AI: Ethical Implications for the Employment Market

A discussion on threat and perspective

Abstract

In this paper, the focus will be on the thesis whether creatively working people get replaced first by the advent of artificial intelligence, or whether common workers will be in dire straits instead. Common workers are defined in this paper as people whose job has some physical aspects e.g., the typical blue-collar jobs. We cover the ethical implications upon the job markets and those partaking in it, caused by the evolution of artificial intelligence in various sectors throughout the position paper. First the argumentation focuses on the antithesis to the thesis. It discusses whether the common worker will be replaced by AI before creative jobs get affected, with at least three assertions for it and weakening factors against it, the reasons and difficulties involved, as well as several examples for each in which these reasons manifest themselves. We then meet an anchor and discuss the actual

thesis in the same manner of three assertion, reasons, and examples, weighted by relevance and supportive argumentation in ascending order, with the strongest assertion finishing last. The paper concludes that those working in creative jobs will be affected first and need to prepare themselves to avoid upheavals in the near future they are about to face.

Introduction

The recent emergences of new forms of Artificial Intelligences have warped the landscape and scope of what can possibly be achieved by digital machinery. Neural networks like DALL·E 2, Midjourney and Google's new Imagen AI create and design picturesque art at ever increasing detail and complexity, often unrecognizable from what a humane artist can produce. Other like PIFuHD or Disco Diffusion allow to turn flat images into three-dimensional renders, and yet other AIs again help compose and play classical music.

With such artificial creativity presenting itself and its rapid refinement and improvement on the near horizon, several implications arise that lead to worries and fear among humanity. Some questions on this are:

"Will the future be unfair, will my skills matter?"

"Will Artificial Intelligence replace my line of work - even me?"

"Who gets replaced first, the working man? Certainly not creative people!"

Getting replaced by breakthrough technologies has always led to rifts in societies, unrest, or legislative action, all in question of ethical relevance and ethical concerns. To discuss these questions and worries about ethical fairness in the future employment market we have dived deep into the matter to learn what is most likely to happen – or already has happened. We will argue that it is indeed the creative jobs in all forms of art stemming from the mind that will be under siege first. These can be classical artists like designers, painters, musicians, composers, but also design engineers and architects. Understanding the implications of AI development early gives the readers more time until the matter has crossed the doorstep. Time to prepare thought, skillset and ethical perceptions about the very near future, to avoid

rifts in societies and debate through heated claims of unfairness and reactive activism or reactive, populistic legislation.

Although we will get to why the assault on creative jobs will be the most likely scenario, first we must consider the arguments standing against our assertion.

Antithesis – Commoners besieged

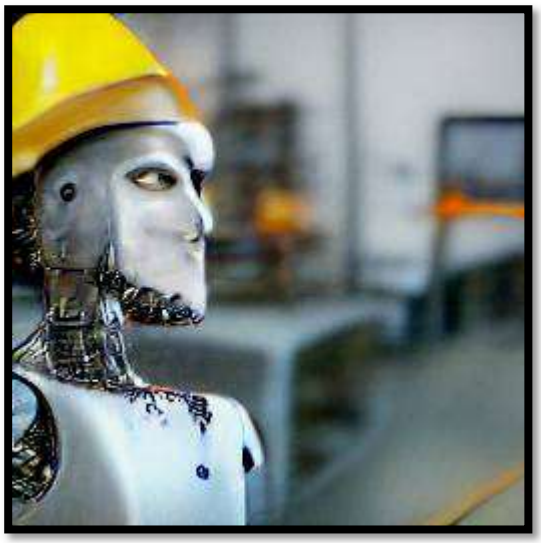
The emergence and evolution of artificial intelligence will not affect those who are working creatively and with their minds and intelligence, but instead replace the common worker first. As common worker we define any form of physical labor such as those working in production, construction site workers, nurses in hospitals, or office workers at desk jobs with more mundane administrative tasks.

