Global_Layoff_Trends_SEN

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Are the massive layoffs in the fourth quarter of 2022 a trend or a market correction?

Is there a pattern to layoffs?

To better understand what was happening data was used data from the US WARN database and an international tech sector layoff external data available in Kaggle.

US Layoffs

2012-2023

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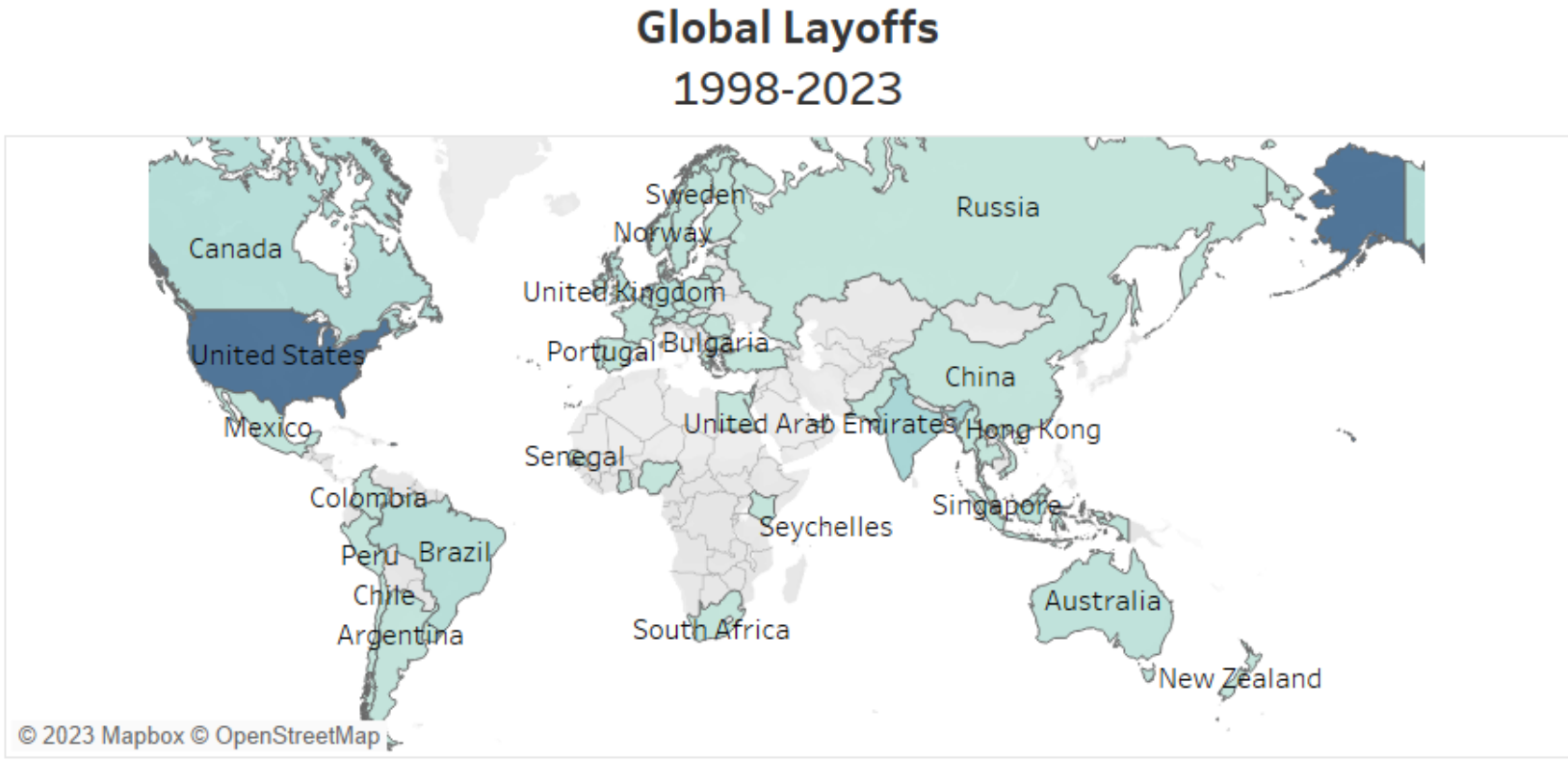
The Global Layoffs: Trend or Market Correction



Over the past 3-5 years the global job market has been robust, especially in the US tech sector. Over the past 3 months, there has been a steady succession of mass layoffs in the tech sectors from major companies such as Alphabet, Goldman Sachs, and Amazon.

