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Philosophy of Technology

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Governing Advancement and Interaction with Technology

Preface

There exists now a technological world which is advancing faster than can be governed. This is clear in cases of intellectual property laws as they apply to software and the strong debate around what should be mandated. As the world begins to move faster, it is harder to understand all its advancements and protect those who may be vulnerable to their negative effects. Therefore, it is essential to understand and properly regulate advancements in every industry and govern their advancement in a fair, but appropriate manner to protect from the very real negative effects. Modern medicine must withgo many trials and audits before it can be administered to the customer which has created a safer, stronger medical industry. While technology may be seen under a very different light than drugs, new technologies are showing possibly stronger effects on the mind than any medicine could ever. Should technology then be regulated to the same standards as medicine, what would that look like, and would that be beneficial.

A Brief History of Technology

To understand how technology advances, it is important to understand its history and how quickly it has advanced. The leaps that technology has made in the past have shown themselves

to be repetitive time and time again and will likely lay out the way Technology continues to advance in the future.

Much of the first technology created was for the use of telling time. Sun dials were used in very ancient civilizations to depict shadows in the direction of a number to accurately measure the time. The first leap in technology was the use of analog machinery. Fitted gears and complex systems were created as far back as the second century to complete small, important tasks. Until recently, analog clocks remained the primary way of telling time for the entire world. These ran on a simple set of gears to accurately measure time from a mechanical value. When the use of electricity began to take over the world, analog machinery began to fall off. Now, data could be stored and saved in electric capacitors rather than a finite state machine. This meant that systems could be designed to handle a multitude of tasks rather than just one. Soon, computers became part of every company's workflow and allowed for huge leaps in innovation, as well as revolutionizing the financial system of the United States. By today, it is safe to assume there is at least one computer in every household, be it a mobile device or a personal computer (PC). It has become part of every car, every house, and every life. Interactions with computers have changed too, where they were once seen as business machines, can now be used for personal pleasure, such electronic games.

Technology and Artificial Intelligence (AI)

The idea of creating an intelligence comparable to our own began with electronic games. The checkers problem, by Arthur Samuel, was introduced in 1949 and wished to create a program to beat a human in a game of checkers. Arthur Samuels checkers program required the space of an entire room and required being hand-fed data regarding the status of a checkers

board. It took minutes to process moves and was only moderately successful. This however opened door for many similar concepts, such as the chess problem. It was clear immediately that it would be soon possible to create a program to 'out-wit' any human in a certain, distinct field. Today, many games include their own AI to give players a PVP (Player-Versus-Player) experience without the requirement of another human. These AI are good, if not great, at performing one specific task but often require human intervention and can't easily be modified to work in any other areas. Very similarly to the use of analog machinery of the past. Companies began to see the possible benefits of this technology and invested heavily in them to improve their workflows and possibly replace the busy work of employees. Because AI is capable of handling more information, and faster than any human, it is great for dealing with big data. This can be applied to marketing, financials, business operations, or any other data heavy environment. So, for many years, companies have used it to assist in the automation and consumption of their data.

The Bigger Picture

2017 saw a huge boom in AI and machine learning that allowed AI to handle much more than simple data tasks. Google, one of the companies most dedicated to the research and development of AI began to release algorithms that would allow AI to make interpretations similar to those of the human brain. Being publicly accessible for testing and research, more great minds began to work and share their ideas in the AI field. Since this boom, more, and more industries have begun to be affected by this technology. Today, AI has integrated with nearly every technology, business application, and life. Search engines, such as Google Search, use AI and machine learning to create better, more personalized results that will give you what you're

searching for even if you don't know exactly what it is that you're searching for. Google's YouTube service uses this to give more personalized recommendations for videos. Car manufacturers are beginning to create autonomous driving capabilities for their cars. AI has been able to outperform human intellect in nearly every field.

In cases of human interaction with technology, many find themselves scared when they see personalized ads that know what they want before even they may know it. After having a conversation about a topic, you may begin to see relevant information appear all over. This is by no accident. Machine learning models (algorithms which teach AI) can often predict what your next move will be, similar to a game of chess, and provide you with information that you didn't even know you wanted. These models are beginning to know our next move, and how to best counter it.

Regulating the Next Generation

It is clear AI has been able to outperform humans from manufacturing to marketing and has greatly improved the way we interact with technology. While AI is still only in its infancy, it is curious what may become of it in the near future. If AI follows a path similar to that of other great technological advancements, it becomes clear that it may soon take over the way we interact with technology.

