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Is Automation Good?

As argued in *Humans Need Not Apply* and *The Rise of the Machines – Why Automation is Different this Time*, emerging technologies like machines and artificial intelligence (AI) can increasingly perform more of the jobs traditionally done by humans. A study in 2013 found that almost half of the jobs in the United States could "potentially be automated in the next two decades" (Kurzgesagt – In a Nutshell). If that statistic is not frightening enough, the highest rate of unemployment in United States history was only 24.9% during the Great Depression (Amadeo). Automation technology promises significant advancements in our productivity, so we invest heavily in developing them. In this paper, I will argue that automation is good for humanity because, when owned by the people, these technologies will free humans from labor and could be the gateway for a future of abundance and leisure for all.

Humans have sought automation technologies since the dawn of time. With every innovation, we can accomplish more with fewer time and resources — enabling us to innovate faster. Modern automation began in the industrial revolution, where machines were used to automate human labor. Machines are so capable because they can be programmed to complete simple tasks repeatedly and without error. Further, they do not tire, grow hungry, require healthcare, or support families — productivity with "no strings attached" made machines highly desirable for manufacturing plants and other companies.

Humans were not too upset by these machines taking their jobs because manual labor is tiring and can be degrading, especially if workers are trapped on a factory floor completing the same mundane task all day every day. Since we tend to view our highly sophisticated brains as what makes us so unique compared to fellow animals in the Animal Kingdom, freedom from manual labor was exciting. It enabled the world to specialize, and new creative professions emerged.

What has changed that has people fearing the loss of their jobs to automated processes? We live in a time where automated technologies have evolved from streamlining physical labor to mastering creative thought. Algorithms used in machine learning (ML), AI, and neural networks learn how to accomplish virtually any task by building off its successes and limiting its failures — much like how neural connections evolve in human brains. At first, it is laughable how bad these algorithms are at completing their tasks. Yet, they quickly learn to compete with humans and, not long after, can far-supersede human cognitive abilities. When more and more cognitive labor is automated, what jobs will be left for humans?

It is helpful to unpack how our current economic system works to answer that question. Karl Marx, a German philosopher, economist, historian, sociologist, political theorist, and journalist, describes a class disparity between the proletariat (laborers) and bourgeoisie (capitalists who own the means of production) (Marx and Engels). Marx notes that if you are not a wealthy capitalist who can sell goods and services for profit, then you are a laborer who can only sell your time to the capitalists by working jobs (Marx and Engels). The laborers get paid for the work they do, and they use that money to support themselves like buying shelter, sustenance, and other material possessions. The capitalists, meanwhile, are happy to pay their laborers wages because the work the laborers produce is worth more. Capitalists profit from the laborers' work by selling goods and services for more money than they spent producing them.

Since the best good for the lowest price wins business under capitalism, intense competition to produce the best and most affordable product using the least amount of resources fuels innovation. Automation is the most effective way to eliminate costs for capitalists, given that the cost of human labor can be as much as 70% of total business expenses (Paycor, Inc). Capitalism tremendously incentives the development and use of these technologies.

As we automate more labor by machines and algorithms, there are fewer jobs available for the greater population who are not capitalists and must trade their labor for money to survive. Inevitably, fewer jobs lead to higher unemployment, which causes economic recessions. For a system that relies on the work from laborers, why is there no incentive to stop automation? We arrive at the limits of capitalism: the system only works when a society's minority of capitalists can employ the society's majority of laborers to work jobs. Without jobs to work, people cannot earn money, spend that money, and perpetuate the economic system. Capitalism rewards automation, automation leads to fewer jobs, and fewer jobs undermine capitalism.

We could try banning or regulating these technologies to help keep capitalism healthy. However, I do not believe it is possible to slow the development of ML, AI, and other automated algorithms. The incentive structure for developing new, profitable technology is too intense for any government regulation to slow or stop its development. Even if one government in one country can successfully manage to regulate or ban certain kinds of algorithms, the modern world is too globalized for that to matter. All it will take is for one person, team, or organization in one place of our planet to continue developing these algorithms for it to threaten the rest of the world's economies. Imagine America decides to limit the output of goods from automation. If a country like China continues to push automation full-force, it will soon surpass the U.S. economy, putting the whole country at risk for falling behind in our globally-competitive world.

Moreover, since algorithms are digital, information will still flow freely across physical borders, no matter how many regulations and restrictions we create. Given that these algorithms are here to stay, we must think about what to do when large sections of the population are unemployable through no fault of their own and re-imagine our economy. Redefining the economy is daunting, but the feat has been done time and time again as new technologies spark an essential change in its underlying economic structure.

With the current system, the capitalists reap all the rewards from automation while the laborers are left more disadvantaged by the day. How might these emerging technologies bring prosperity for many rather than perpetuate inequality? This paradigm shift starts with changing who owns the means of production. If the capitalists continue to own the means of production (laborers, machines, and intellectual property), they see accelerated profits while the greater good suffers from unemployment. However, if the greater good owns the production means, society profits wholly. In this way, capitalists stand to lose the most while laborers — who make up the majority — will see a great benefit from automation.

Note that under this framework, intellectual property dissolves, too. Corporations currently invest billions of dollars into research and development to create new algorithms, test new drugs, and develop new microchips. Granting them private ownership of their intellectual discoveries rewards and incentivizes their investments. People and businesses file patents and, if granted, gain exclusive rights to use the technology for twenty years before the patent expires, and the information is released into the public domain. Until then, other people and firms must work out agreements with the patent owners if they wish to use the patent-protected technology. This framework leads to litigation and obtrudes innovation. By contrast, if the people own the means of production, the people also own the information. The need to privately hold patents is

removed, and information can flow freely — a recipe for rapid, unprecedented innovation. I believe we will be motivated by global competition to continue innovating even if intellectual property is no longer ownable.