When I looked at the heatmap there seems

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Hypothesis: The recent mass layoffs are a market correction in response to increasing inflation.

The numbers were overall low when compared to the population whether by country or city. The least affected are STEM roles. With the exception of Crypto and Finance, the number of layoffs was very small when looking at the past ten years. The data set went as far back as 1998 and the numbers hold true.

Some of the questions I had were:

* On average, how many companies lay off or go through mass employee separations each year?

* Which states have the most frequency separations?

* Which industry has the most layoffs?

* Has all the information in the data set been consented to by the employees affected?

* Who can access the data? Is it completely public or are there any restrictions on who can access the data?

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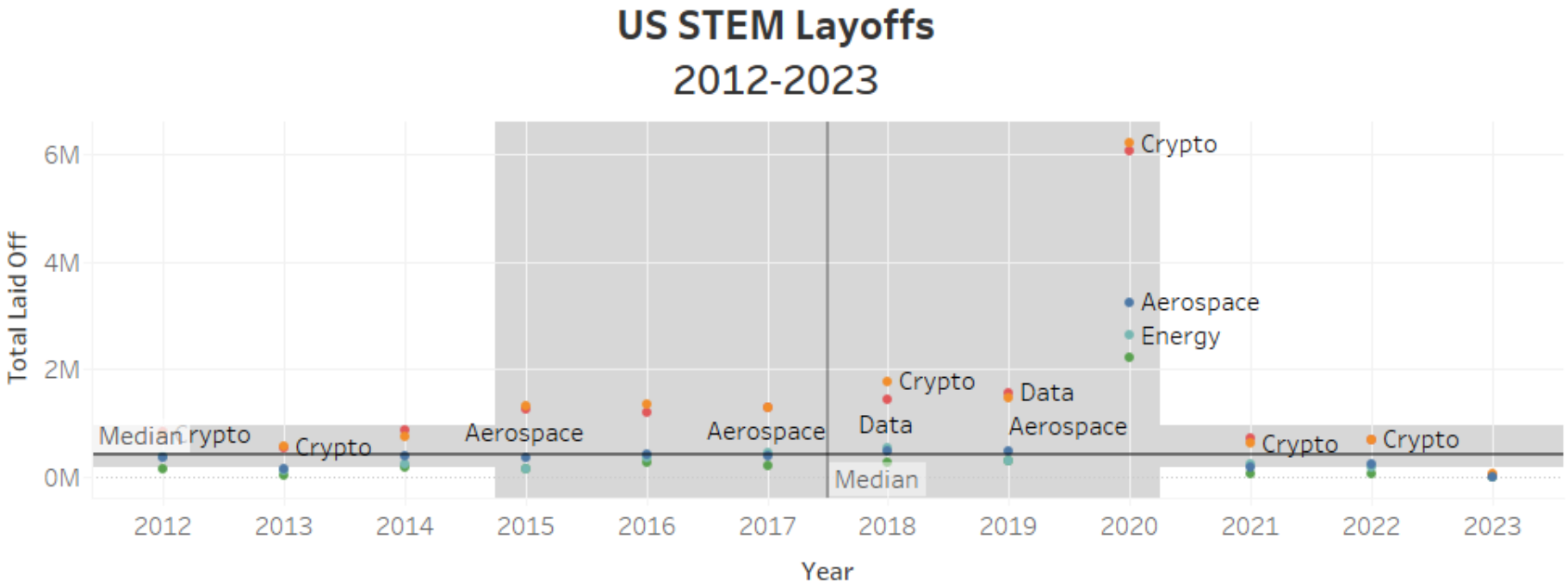
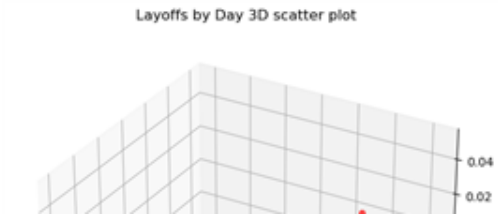
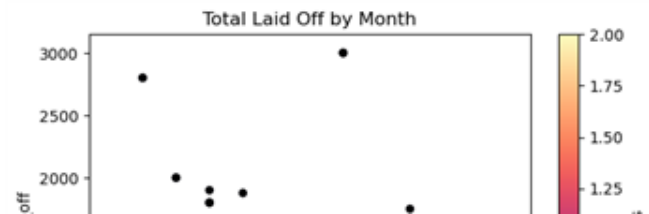
Clusters







