

2020 to 2024 Layoff Data Visualization

Xinyang Lyu



Figure 1

Figure One illustrates the top 10 companies with the highest layoff counts, as visualized in a word cloud. The size of each company name correlates with its layoff numbers—the larger the font, the higher the number of layoffs. For instance, a larger "Amazon" indicates a greater number of layoffs compared to smaller company names.

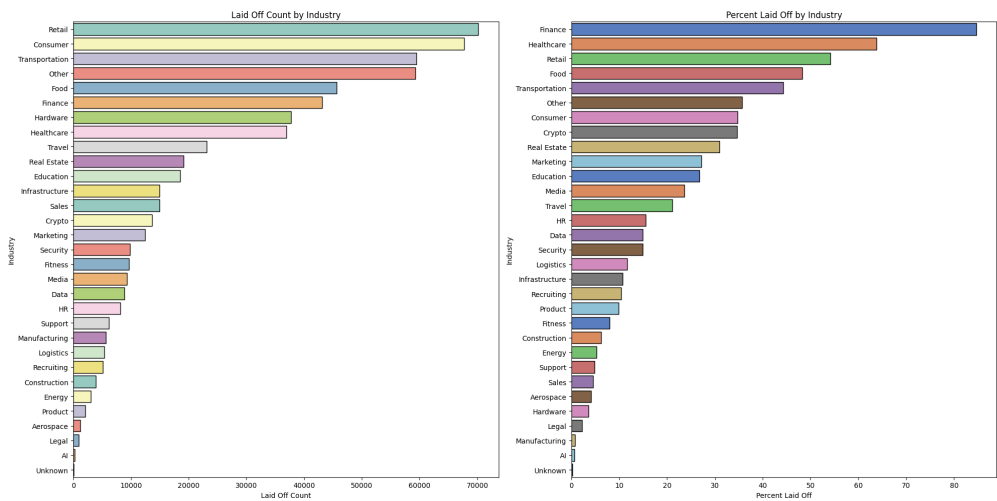
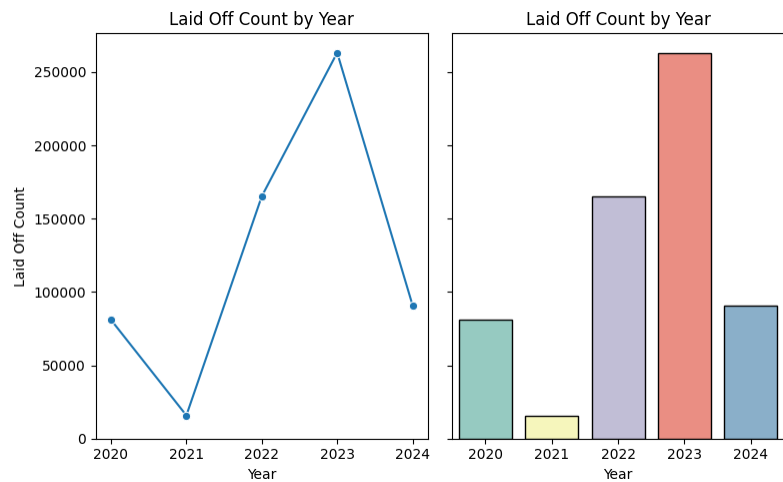


Figure 2

Figure Two presents a comparative analysis of layoffs across different industries. The left bar chart details the total number of layoffs per industry, highlighting sectors with the highest absolute numbers of job losses. The right bar chart illustrates the percentage of layoffs relative to the total workforce in each industry, providing insight into which sectors experienced the most significant workforce reductions proportionally.



