



Humananalytics

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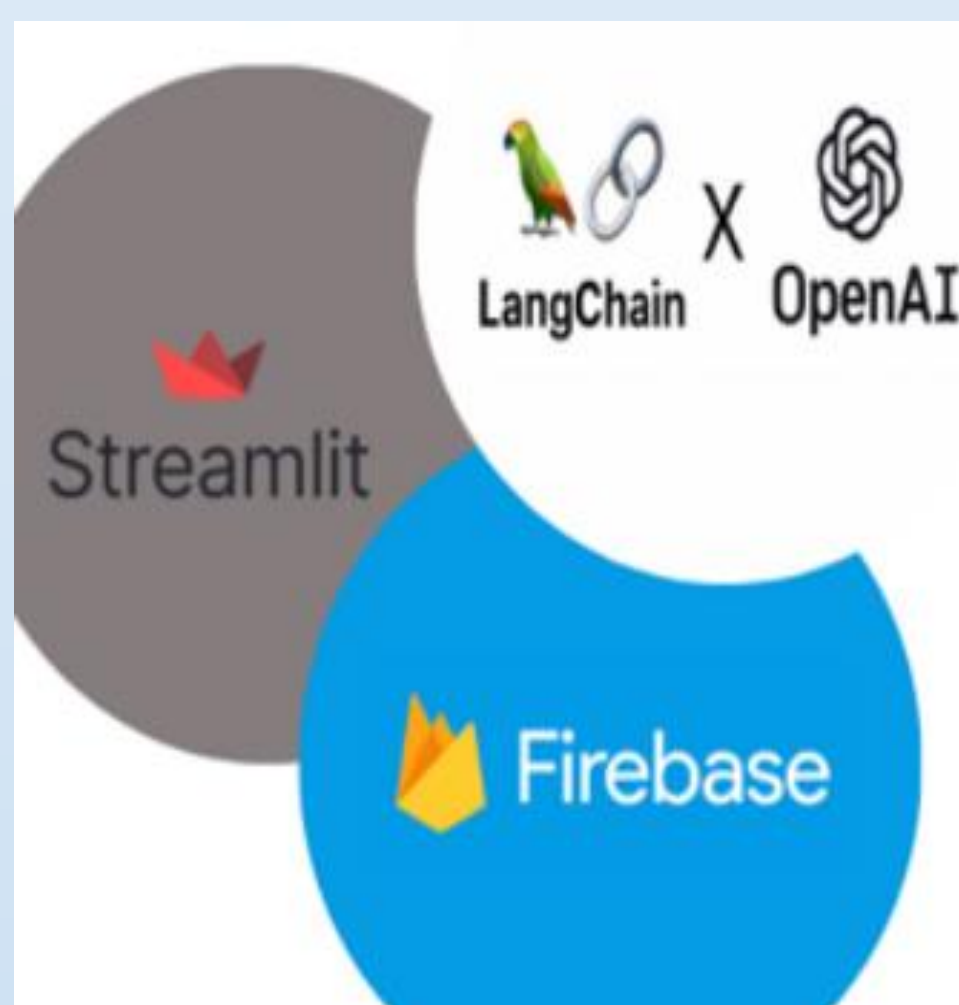
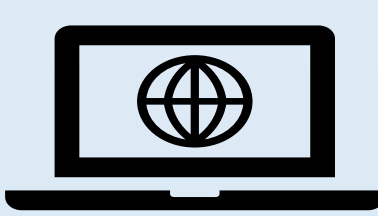
University of Missouri-Kansas City

Abstract

Integrating sentiment analysis into **HR dashboard** to understand employee reactions during **layoffs**. By analyzing feedback and social media posts, we gain insights into **emotional** impacts. This aligns with our goal of improving user experience, promoting mobility, and ensuring compliance. Our AI-driven analytics provide actionable insights for proactive decision-making.

Introduction

- **Humanalytics** addresses sentiment surrounding layoffs in organizational restructuring.
- **Utilizes datasets** containing employee feedback to delve into emotional impact.
- **Implements** advanced AI techniques like the Large Language Model (LLM).
- **Analyzes** textual data to extract sentiments and understand emotional responses.
- **Aims** to gain insights into morale implications of layoffs within the organization



Target Audience: Audience is mid-level company HR departments. Using sentiment analysis, they can understand layoff impacts and adjust policies for better management.

Empowering HR Departments: Empowers HR by providing insights to navigate layoffs sensitively. Data-driven approaches address concerns, fostering empathy and support.

Comparative Analysis for Affected Employees: Laid-off employees receive comparative analyses, aiding their transition.

Dataset

Raw Data of Layoffs It contains essential information regarding employee layoffs, including details such as employee names, departments affected, dates of layoffs, and reasons for termination.

Raw Data from Employee Tweets

The raw data collected from employee tweets constitutes another crucial dataset for our HR Dashboard project. This unstructured dataset captures textual nuances related to HR activities, including employee feedback, sentiments, and perceptions.