Socializing machines, algorithms, and information shifts the way our society works. For example, if society wholly benefits from the labor of automation, technologies like Universal Basic Income (UBI) start to make sense. Andrew Yang, a 2020 democratic presidential candidate, includes a thorough analysis of UBI in his campaign. UBI is a "form of social security that guarantees a certain amount of money to every citizen within a given governed population, without having to pass a test or fulfill a work requirement" (Friends of Andrew Yang). Since automation generates goods without the expense of human labor, money generated from selling these goods can be shared by the people. The idea surprisingly works: since 1998, there have been over 400 research papers published showing that UBI is one of the most successful ways of reducing poverty and improving equity. Contrary to popular belief, people do not spend this free money on money sinks like drugs and alcohol. According to the data, people use these funds to help themselves out of substance abuse and live better lives (Friends of Andrew Yang).

When the production of goods is fully automated, we will no longer need to work long hours and will be free to pursue leisure activities. As Marx puts it, "[socialism] makes it possible for me to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticize after dinner, just as I have a mind, without ever becoming hunter, fisherman, herdsman or critic" (Marx and Engels). While we all live the lives we wish to have, machines and algorithms would be gathering resources, processing them into goods, and providing those goods to us, for free, since there are no human laborers to compensate for their

time. Money as we know it might change, as machines would eventually produce everything we need efficiently and for free. We could then enter a planned economy where society dictates where resources should go, how many goods to produce, and what our investments are. When everyone has access to goods and services that have been automatically provided by machines and algorithms, money will become less and less relevant until it eventually becomes obsolete or changes forms altogether.

Going from capitalism to socialism will prove difficult, as there will be many hurdles to overcome. I foresee a steady transition as technology continues to disrupt industries. The music industry is a perfect example of this concept. As soon as music became commercially available through mixtapes, vinyl, and CDs, it became commonplace to purchase music for leisure listening. People would own what they could afford, and they were limited to only playing those songs unless they bought more music. This idea is capitalistic and made sense for a long time. If you want music, you buy music. If you cannot afford music, you work and earn money from capitalists until you can afford it. However, services like Spotify, Soundcloud, and Apple Music are changing the game. Instead of paying for music on a per-song or per-album basis, people can now pay a (sometimes optional) monthly subscription and have unlimited access to every song in the libraries of these providers. People can now effectively "own" millions of songs because they can access any song on demand through a data connection.

I believe technology will continue disrupting industries in this way. Our capitalist mindsets will steadily shift toward socialism ideas, not because we have been indoctrinated into communism or want a revolution, but because it will "just make sense" given the technological innovations that follow from solving the inefficiencies of ownership in markets. This innovation will happen all over the world, and we will become more socialized as a species until we have

drifted far from traditional capitalism: merely because capitalism will cease to work given our new technological abilities.

The process of socialization I have proposed seems to be more beneficial to all rather than a different revolution fueled by significant swaths of the population being unemployable and desperate. A revolution of this kind would inevitably involve forcefully seizing the means of production from the companies and individuals that own them. This strategy would not be easy and would no-doubt result in bloodshed on a scale like never before. Furthermore, seizing production means for the people to own does not solve our problems. We would still need to operate and maintain these algorithms, so the revolution will eventually become a fight for control once more.

Perhaps it is possible to overcome the challenge automation poses to capitalism without going down the socialism avenue by trusting that capitalism will prevail? If automation takes jobs and people earn less, corporations could produce even cheaper goods so that the greater good can still afford them. After all, capitalism only works if there are buyers and sellers — without buyers, the sellers lose profits. It is feasible to imagine automation as the catalyst for exponentially cheaper goods. However, capitalism is still an inherently unsustainable system. The idea of a profit that is so ingrained in our society roughly translates to "overcharging, underpaying, and pocketing the difference." Money always flows into the hands of the rich while leaving the poor, poorer. According to Christopher Ingraham from the Washington Post, the wealthiest 400 Americans (the top 0.00025%) have tripled their wealth since the 1980s (Ingraham). Further, "the top 0.1% now [owns] more than the bottom 80%" (Ingraham). According to Marx, if you let capitalism run its course, eventually one person would own everything. This scenario would not likely happen because the poor majority would stage a revolution out of desperation before

then. The laborers would realize the odds are stacked against them and that the system is rigged to favor the wealthy few.

Given that automation undermines the very nature of capitalism, continuing to allow its development spells doom for our society. Since regulation is not possible under our globally competitive world and stopping automation makes no sense in capitalism, we must identify how to adapt our near-obsolete social structure. Capitalism is designed to be unstable, and automation hastens its inevitable collapse. Socialism shows great promise here, allowing the people to control the means of production and collectively reap the fruits of automated labor. Transferring the means of production from capitalists to the people is fairest to everybody and will be inevitable once machines and algorithms render humanity unemployable. All this is not to say that capitalism is ineffective — it is. It has enabled our world to innovate faster than it ever has before, lending itself to much better medicine, technology, and leisure for all.

Moving from capitalism to socialism is analogous to a multi-stage rocket leaving Earth. Each stage of the rocket has a specific purpose of fulfilling. When the rocket is first taking off, it needs a substantial amount of fuel coupled with powerful thrusters to escape Earth's gravity. The massive engines and empty fuel tank become detrimental weight once the rocket is out of Earth's gravitational pull, so they are released from the rest of the rocket to fall back to Earth's surface for collection and reuse. The next stage of the rocket takes over, accomplishing its hyper-specific job, et al. Capitalism was necessary to fuel growth and innovation but is becoming increasingly irrelevant as automation replaces labor. As a society, we need to think about how to transition into the next stage.

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