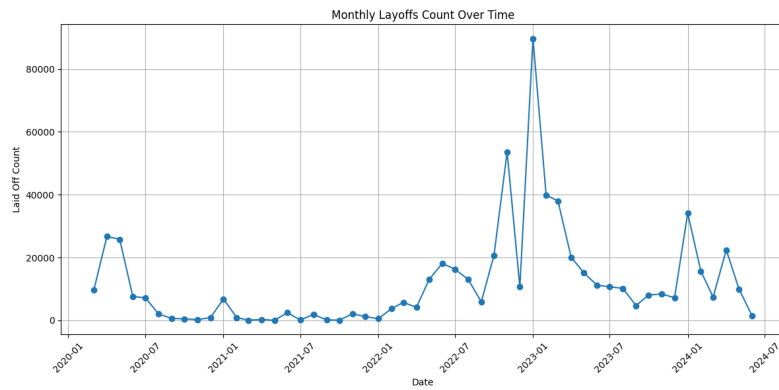


Figure 3 and 4

Figure Three presents the annual layoffs count through both a line plot and a bar chart, offering a clear comparison of layoff trends over the years. The left plot demonstrates the total layoffs per year, while the right plot reinforces these findings with a visual emphasis on yearly changes. Figure Four illustrates the monthly layoffs count over time using a line plot. This visualization highlights the fluctuations in layoffs from month to month, identifying significant peaks which may correspond to seasonal or economic factors. These combined visualizations provide a comprehensive view of layoffs over the specified period. As we can see, these two figures clearly show a significant spike in layoffs in 2023, and figure four highlights the peak layoffs in January.

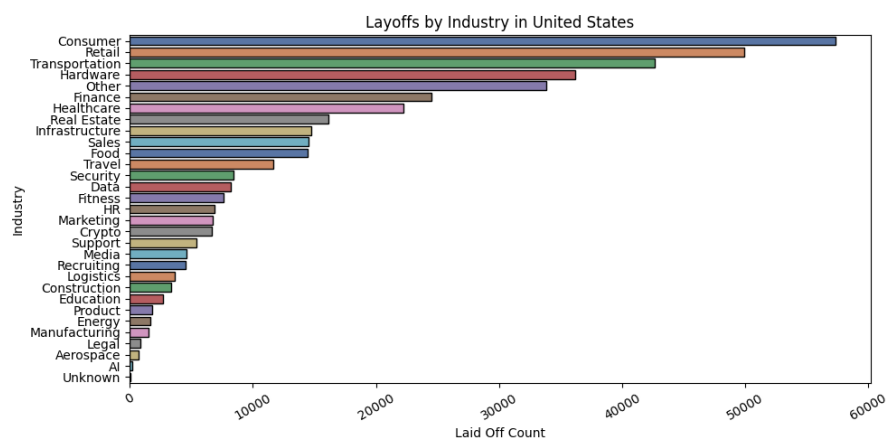
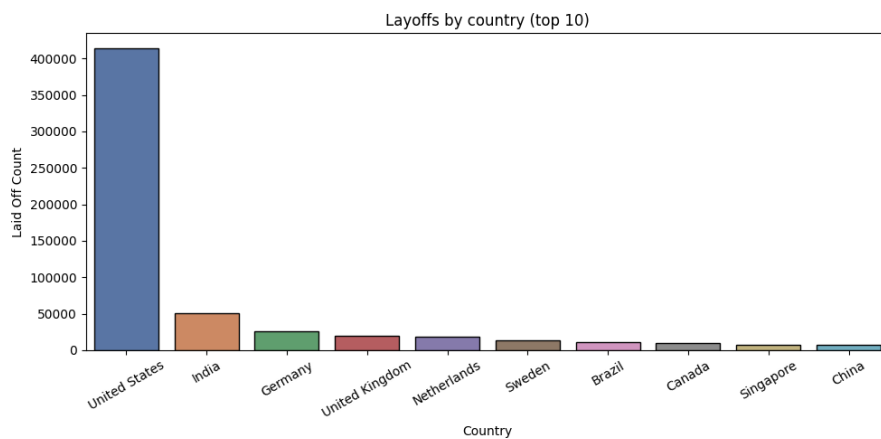


Figure 5 and 6

Figure Five presents a global perspective on layoffs, highlighting the top 10 countries with the highest number of layoffs. The bar chart details the total layoffs per country, emphasizing which countries experienced the most significant job losses. Figure Six focuses on the United States, providing a deeper dive into the layoffs by industry. The bar chart shows the total number of layoffs per industry within the United States, identifying the sectors most impacted by job cuts.