AT1 - Personnel and Investments

There is a lot to be gained from automatizing production processes and manual labor, so research and development of Artificial Intelligence will focus on this sector first. Companies will dedicate their resources to enable Artificial Intelligence to replace their common working force first. There are good reasons for this: Nowadays the cost of personnel is still as high as it has ever been and replacing workers through automation has been a constant and long-standing topic in countries with comparatively high wages such as ours. For example, since the millennium companies focused to automate their production processes. Machinery helped accelerate or take over tasks during production. The Internet of Things and Industry 4.0 are in focus of many companies which aim to employ AI to merge their sensory and control systems, aide production and predict maintenance to provide early warning systems and avoid failures.

However, many processes along production have already been automatized. The formerly common assembly-line worker job market has already been decimated in numbers since the late 1980s, and AI won't harm them much anymore. The Internet of Things and Industry 4.0 are mostly aimed at connecting various devices in production to optimize the entire supply chain, uptime of machinery and passthrough and do not focus primarily on replacing remaining workers. The common classical workers have already been rationed to the maximum. Those workers remaining in modern factories are often either supervising engineers or jobs that could not be automized yet. Companies still focus research and development mainly on optimizing their already existing production, as that is something they can attest a direct return of investment to. It also allows them to be more competitive at selling their product. Hence Artificial Intelligence will not threaten the common factory worker, who is already difficult to find along modern assembly lines.

AT2 - Machinery and Reality



There are physical tasks done by the professional working class which are a bit more complex in nature than someone at the assembly line in the factory. These are tasks that do not require much thinking, but more often following a pre-defined list of actions to complete. Construction site workers such as bricklayers, construction machine operators, and carpenters are some examples of jobs threatened by the advent of Artificial Intelligence. This is because the machinery they use gets automated steadily across all disciplines in all fields of modern engineered tools, which means a site may only need one bricklayer instead of three. For example, bricklayers' work may get reduced by them being supported by this intelligent machinery, or even replaced by pre-assembled construction parts whose material-design was devised by or with the help of Artificial Intelligences, similar to the design of modern aircraft parts. Construction machine operators may be removed from the site by the machines controlling themselves and carpenters replace each other because their workload gets optimized heavily, also reducing total needed numbers. Through image recognition and orientation, the machinery may help flexibly on a construction site, optimize workload and thus replace workers.

However, there are several aspects implying that this may not be the whole picture. First, increases in efficiency and productivity are always good for any market. Workers servicing this market won't get optimized away from the market itself, instead they'll be able to service more people at the same time. Historically, demand for professional workers is at an all-time high and not covered by supply. AI supported smart machinery may be easier to use within any given toolset and thus boost worker efficiency instead. It is also much harder and complex to marry entire flexible physically free moving machinery to AI and train motion within ever changing environments than it would be to only focus on the software side of things.

AT3 – Philanthropy and Consideration

Another argument supporting that the common worker would get replaced first is that AI would benefit everyone in the workforce and the implications following this. AI research focus would trend towards decreasing the workload of the common workers, because it would free up working forces that could then be reallocated to new, healthier, less physically demanding jobs instead of their current ones. For example, the affected could use the free time to learn new skillsets and upgrade their line of work to something more proficient. This would also serve to improve public health and reduce overall costs of societies for health care, with less work induced disease and sickness such as less disc prolapses, tendinitis and less breakdowns within the workforce. It could also lead to a reduction in work hours while being able to maintain the same absolute weekly productivity. As a result of that, helping common workers would remain a focus of AI research and would also witness the bigger impact by AI evolution.

However, this argument could also meet several obstacles refuting it. It assumes several premises, such as that AI research would focus on helping the common worker out from some inert goodness of the researchers and developers and those financing them. If there is no direct return on investment, it is hard to expect for most companies to pour money into projects that do not benefit them sufficiently. Another premise here would be that someone from the work line of manual labor can easily upgrade his skillset to something more abstract and cognitively complex. It assumes that everyone has the same capacity of growth, the same enabling environment, and the same thirst to learn new skills. But usually, humans have different strengths and weaknesses, talents, different mindsets, and different ideas what to do with more free time. If they migrate into white collar jobs, western societies may lose even more specialists and professionals in trades which are so dearly needed these days. It could even cost societies at large, as there are enough people not living a growth mindset, so they may linger after they have

been laid off from work, requiring subsistence and social securities provided by the state.