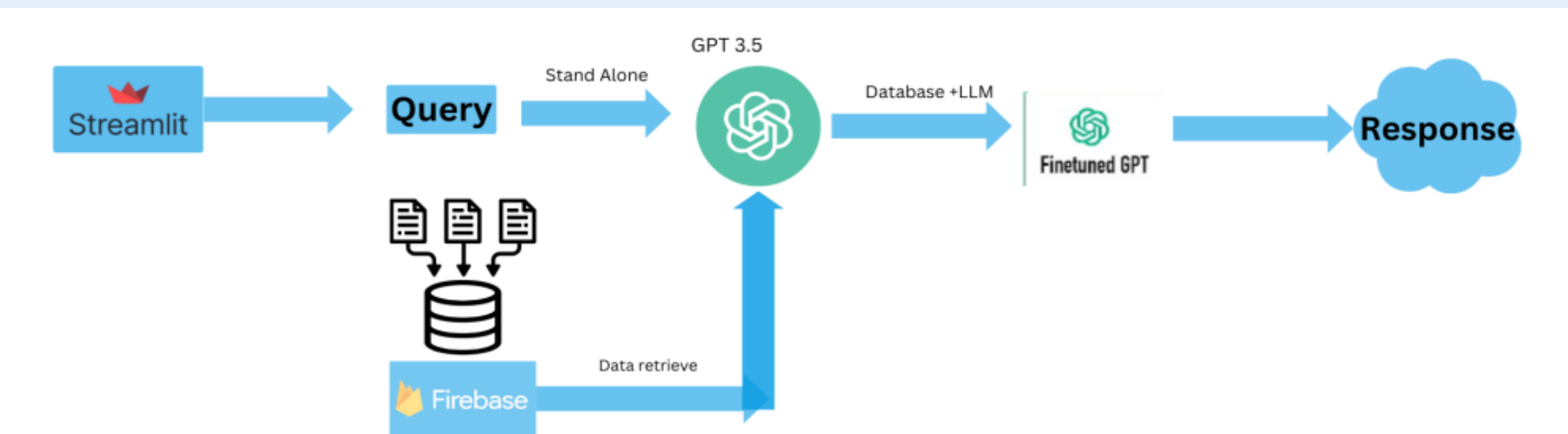
Dataset. A

- Code
- App.py
- Sentimental analysis.py
- Data
- Processed
- Raw
- Results/
- Figure.1
- Figure.2
- Models
- readme.txt

Employee	Department	Reason	Date	Location	Age	Gender	Years	Salary
John Doe	Marketing	Redundancy	2023-01-15	New York	35	Male	10	\$75,000
Jane Smith	Engineering	Department Closure	2023-02-01	California	28	Female	5	\$90,000
Mike Johnson	Sales	Performance	2023-03-10	Texas	42	Male	15	\$60,000
Sarah Lee	HR	Voluntary	2023-04-05	Florida	30	Female	8	\$55,000
David Kim	Finance	Restructuring	2023-05-20	Illinois	45	Male	12	\$85,000
Emily White	Operations	Redundancy	2023-06-12	Washington	38	Female	7	\$70,000
Chris Brown	Product	Department Closure	2023-07-01	Arizona	32	Male	6	\$80,000
Alice Green	Marketing	Performance	2023-08-15	Colorado	25	Female	4	\$65,000
Bob Black	Engineering	Redundancy	2023-09-01	Georgia	40	Male	11	\$95,000
Charlie Blue	Sales	Voluntary	2023-10-10	Ohio	33	Male	9	\$72,000
Diana Red	HR	Restructuring	2023-11-05	Michigan	29	Female	6	\$58,000
Ethan Yellow	Finance	Department Closure	2023-12-20	North Carolina	48	Male	14	\$88,000
Fiona Purple	Operations	Performance	2024-01-10	South Carolina	36	Female	8	\$78,000
George Grey	Product	Redundancy	2024-02-01	Virginia	31	Male	7	\$82,000
Helen Silver	Marketing	Voluntary	2024-03-15	West Virginia	27	Female	5	\$68,000
Ivan Bronze	Engineering	Department Closure	2024-04-01	Massachusetts	41	Male	10	\$92,000
Judy Gold	Sales	Performance	2024-05-10	Minnesota	34	Female	7	\$74,000
Kyle Platinum	HR	Restructuring	2024-06-05	Wisconsin	26	Male	4	\$62,000
Laura Diamond	Finance	Department Closure	2024-07-20	Indiana	44	Female	11	\$86,000
Mark Ruby	Operations	Performance	2024-08-10	Illinois	37	Male	9	\$76,000
Nancy Sapphire	Product	Redundancy	2024-09-01	Ohio	32	Female	6	\$84,000
Oscar Emerald	Marketing	Voluntary	2024-10-15	Michigan	28	Male	5	\$66,000
Peter Jade	Engineering	Department Closure	2024-11-01	North Carolina	43	Male	12	\$94,000
Quinn Amethyst	Sales	Performance	2024-12-10	South Carolina	35	Female	8	\$79,000
Rachel Topaz	HR	Restructuring	2025-01-05	Virginia	29	Female	7	\$69,000
Sam Ruby	Finance	Department Closure	2025-02-20	West Virginia	46	Male	13	\$89,000
Tina Sapphire	Operations	Performance	2025-03-10	Massachusetts	39	Female	10	\$81,000
Umar Emerald	Product	Redundancy	2025-04-01	Minnesota	33	Male	7	\$83,000
Vanessa Jade	Marketing	Voluntary	2025-05-15	Wisconsin	27	Female	5	\$67,000
Walter Topaz	Engineering	Department Closure	2025-06-01	Indiana	42	Male	11	\$93,000
Xavier Amethyst	Sales	Performance	2025-07-10	Illinois	36	Male	9	\$77,000
Yara Ruby	HR	Restructuring	2025-08-05	Ohio	31	Female	6	\$85,000
Zoe Sapphire	Finance	Department Closure	2025-09-20	Michigan	47	Female	14	\$91,000

