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Is AI the Modern Frankenstein's Monster?

The Unique Technological Disruption of Layoffs

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If technology brings revolution, it also rings disruption. History is evident to the fact that certain jobs have been affected by each technological advancement. In the present era of the fourth industrial revolution, artificial intelligence (AI) is set to revolutionize everything from enterprises to education, security to services, healthcare to entertainment. In this backdrop, I present an insight into the trend of layoffs, or firing of employees, occurring globally in the technological sector. The study is based on secondary data pertaining to employee layoffs and technological developments within the IT industry. The findings indicate a peculiar coincidence between the occurrence of layoffs and development of revolutionary AI technologies such as ChatGPT, Gemini, and Copilot. A total of 2,64,220 personnel have been laid off by 1,193 organizations during the year 2023 while as this year has already witnessed 1,00,696 employees being terminated upto the quarter ending June, 2024. Thus, I assert that the evolution of AI within organizations is fast replacing professionals, and, identify the layoff trend as a unique technological disruption. Humorously, I name this disruption as Frankenstein's disruption that resembles with the famous science fiction "Frankenstein's Monster" in which the scientist Frankenstein, in the process of creating life, gives rise to a monster who eventually kills him.

Keywords: Artificial intelligence, Layoffs, Disruption, IT sector, Frankenstein's Monster.

1. Introduction

IT organizations worldwide began terminating their employees around the end of the year 2022 [1]. Going a little back in time, the Covid pandemic had forced businesses to resort to the online mode resulting in momentary increase in hiring in the IT sector. However, as the world was gradually returning to normal, this practice started to reverse [2]. All of a sudden, organizations- both big and small, announced employee layoffs in huge numbers. Within no time, job cuts reached an all-time high and were hitting the headlines. Interestingly, the occurrence of layoffs coincided with the unveiling of revolutionary AI tools such as Gemini, Copilot, etc. A close examination of the aforementioned developments forms the crux of this study.

The current study assumes significant importance and can be said to be the first of-its-kind. The area of technological disruption has always been of great social, economic and political concern [3]. With increasing proliferation of AI in the industry, the influence of this technology on jobs is being debated seriously [4]. One of the sustainable development goals (SDGs) listed by the United Nations (UN) addresses the issue of full and productive employment and decent work for all [5]. At the 2024 World Economic Forum (WEF) annual meet in Switzerland, it was observed that the AI technology was lowering morale of as many as 60% of workers who feared that AI would make their jobs redundant [6].

2. Methodology

This study is based on secondary data obtained from a variety of sources including layoffs.fyi, a US based website that tracks layoffs. The data was plotted using Matplotlib which is a visualization library of Python programming language. The plot was analyzed to look for patterns across data and identify specific trends.

2.1 Related Work

Disruptive innovation has been abundantly addressed in the literature. [7] discusses potential job loss due to AI in workplace and warns that man and machine are in a race, which machines will eventually win, leading to mass unemployment. [8] talks about job threats resulting from AI. [9] informs that 82% of job roles in the industry have already changed because of leveraging of AI. However, [10] suggests that it is unclear whether complete replacement of jobs due to AI is politically, socially and economically possible. A variety of trust issues of workers in response to the impact of technology have been identified in [11]. [12] acknowledges that AI poses a threat to jobs and recommends the concept of work integrated learning (WIL) to secure the future of workers. [13] believes that the replacement of labour by AI technology will commence with low-end, simple repetitive tasks and gradually extend to high-end, complex, non-repetitive tasks.

[14] stresses that organizations are duty bound to protect their workers' interests in the era of changing AI scenario. [15] has carried out a detailed study regarding vulnerability of certain job roles, discovering four displaceable skill sets– repeated physical motion and performance,

information process and analysis, repeated physical control of equipment, and individual affective performance. The importance of trust of workforce on technology has been addressed in [16] where various dimensions relating to cognitive and emotional trust are identified. The concept of worker-AI coexistence has been presented in [17]. The paper opines that AI must be leveraged in such a way that it augments from human workers' expertise and experience rather than replacing them.

3. Results and Discussion

3.1. Development of Breakthrough AI Tools and Eruption of Layoffs

ChatGPT took the world by a storm towards the end of the year 2022. It was soon followed by Google unveiling its Bard- now called Gemini, an evolution of its voice assistant (interestingly

voice assistant is one of the areas where Google cut down its employee count). Almost simultaneously, Microsoft came up with Co-pilot. The table below highlights the time of launch of AI tools by various organizations.

Table 1. Time of Launch of AI Tools

Organization	AI tool	Time of launch
OpenAI	ChatGPT	Nov, 2022
Microsoft	Co-pilot	Feb, 2023
Google	Gemini	March, 2023

Soon organizations worldwide started to lay-off their employees in large numbers. Within no time layoffs reached alarming levels. It seemed as if a competition of terminating employees was going on among organizations. A total of 2,64,220 personnel were laid off by 1,193 organizations during the year 2023. To cite a few, Google fired 12,000 of its employees (amounting to 6% of its total global workforce), Microsoft laid off 10, 000 workers (5% of its workforce), Facebook terminated 10,000 employees, Amazon showed the door to 27,000 of its workers, while Twitter fired 2,300 employees [18]. And it is still far from being over. This year has witnessed 1,00,696 layoffs upto the quarter ending June, 2024. Table 2 depicts the total number of layoffs occurring in the IT industry during the last three years [19]. The table also mentions the number of IT organizations that includes start-ups.