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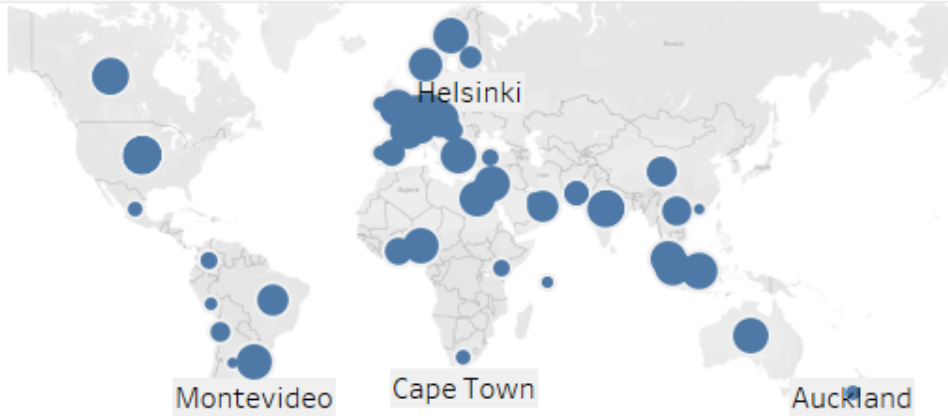
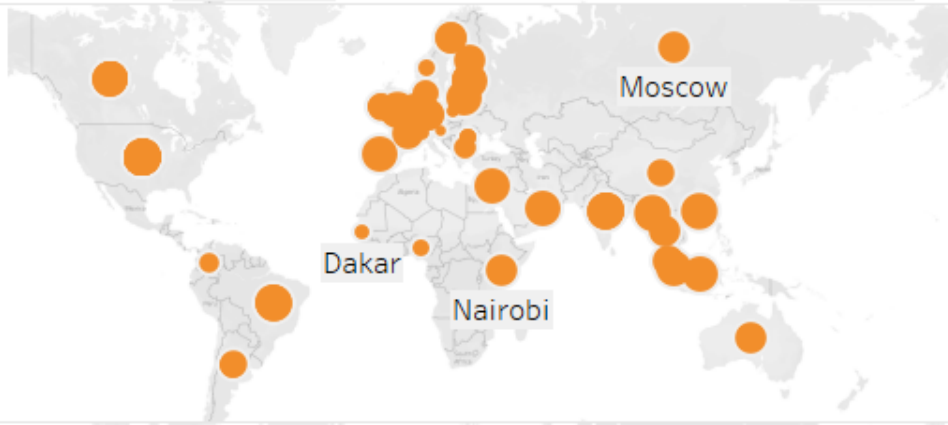
Global Layoffs by City, Clusters and Industry 2012-2023

Clusters ..

Cluster 1



Cluster 2



While the overall number remained small there were patterns around specific industries. For example, the food industry was hit hard during the pandemic and is still in recovery. But other sectors which are traditionally strong showed a larger than expected dodownturnuch as finance despite a robust stock market.