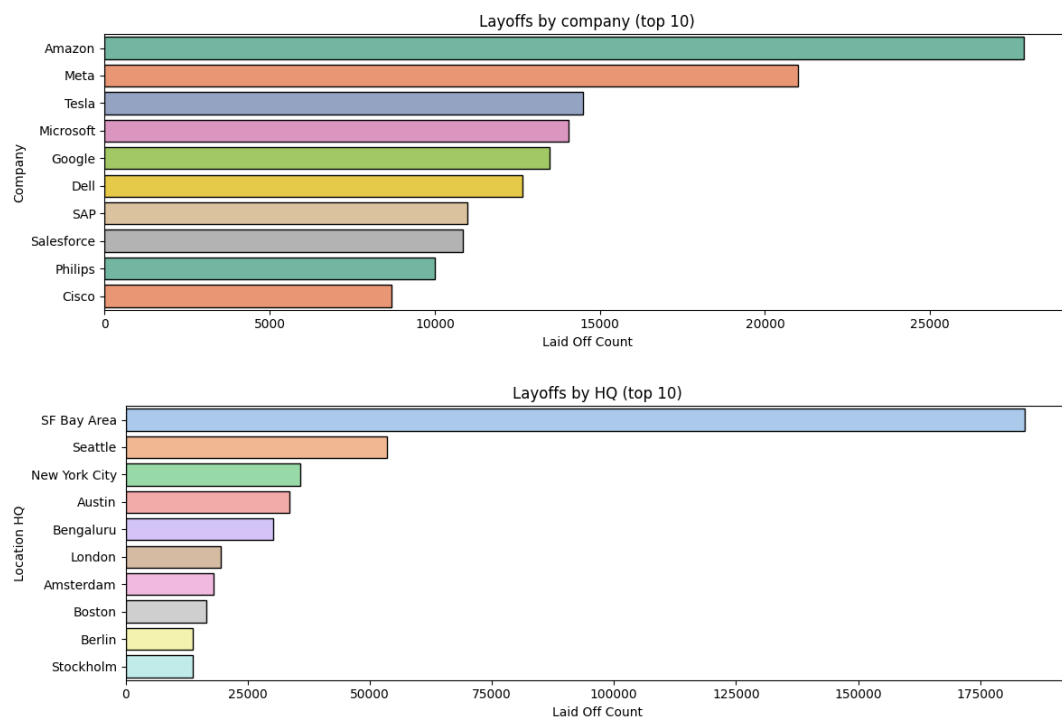


Figure 7 and 8

Figure Seven illustrates the top 10 companies with the highest number of layoffs. The bar chart provides a clear view of which companies have been most impacted by layoffs, with the total number of layoffs displayed for each company. This visualization highlights the companies that have experienced significant workforce reductions. Figure Eight presents the top 10 headquarters locations with the highest number of layoffs. The bar chart details the total layoffs for each HQ location, emphasizing the regions most affected by job cuts.

Importance: I have selected eight figures from my analysis to present, covering various aspects of layoffs. These figures include the top companies with the highest layoffs, layoffs across different industries, monthly and yearly layoffs trends, top countries with the highest layoffs, and the most impacted industries within those countries. Additionally, figures also highlight the specific companies and geographical distribution of layoffs. These visualizations provide a comprehensive view of the layoffs, showcasing both the overall trends and specific details. While some figures were not included, such as quarterly layoffs, monthly layoffs in 2023, and the impact of funding on layoffs, the selected figures offer a holistic understanding of the data. Additionally, I explored the potential impact of company funding on layoffs. Different visual formats—like bar charts, line plots, word clouds, and tree maps, these all helps in interpreting the data from multiple perspectives, ensuring that the information conveyed is consistent and comprehensive.

Data and Method: The data used in this analysis comes from Kaggle, an open-source layoff dataset detailing layoffs across various companies and industries from 2020 to 2024. This dataset includes information on the date, industry, company, company's location, and number of layoffs. It also contains details such as the source of information, funds raised by companies, their stage, and the percentage of layoffs. Data aggregation was performed using Pandas to group and summarize the data by different categories such as month, year, industry, and company. Visualizations were created using Seaborn, Matplotlib, and WordCloud, each chosen for their specific capability to highlight different aspects of the data. The Python code for generating these graphs and more detailed information on the packages used is available in my GitHub repository.

Github Link: [Shawn1yu/2020-2024-layoff data visualization](https://github.com/Shawn1yu/2020-2024-layoff-data-visualization)

Google Collab Link: <https://colab.research.google.com/drive/10TbEx2FKxqcXVgnw0JX84Q4eVcaN-0a?usp=sharing>