After thoroughly looking at the arguments, reasons, and examples that common workers are disproportionately stronger affected by the evolution and spread of AI, this assertion is difficult to uphold. Each argument presented could be weakened or properly refuted. But what is the truth of the matter here, who will be affected most, if not the common, manual laborer?

Thesis – Creativity under siege

We postulate that the emergence and evolution of artificial intelligence across all sectors will affect those who are working creatively and in highly complex jobs with their heads disproportionally more than the common worker. There are several arguments to support this, so we will venture into some of them and see how robust they are.

T1 – Time and Space

Artificial intelligence working in digital space has the highest potential to save time and thus costs, hence the focus of research rests upon it first. Its time from order to product can be much shorter, and virtually feel instant. The reason for this is that an AI specialist comes pretrained and walks through various stages of development, design, prototyping alternatives and variations in rapid succession. For example, it can serve multiple customers in parallel. It can also respond to requests virtually immediately and start working independently of time and day. In contrast to a human artist, AI may produce results in matters of minutes instead of days or weeks. As a result, it can scale operation unconstrained by such factors. Even computational prowess does not need to limit it, as scaling operations

in dynamic cloud services have become abundantly available and easy to master.

With less white-collar working hours considered, a lot of a customer's costs can be avoided which means the return-on-investment ramps up quickly. And as the return of investment often dictates strategies in those companies not being able to afford a vision, research and development will first focus on the least risky strategies, aiming at jobs not connected to the development or deployment hardware such as robotics with expensive sensory equipment.

T2 – Physicality and Warmth

Blue collar jobs such as construction site workers, electricians, and physically intensive jobs such as those of nurses won't be replaced anytime soon.

One of the major reasons for why the physically connected labor market will not be first in line is how software and hardware interact with one another and the complexity of such multi-layered systems. It is much harder to create artificial intelligence that intends to navigate in the physical realm of hardware than one in solely at home in the digital software layer. A robotic worker controlled by AI must navigate through reality which has been adapted to humans. It must recognize boundaries, physical objects, their shape, surface, texture, but also frictional resistance, gravity, inertia, and marry all that with its own movements as well as an action plan to predict what it wants and where it goes. All of this while the training can hardly be virtualized, which means it depends on actual repetitions and thus time. In contrast, AI feeding itself from text, images, compositions, and sentiments connected to such sources can learn rapidly and unbound by time. Artificial intelligences working in creative, digital jobs will be able to access ludicrous amounts of data. Given access to roam the internet, just processing power will be their limit.

Further proof to that is found in the difficulties faced by advancing robotics. Compared to the human body, independent robotics save various bottlenecks, beginning from expensive and long-lasting design search and prototyping and ending with scarcity of required silicone and the difficulties of mass production. Even when that is cast aside and we just look at machinery such as an autonomous car, the lack of supply of properly parallel-processing chipsets and other materials will mean that the number of such machinery will remain low and only grow slowly over time. The markets are not saturated with these, excess demand is not met. As such, AI technologies entertaining physical space will remain used mostly by those who can pay up and afford them for a comparatively longer time than those AI technologies entertaining digital space only.

Regarding nurses, there is one more factor. Human interaction in dire situations can't be replaced. Nurses are not just pushing juice carts, but also provide care, attention, and social interaction to those feeling alone, broken and defeated in hospital rooms. A robot cannot and will replace that humane element in a long while.

T3 – Artists, Composers and Musicians

Artists, music composers and musicians will be the first victims and displaced in their fields of work. Neural networks in these fields are either being developed as prototypes or in late stages awaiting release or utilization. The reason for this claim is that we have witnessed more and more AIs creating art in the current year. For example, there is Google's new Imagen AI or OpenAI's DALL·E 2 allowing unskilled users – none-artists – to create incredible picturesque art pieces from mere textual descriptions of scenes. Deep Fakes alternate video scenes reliably. Provided the unskilled user has been granted access and enough computational resources running these neural networks, he will be able to

compete with artists who have worked in this field for years, matching their talent and abilities by using the AI.