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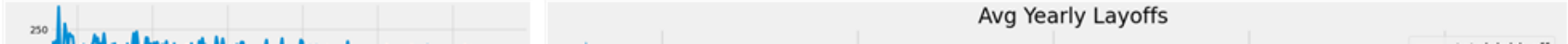
Layoff Forecasting by Industry



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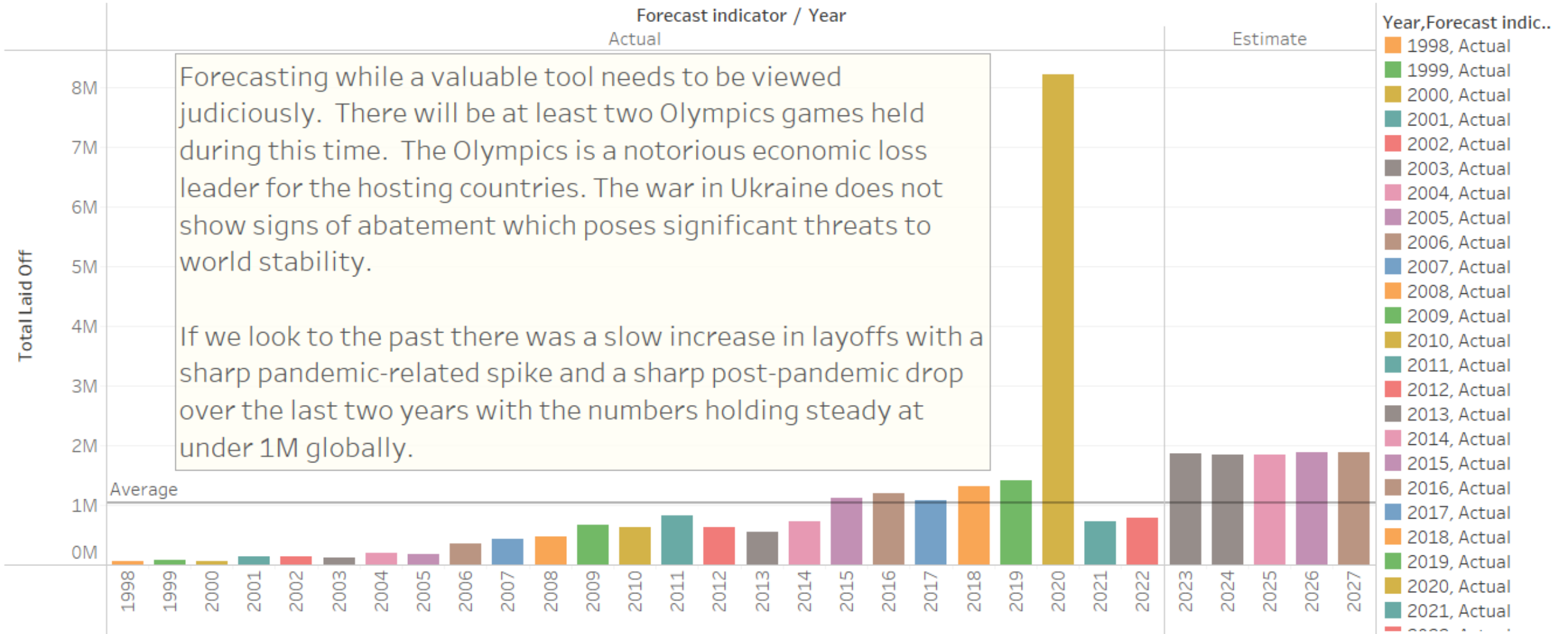

