

Humanalytics

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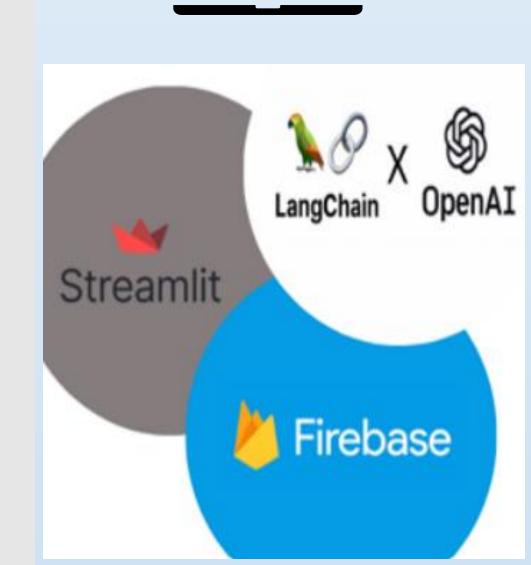
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Abstract

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 Al-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

readme.txt

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

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erceptions.	Playtika	Tel Aviv	Consumer	300	0.1	2024-01-1			
	Discord	SF Bay Area Bengaluru	Consumer	170		2024-01-1		d States	
	Audible	New York City	Media	100				d States	
	Sisense	New York City	Data	60		2024-01-1		d States	
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attaset. 11	Beam Benefits	Columbus	Healthcare	74		2024-01-10		d States	
	Instagram	SF Bay Area	Consumer	60		2024-01-10	Acquired United	d States	
	Amazon	Seattle	Retail			2024-01-10	Post-IPO United	d States	
- Code	ChargePoint	SF Bay Area	Manufacturing		0.12	2024-01-10	Unknown United	d States	
- Code	trix	Miami	Infrastructure		0.12			d States	
·	δFI	SF Bay Area	Finance		0.04	2024-01-10		d States	
	Twitch	SF Bay Area	Consumer	500		2024-01-09	· ·	d States	
Ann ny	Branch	Columbus	Finance	85		2024-01-09		d States	
App.py	Nevro	SF Bay Area	Healthcare	63		2024-01-09		d States	
	Uber Freight	SF Bay Area	Logistics	37				d States	
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Methodologies

Frontend Development: Utilize VS Code for frontend development, providing a robust and efficient code editing environment.

Streamlit for building user-friendly web applications, enhancing accessibility and usability for HR professionals and recruiters. Backend Infrastructure: Python as the backbone for the backend infrastructure, offering versatility and scalability. Leverage Firebase as the database solution, providing real-time data synchronization and seamless integration with frontend applications.

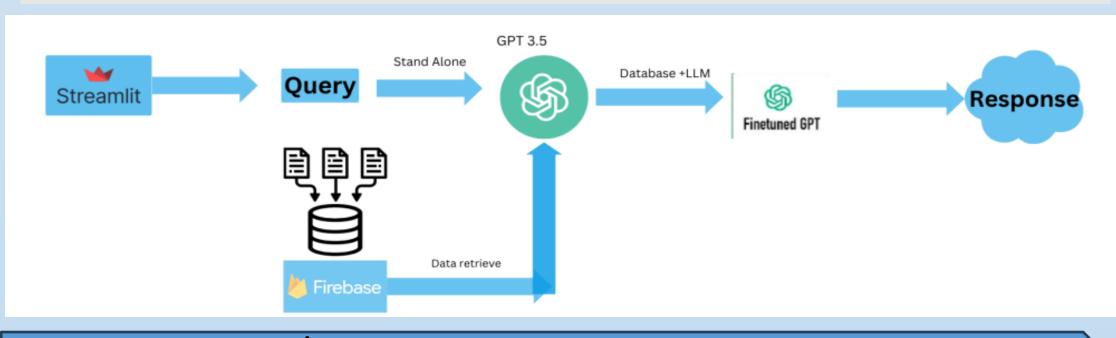
Al Model Integration: Incorporate GPT-3.5 and GPT-4 for advanced text generation and reasoning analysis, enabling natural language understanding and response generation.

Utilize LDA (Latent Dirichlet Allocation) for topic modeling, allowing HR professionals and recruiters to identify key themes and trends in textual data.