Methodologies

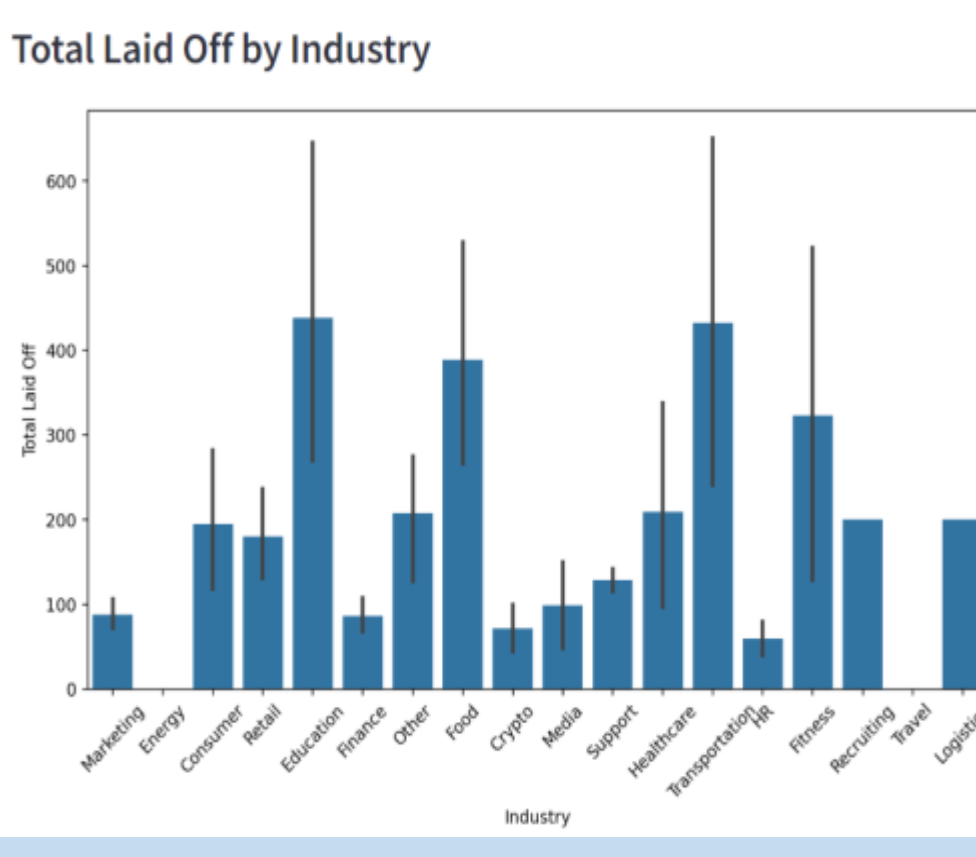
- **Frontend Development:** VS Code and Streamlit, enhancing accessibility and usability for HR professionals and recruiters.
- **Backend Infrastructure:** Powered by Python,
- **Database Solution:** Firebase serves as our chosen database solution, **AI. Model Integration:** GPT-3.5, Llm for intelligent data analysis and interpretation.