Table 2. Number of Layoffs for Last Three Years

Year	No. of IT organizations	No. of layoffs
2022	1064	165269
2023	1193	264220
2024 (up to June quarter)	351	100696

Even though organizations justified these unprecedented layoffs as steps towards restructuring, cost-cutting and over-hiring done in the past (ET 2024), the fact is that even the most experienced employees were not spared. For example, a senior software engineer at Google was terminated after nineteen years of service [20]. With AI solutions proving far efficient, organizations started to do away with their customary operations and divisions. Traditional job roles were dispensed with. For example, Microsoft reduced the employee count in its cloud (Azure) and gaming division. Google restructured its ad sales division by increasingly employing machine learning algorithms, thereby reducing the need for human resource. Companies like e-Bay, Swiggy and Paytm followed suit and started to leverage AI to automate various services.

3.2. A Unique Technological Disruption

The plot below shows the number of employee layoffs quarter wise beginning with the year 2020.

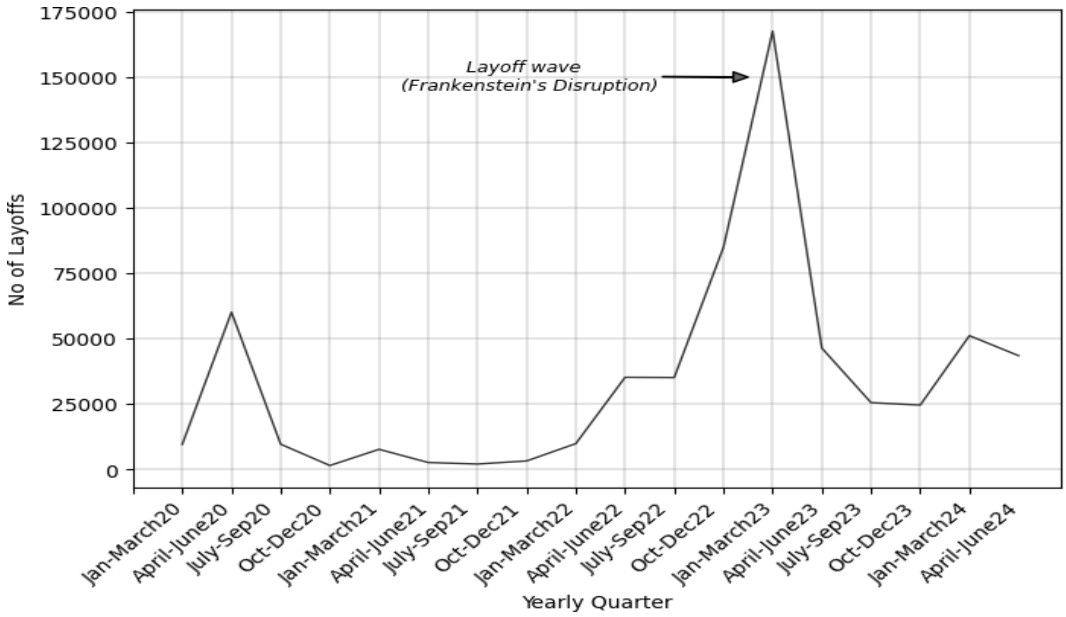

Figure 1. Plot showing Layoffs Quarter Wise from the Year 2020. The Highest Peak Represents Frankenstein's disruption

As can be seen, the initial spike, appearing in the first quarter of 2020, is attributed to abrupt job losses during the COVID pandemic. However, it is seen coming down swiftly. This decline corresponds to the momentary increase in hiring during the lockdown phase as a result of businesses relying on IT services to shift to the online mode. The huge spike, erupting in the last quarter of 2022 emphasizes the onset of layoffs. The spike is seen soaring especially for the first two quarters of 2023. When this plot is analyzed in the context of Table 1 that tracks development of AI tools by various organizations, it indeed points to a unique scenario. This adds a new dimension to technological disruption wherein AI is eliminating jobs in the IT industry. In other words, AI is taking a toll on its creator. The author calls it as Frankenstein's disruption, as depicted in the plot.

4. Conclusion

This article has presented an original perspective into a distinct technological disruption characterized by massive job cuts in the global IT sector. It argues that the trend of such large-scale employee layoffs is due to the proliferation of AI within organizations. AI is increasingly substituting customary jobs and the people affected are likely those who built it. It is yet to be seen whether this trend is just a passing phase or the tip of the iceberg. At the same time, layoffs show little signs of slowing down. With AI technology improving fast viz. generative AI, the world may well see tremendous disruption not only in jobs of a repetitive nature, but in creative jobs too.

The main limitation of the current study is that it is based on secondary data. This work can be further improved by examining the nature of job roles that have been terminated. This will give a clearer idea about the exact cause of layoffs. Primary data regarding automation of work

previously performed by laid off workers can be sought from organizations. This will yield much needed insight into the levels of upskilling and reskilling of professionals demanded in the AI era.

Conflict of interest

None

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