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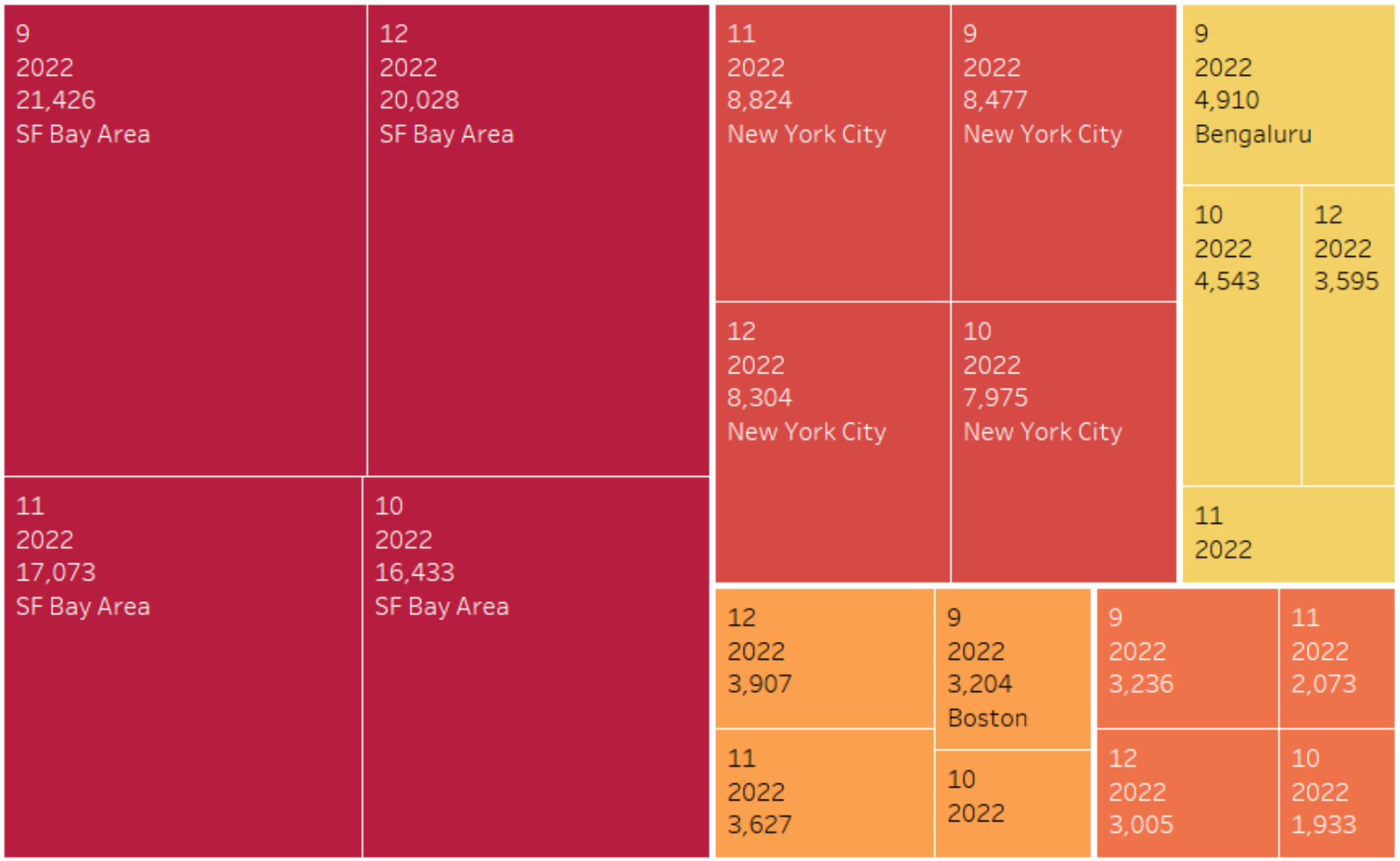

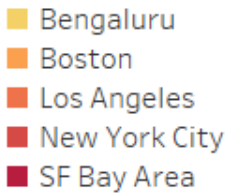

Observations
When I attempted to run a linear train of the dataset using supervised machine learning the results were not optimal. The resulting negative R2 while not a mathematical impossibility or the sign of a computer bug. It simply meant that the chosen model (with its constraints) fits the data really poorly.

Constraints
The datasets are limited by the fact that they are self-reported, which means mistakes could have been made or countries like Russia and China which both show low layoff numbers may be suspect. This does not mean that the data is not accurate but it is also not perfect.

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Hypothesis

Based on the numbers and market conditions the hypothesis is that the current layoff trend is more likely a market correction due to overhiring related to the pandemic. The overall job market remains very healthy.

Insight

What can be said with certainty is that there will be future spikes in layoffs due to all the usual factors such as recession fears, shareholders' expectations, etc. Layoffs have long since been a go-to for companies looking to demonstrate their fiscal prudence to satisfy the demands of internal and external shareholders.

Further analysis is needed to better explore the undefined cluster two which commonality is that it has no real commonality. Moreover, a closer look at why the financial market dropped so heavily despite the soft landing with the recession. The final takeaway is that it remains as it has always been steady and layoffs are a part of the normal business cycle.