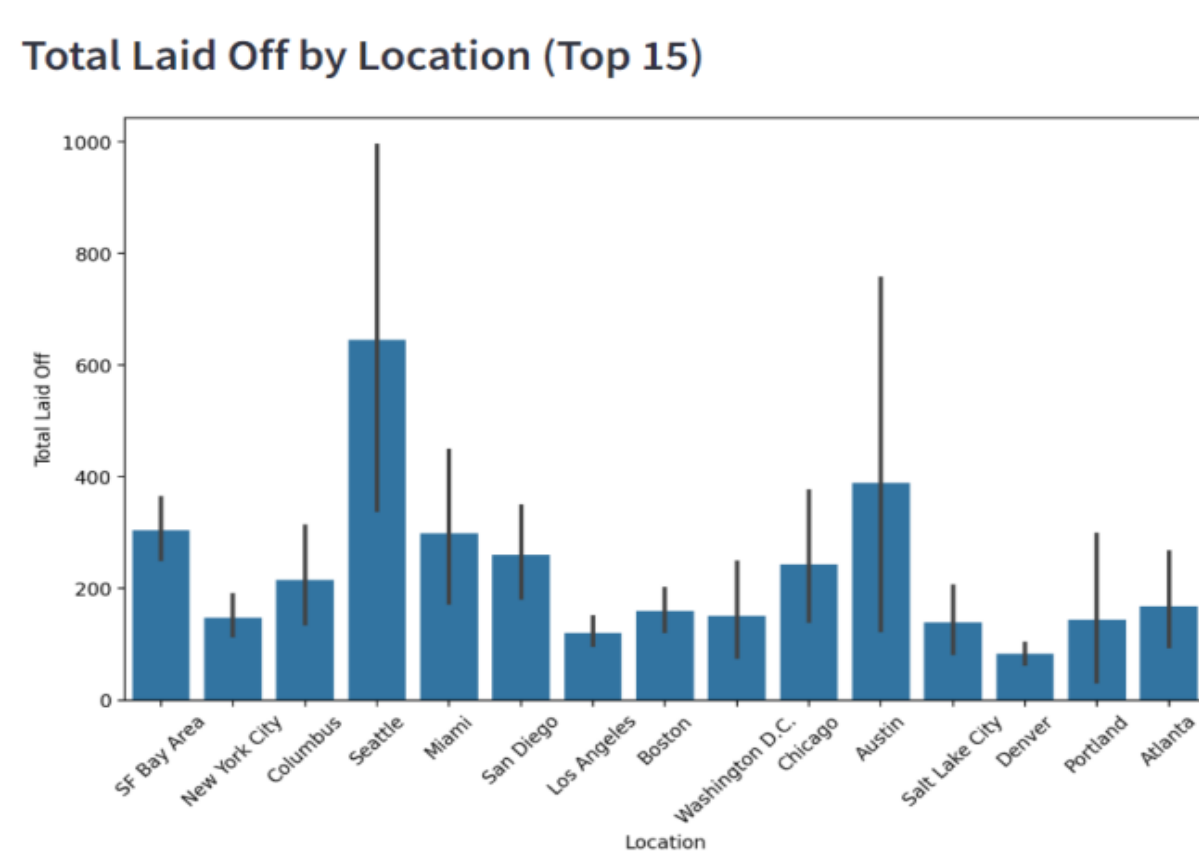
Results

- **Comprehensive** view of workforce dynamics Implemented two graphs in HR Dashboard for workforce analysis.
- First graph displays layoff percentage for departmental impact assessment.
- Second graph shows total layoff numbers for quantitative perspective.
- These graphs offer visual insights into workforce dynamics and organizational changes. Introduces innovative approach to HR practices with Recruitment Prediction Dashboard.

