable people to get around without owning cars". On another side of things, according to an article written by Kai-fu Lee, "People worry that developments in A.I. will bring about the "singularity" — that point in history when A.I. surpasses human intelligence, leading to an unimaginable revolution in human affairs". However, as AI is being implemented in today's society, it is widely agreed that AI should have an actual ethical system laid out to follow to make sure people who interact with it remain safe. Intelligence is something that can be taught, but it can be argued that ethics is something a human develops over time from a number of factors: nature of upbringing, type of environment, religion, friends, family, and/or the law. Therefore, it brings up an interesting topic regarding AI. What kind of ethics should they follow?

It may be arguable, but what is ethically acceptable in society is whatever keeps the rights of people alive. Right to life and right to choice—both are important in ethics. According to Dr. Strangas's slides, "morality concerns the goodness of voluntary human activity that impacts the self or other living beings". Ethics can be summed up by the phrase "to do whatever is right". What is right usually depends on the welfare of others and oneself, and how an action could impact something else. Without thinking of tools, on a purely human level, acceptable ethics in society depend on these things. With AI and hiring and big data, it can be harder to draw clear lines. Artificial Intelligence lacks this "human touch", common sense, and the ability to reason that humans possess, therefore it provides a challenge to code. Ethics can sometimes rely on a moral instinct, and sometimes it can go against instinct and therefore be difficult. These are things that make it a challenge to break down.

To help analyze this, a more specific example can be looked at, for instance, the usage of an AI tool in making a hiring decision in a company. According to Sara Castellanos, "Artificial intelligence is helping companies across industries answer human resources-related questions,

automate some HR tasks and suggest jobs to prospective candidates”. On one hand, using an AI tool seems like an efficient way of moving through applicants faster. It saves time if done by an AI rather than by a human being. There is also the benefit of hiring without bias, which is an attractive idea if nothing else. Even a person with nothing to gain or lose from a decision will have some sway in the decision that they make. Picking “randomly” from a batch is not always truly random in this way. To put this into a clear picture, here is an example. A human employee has to hand pick 30 from 100 candidates, all of which who are equally acceptable on paper. However, they all come from different backgrounds. Picking solely on outward appearance, no matter how “unbiased” or “random” the human employee tried to be, could still be argued as bias because there is no saying what subconscious bias the human employee had. To eliminate any chance of bias, the human employee would be better off to pick 30 out of the 100 by picking 30 resumes out of a hat without looking at the faces of any employee. This action could be done by an AI tool to speed up the process. Of course, the hiring process is not always so simple. It sometimes does take a human touch to figure how which person is a good fit for the position at the company, and that is really what an AI used for hiring would be learning how to do. Moreover, there are downsides to using this tool. According to an article by John Murawski, “AI algorithms may be flawed”. Also according to the article, Microsoft’s 2018 annual report stated that AI solutions “that are controversial because of their impact on human rights, privacy, employment, or other social issues” may lead to brand or reputational harm. The issue of bias continues, as an AI tool could have the bias from whoever programmed it.

Another topic that lends itself to an ethical dilemma is the issue of big data and its usage in businesses. The idea is that after a person uses a website, perhaps an online shopping website, to search for something he or she likes, the data is collected and the next time he or she searches, the website will show them something similar to what they searched for last. It seems simple and convenient, however with enough data, these self-learning algorithms can store specific information about a person. Since this isn’t something a person would normally consent to, it is a gray area in the world of big data and ethics, especially when companies turn to “persuasive computing”. As described in Dr. Strangas’s presentation on Big Data and AI, in the future, through manipulation technologies, platforms will be able to steer or guide people through courses of action, which introduces another concept called ‘big nudging’, in which the government is involved. However, would the average person decide to drop the online shopping website just to avoid letting it take their information in exchange for not getting convenient suggestions on what to buy? The answer seems to tip towards no. Another example of its