AI has begun to replace workers in many industries, such as cashiers at the grocery store being replaced with self-checkout. Soon, all cars may be able to drive themselves, removing the need for taxi-drivers. Maybe even removing the need to own a car. AI may be able to better manage a company than any person, or even team of management. It may be able to govern countries better than us.

The idea of a machine running our world may drive fear into the minds of many. As it likely should. Or a machine replacing everyone's job and there would be no work left for humans. All of these are common arguments against the progress of AI. But had the arguments against computers been used as advice, we may be living in a far different world today. The reason our world has not yet become that of a science fiction horror novel is because of important regulation in the uses and succession of technology.

First, to alleviate worry regarding jobs: AI will not be replacing you or taking your job from you (most likely). The role of AI in the workforce should be seen as a way to benefit the next generation of workers. Empowering them to become more successful, highly skilled, and giving them the economic benefits that may come with an automated economy. What if a taxi driver could own a car that would drive for them and provide them passive income? It would free their time and allow them to pursue other interests without a reliance on many unexpected circumstances. Autonomous brokers would allow you to invest at a higher, calculated interest without worry of it making decisions simply for its own profit. This would unlock new potentials for many of those who work simply for the necessity of an income or to put a meal before themselves to reach new potentials and explore new interests. Education can become more personalized and tailored towards the individual learner, at the same time making it more affordable and accessible. The combination of benefits would unlock new potentials for all and begin to eliminate educational and economic barriers.

What happens to those actively working in manufacturing when their jobs are automated and replaced by AI? In the last point, the argument was made that it will be beneficial to all when basic jobs are replaced by automated work. But for someone who has been working in a specific industry like parts manufacturing for their entire career, the threat is real. The transition

is luckily slow, but as more companies adopt automated technologies, more of these employees are finding themselves without work. Luckily, unless you are just getting into this industry, most companies will provide great benefits for those laid off to these technologies especially from the amount they will be saving not having to pay their salaries. The only way to prepare and prevent this from happening to yourself is to find a niche, or a service you can provide that will be better than anything a robot can do. There will always be important work for people who can outperform a robot.

As AI advances further and becomes a greater part of our lives and economy, we must think about how much more we wish to give it the power to control. While its first 'wave' will be only to automate work environments and dangerous tasks, soon it may become powerful enough to self-regulate, self-improve, and nearly sentient. As our technology grows out of our capabilities of understanding and when we can no longer compete with it in any industry, there will be discussion of a symbiotic relationship. One which allows us to better control, understand, and interact with AI.

Many companies are working on technologies which have the ability to connect our brains to a computer. Imagine greater memory, brain-connected internet, telepathic communication. The limits seem nearly endless. But again, this drives the question of where do we regulate? Is it safe to allow such a tightly bound connection between man and machine? The answer to all questions is opaque. Because we can't yet picture what a society will look like with these technologies and such a strong impact of AI on our world, it's tough to decide where the regulation must begin.

With new biological technologies such as CRISPR CAS9, we have the ability to genetically modify humans born or unborn. This may unleash a new wave of so-called "designer

babies" which are genetically superior to existing humans with less chance of disease. This can be argued to create an unfair advantage to those who either could not afford to genetically modify their child or choose not to for any reason. If the global IQ were to jump a mere 20 points, then 80% of the world's population would fall below what is considered adequately fit to benefit society. The same approach is seen to be near with technologic advancements such as a symbiosis. Having the ability to extend your memory, your thought time, improving communication would all reap such extreme benefits to those affected while greatly impacting the lives of those unaffected.

In an article published by the Brookings Institute in 2020, they discuss how regulation must be proactive. Protecting our privacy and human rights as well as promoting technological innovation. It is important that we create regulation now around the advancement and "take-over" of AI before it gets out of reach. The same should be done for all biological advancements and be considered of the same caliber. Making technology accessible and understandable for all is only the first step in a regulation process. Creating law and administration around such technologies is important because it will make such technology more accessible and understandable so no company or exclusive population can fully control it.

What does such regulation look like? As with medicine, researching and understanding impact, both positive and negative before its first use is a step. Granting no exclusive rights for greater than some period, such as IP, can prevent the technology from being used to target only a specific population. Knowing intended purpose as well as effective purpose can bring technologies into the spotlight to be thoroughly dissected for harmful effects. Limiting such the extent which these technologies can benefit any individual without benefitting all is the single most important factor in regulation. If we could cure all disease for one person, we must be able

to make that same cure accessible for all. If one person can symbiotically control their technology, it must also be accessible for all. Limit the technology, and power will disadvantageously control life. Limit the power, improve the technology, and every life will benefit.

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