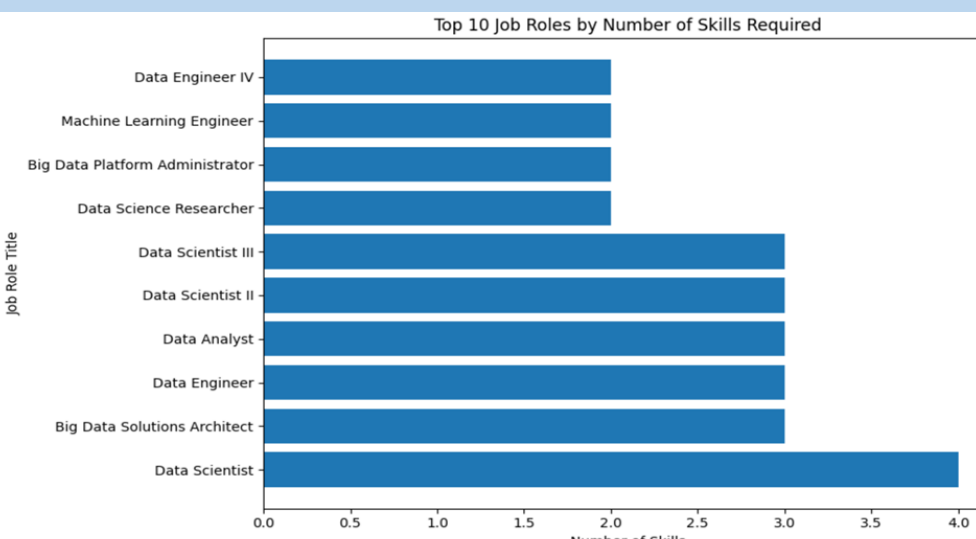
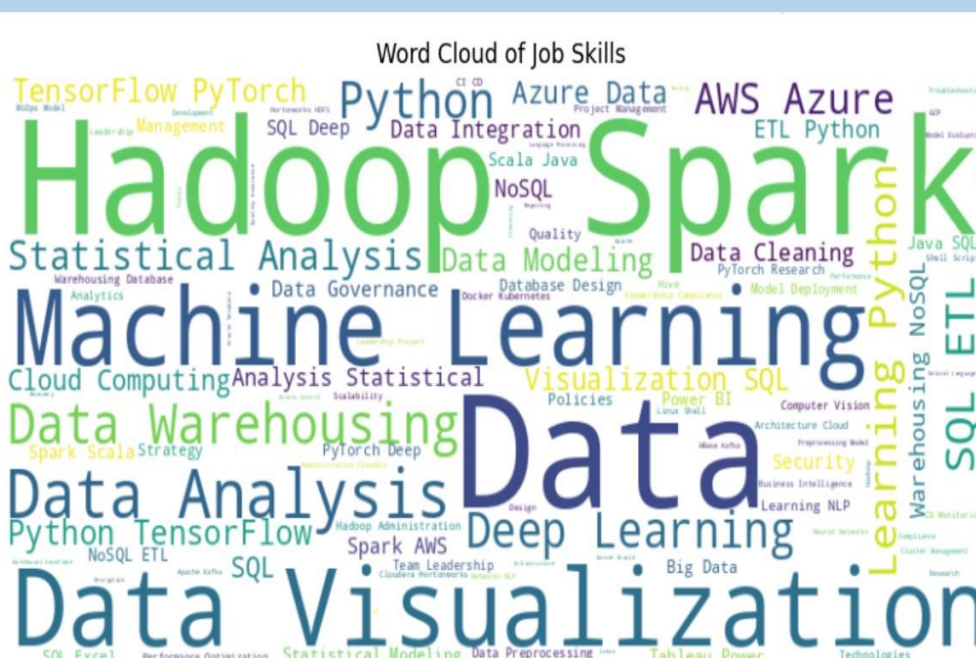
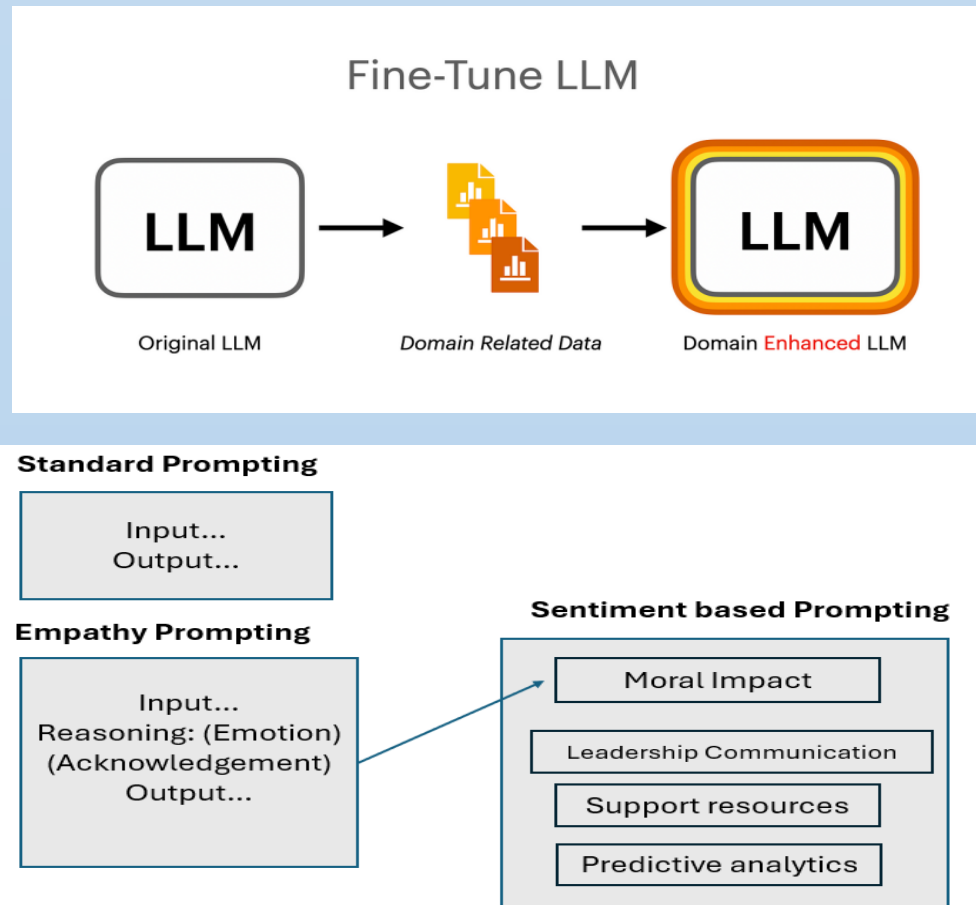
Interactive Analysis of Layoffs