implementation is even intertwined with AI. According to an article by Castellanos, Ernst & Young implemented an AI-powered chatbot named “Goldie”, and quoted by the chief innovation officer of the company, “Eventually, AI could offer personalized recommendations for training programs that could be useful for career development. It could also suggest which employees should be assigned to specific teams, in order to get the highest-performing teams possible”. Another example involving AI, according to Castellanos, is IBM. According to the article, “IBM is using its own artificial intelligence platform, called Watson, to learn from the 3 million job applications IBM receives annually.” It is said to know the skills of IBM’s jobs internationally and maps it to the data coming in from the applications. If people continue to use these websites and apps that use big data, it seems as if there almost should be a code of ethics for these companies to follow regarding how big data is used.

What would be the ethical decision in the case of using an AI tool to assist in the hiring of new employees? The utilitarian decision, which aims at acts that tend to increase the sum of human happiness, would be to hire everyone with or without the use of an AI tool. However, that may not be possible due to the recruitment limitations of the company. Therefore the deontological view can be seen as another way to come to an ethical decision. The deontological view claims that certain actions are right or wrong regardless of the consequences. In using an AI tool, it would be reasonable to use it if it sped up the hiring process without inflicting any bias during the decision-making process. The lack of bias is an important factor because if there is any trace of bias due to an error in coding or due to a bias inflicted by the coder, intentionally or not, it can lead to consequences. An example of this case can be found through an article by Murawski, in which a study by the Massachusetts Institute of Technology and Stanford University “found three commercially released facial-analysis programs were successful in correctly identifying the gender of light-skinned men, but prone to committing errors when guessing the gender of dark-skinned women”. From this example, it is reasonable to think that releasing this program into the public would not be the best idea as it does not work for everyone. What about regarding the case of big data and how companies make use of it? The utilitarian view would want to make everyone happy, so it is reasonable to think this view would lead to a decision that keeps giving people recommendations, regardless of the data collection. Perhaps companies would need to ensure that this data does not fall into wrong hands. The deontological view would lead to a decision that is made on the grounds of ensuring no one is manipulated, and that things remain transparent so that the consumers know what is going on with their data the company is collecting.

Why should anyone care about the ethics of these topics and if they've been established already or not? In an article by Murawski in which AI usage in companies is analyzed, "Software giants Microsoft Corp. and Salesforce.com Inc. have already hired ethicists to vet data-sorting AI algorithms for racial bias, gender bias and other unintended consequences that could result in a public relations fiasco or a legal headache". There are real-world consequences for mistakes an AI can make, and even one mistake can spark a long-running distrust in the brand and reputation. According to Murawski, "A number of universities are offering courses on AI ethics, not only to equip managers but also to train a new cadre of aspiring AI ethicists". In the context of the IEEE Code of Ethics, where do the guidelines for ethics revolving around the usage of AI and big data fall? They could be implemented in the IEEE Code of Ethics as a separate line, however, it can be argued that ethics already are in place that applies perfectly towards new tools such as AI and big data. At the end of the day, according to the IEEE Code of Ethics in Dr. Strangas's presentation, engineers must "make engineering decisions consistent with the safety, health, and welfare of the public". It is simple to overlook the word "welfare", however, it is just as important. There are other statements in the code that can be applied as well, such as the idea of transparency, with "to disclose [real or perceived conflicts of interest] to affected parties" and "to be honest and realistic in stating claims or estimates based on available data". Additionally, according to an article by John Markoff, Carnegie Mellon University plans to announce on Wednesday that it will create a research center that focuses on the ethics of artificial intelligence". It is clear that this is an issue that people are beginning to tackle. As new technologies arise in the future, ethics will have to be balanced in order to ensure the welfare of the public.

AI and big data are two topics that can be looked at separately and together, as AI can evolve from the data it collects, as a self-learning machine. As engineers, it is important to realize that these tools cannot be used as a replacement for humans, as human beings possess common sense and the ability to reason, which machines do not. In conclusion, manipulative technologies can restrict the freedom whether we are aware of it or not, however, if used correctly, it can be a great asset to society and improve quality of life.

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