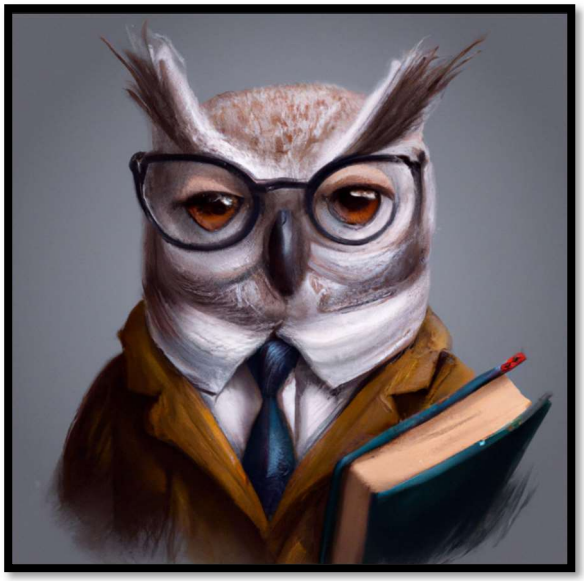
The same rings true for composers and musicians which will be dearly affected. The reason is that AI services like Amper Music, AIVA or Ecrett Music are already competing against each other, offering to compose music for artists in various styles – be it emotional, chillout, or even classic music. For example, a customer could buy a subscription plan at such services and provide the AI with an environment to predict music for – be it through keywords, already existing music to build alternative versions from, video or sound environment. The AIs will compose fitting tracks within minutes, sometimes live, and if it does not suffice, another track can follow in rapid succession. Due to this, the room in the market for creatives like artists, composers and musicians gets smaller in the sense of both quantitative and qualitative availability, enabling affordable art in masse for everyone.

One might ask, does the quality of AI generated art match human art? Average art pieces certainly, but what about the masters. The beforementioned AIs have been and are potentially being trained on the entirety of human art production, with every art style, every scene, and all

method humans have employed during art history. But even then, matching the masters from the get-go does not need to be a goal. Covering and replacing the broad services of the broad mass of artists across the globe is the destructive force upon the employment market that AI can generate. It won't beat a Picasso or a Hans Zimmer, but it does not have to – these are part the absolute fringe group, ten to the power of minus six.

Another question often seen: Does AI just copy examples and mashes them together? In reality and the human sphere of art students, art imitates art, emulates scenes and settings, and through stronger or softer variation in style, method and interpretation created something new, new art is created by students and masters – which the AIs can do as well. It alternates parameters steadily, creating various alternatives constantly, leading to new and exciting outputs.

Conclusion



We have seen that steered investments to lower personnel costs on premise take focus, that building machinery occupying physical space and navigating through it, as well as the hope for philanthropy and consideration refute the worry of common workers that they may get replaced anytime soon. We have also witnessed how scaling up operations in a purely non-physical environment such as art, music and composition becomes easy and offers a lot of return on investments. Furthermore, it was discussed how jobs requiring a certain base of physical flexibility as well as warmth and compassion support our thesis that the blue-collar worker is not as threatened as he may think he is. Ultimately the fate of artists, composers and musicians already being under siege has convinced us that creative jobs detached from physical reality are those that must start looking into accepting new realities in order to diversify their skillsets.

Feeding AI becomes the new go-to job for artists, at least as an option. The datasets and resources such creative AIs are trained on become true real estate influencing the quality of the outcome of the product. Which opens new questions like the following:

Can Data Scientists gain proficiency in handling, nurturing, and feeding AIs to the point that the Data Scientist can become – in a sense – the new artist?

In closing words

we would like to thank DALL·E for the pictures!

Deus Ex Machina

Jannik Paul, 2022