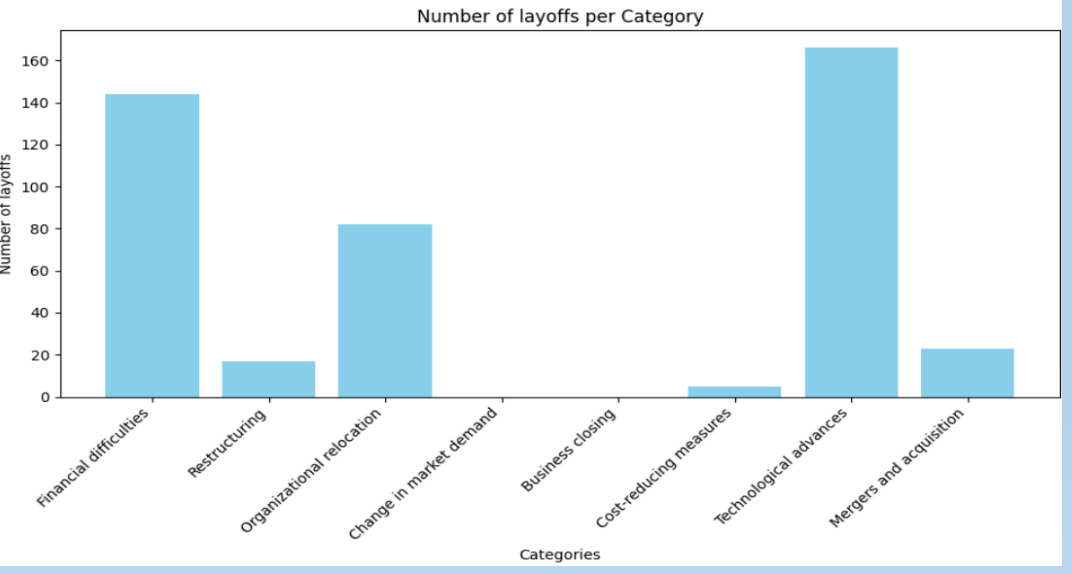
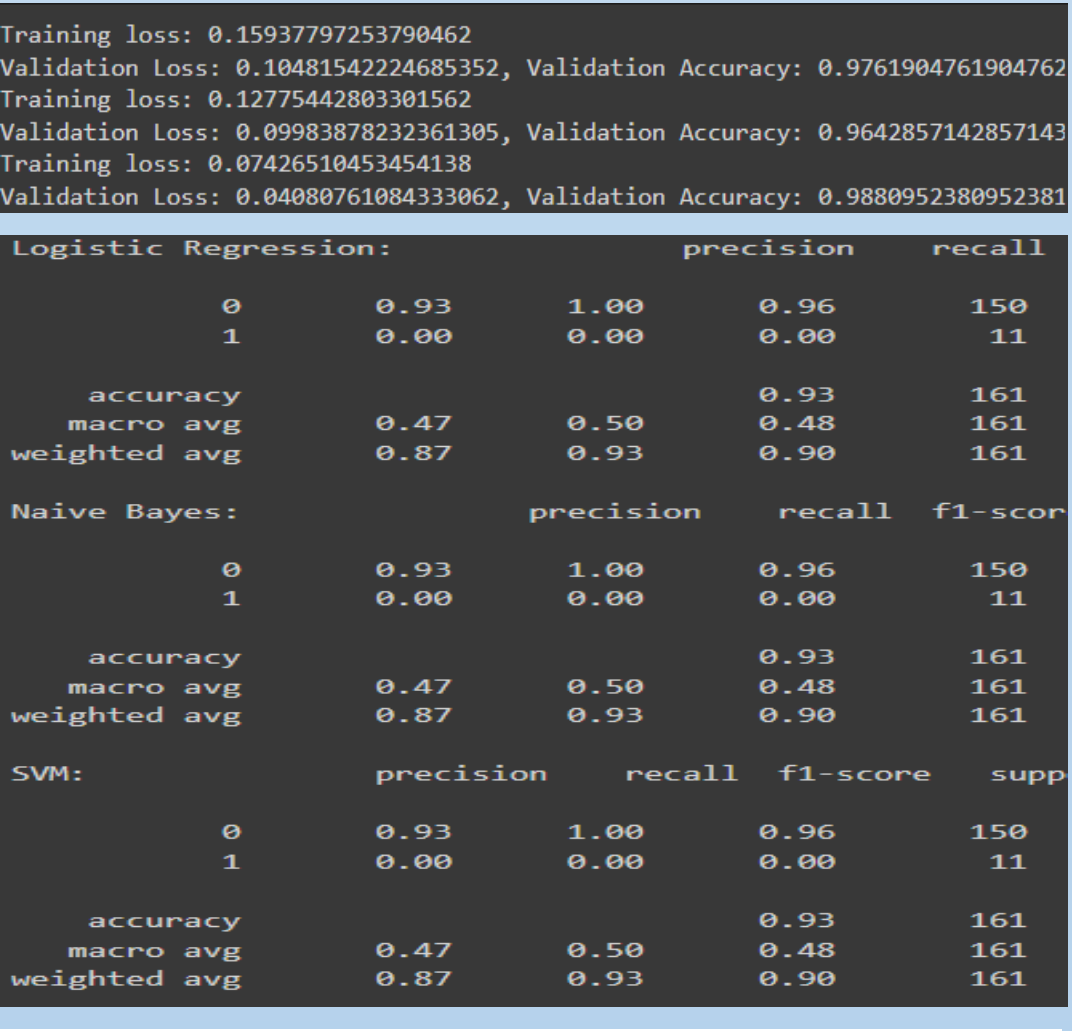
Interactive Analysis of Layoffs



LLM Fine Tuning



Standard ML



LDA & Comparison GPT 3.5,4 Bert, RoBERTa

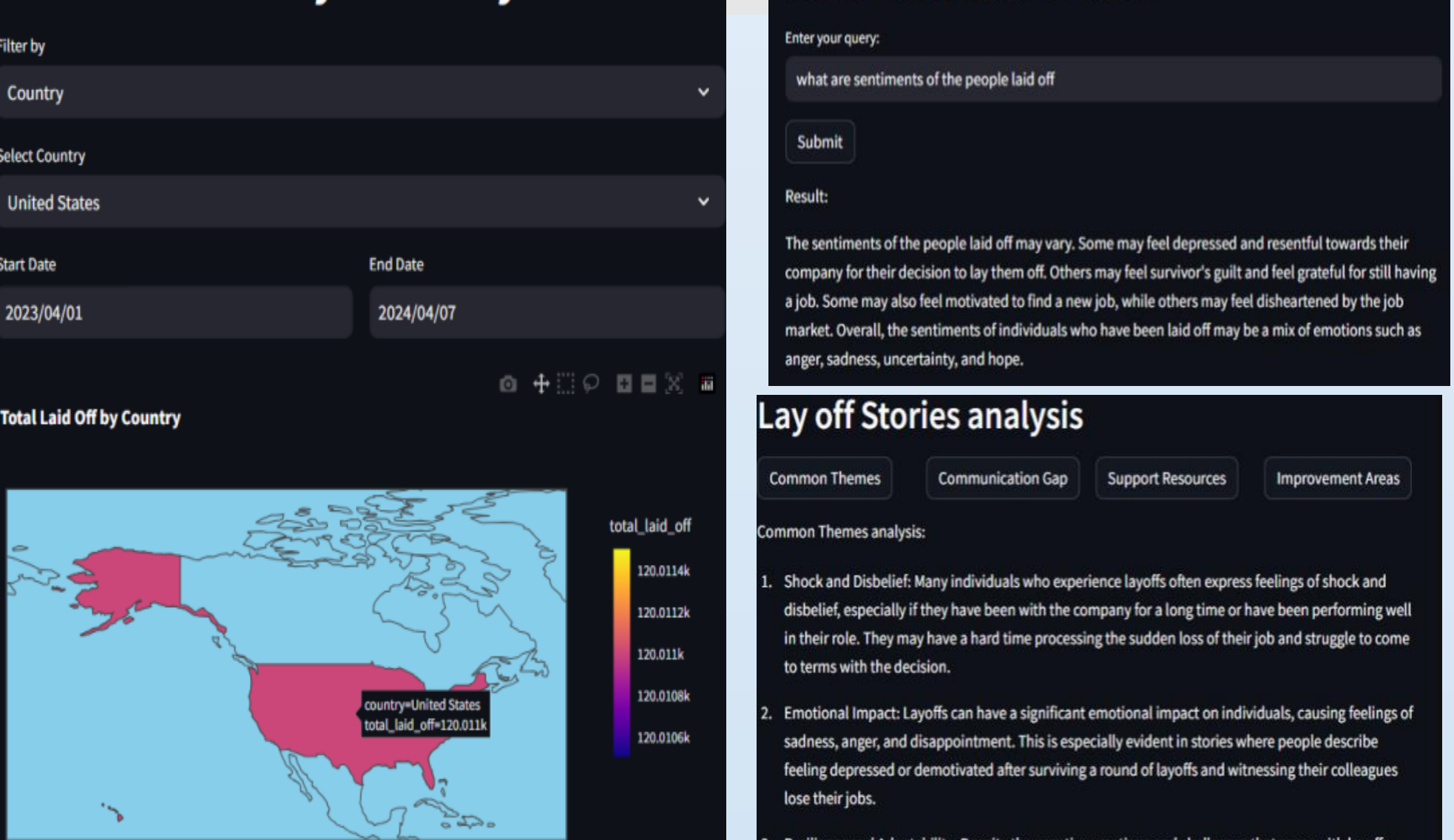


Discussion

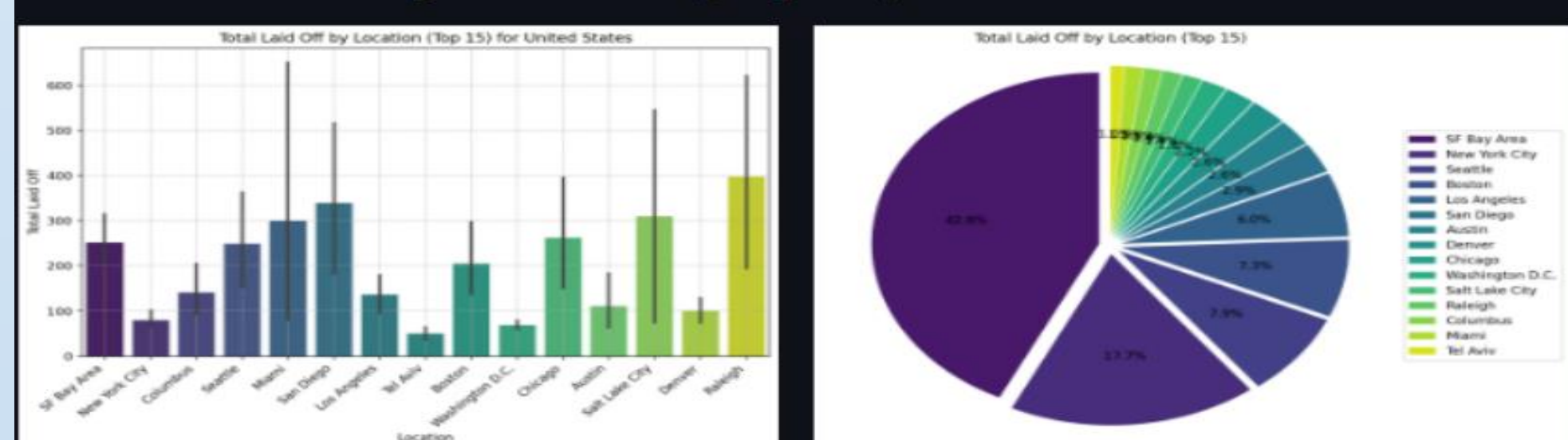
Utilizes natural language processing for sentiment analysis.

- Provides valuable data for informed decision-making.
- Leverages GPT models to uncover emotional responses during transitions.
- Enables organizations to tailor support initiatives effectively.
- Encourages integration of innovative approaches for managing layoffs.
- Prioritizes empathy and proactive support for employee

Interactive Analysis of Layoffs



Total Laid Off by Location (Top 15) for United States

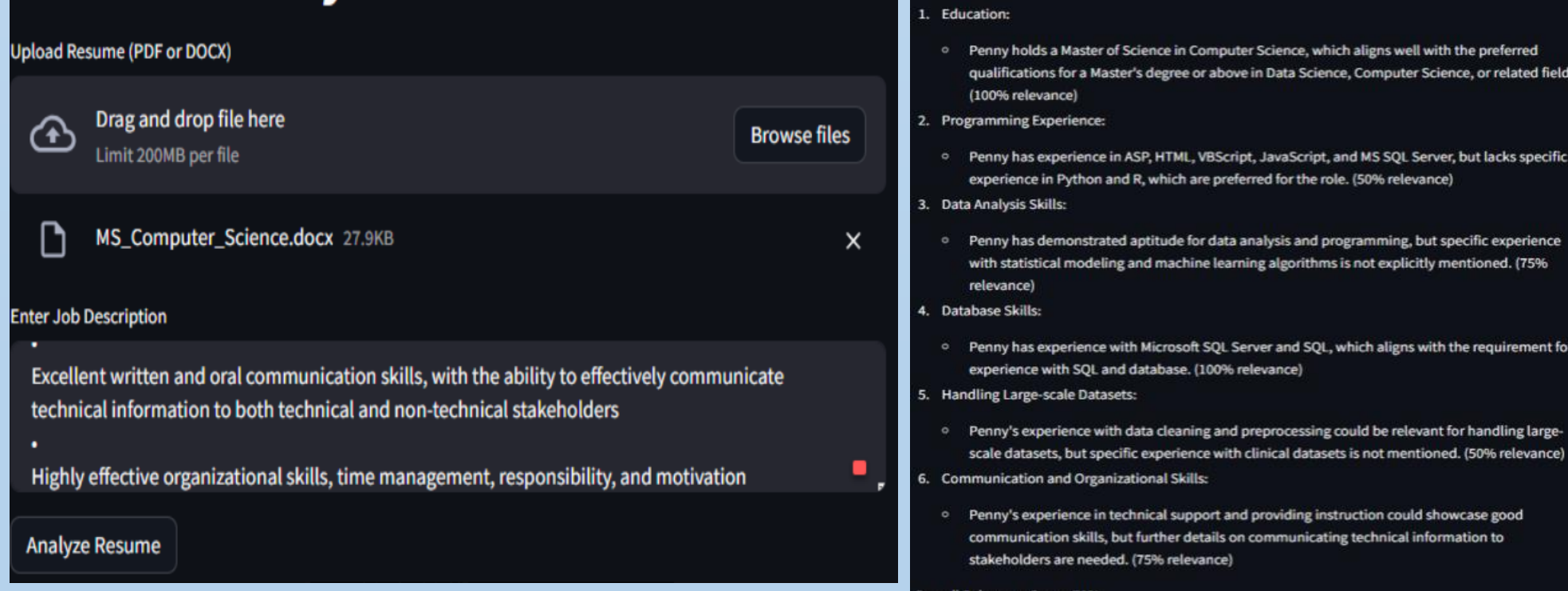


Total People Laid Off in United States: 120,011

Conclusion

- Introduces innovative approach to HR practices with Recruitment Prediction Dashboard.
- Combines frontend, backend, and AI components for real-time insights.
- Streamlines recruitment processes and enhances user experience.
- Ensures data security and compliance.
- Integrates features like resume analysis and sentiment analysis for enhanced functionality.

Resume Analyzer



References

- [1] <https://streamlit.io/>
- [2] <https://colab.research.google.com/>
- [3] <https://platform.openai.com/docs/models>
- [4] <https://www.reddit.com/r/Layoffs/>
- [5] <https://www.kaggle.com/datasets/theakhilb/layoffs-data-2022>