Integrate XLNet, BERT, and RoBERTa for sentiment analysis and text classification, enabling accurate assessment of candidate sentiments and categorization of textual data.

Enhancing Accessibility and Usability: Optimize user interface elements for mobile responsiveness, catering to users accessing the platform from various devices.

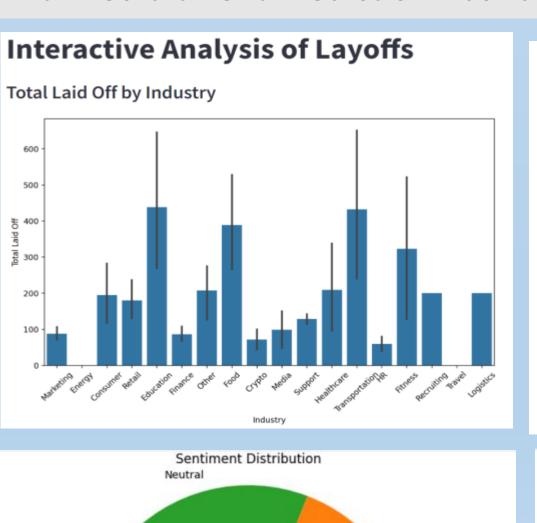
Provide comprehensive documentation and tutorials to assist HR professionals and recruiters in effectively utilizing the platform's features and functionalities.



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.

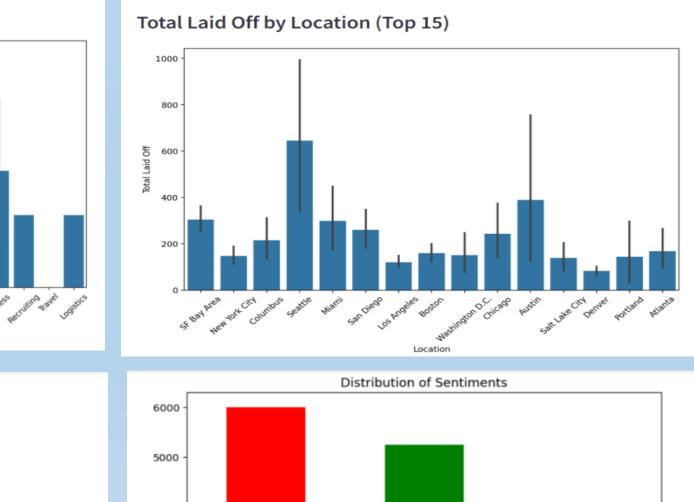


2-16 01:58:00 #twitter#layoffs#twif ["US"] TweetDeckWeb App 2-16 01:13:16 @wkamaubell he ew ["TwitterLayoffs"] Twitter for iPhone We just filed yet and

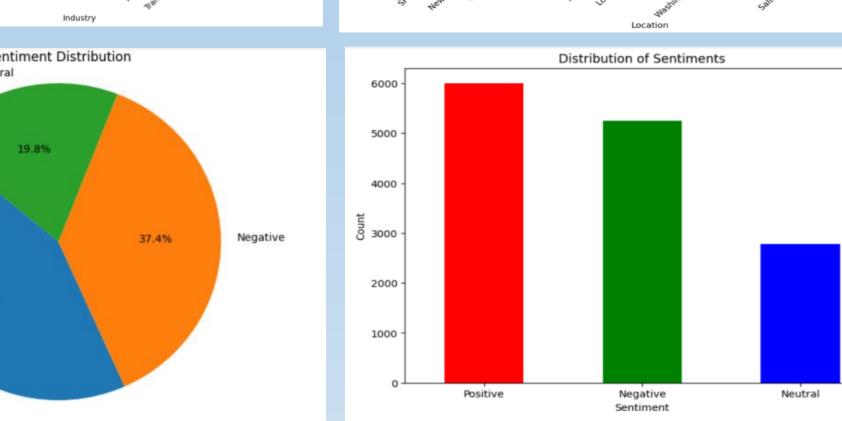
@elonmusk Hey papa elon @elonmusk, wl 1:56:22 #twitterlayoffs #thisshouldntbelegal https:// Twitter Web Ap-

FALSE 2022-12-14 17:33:2E Em @elonmusk, ac [LoveWhereYouWorl Twitter Web App The lawsuit by forme

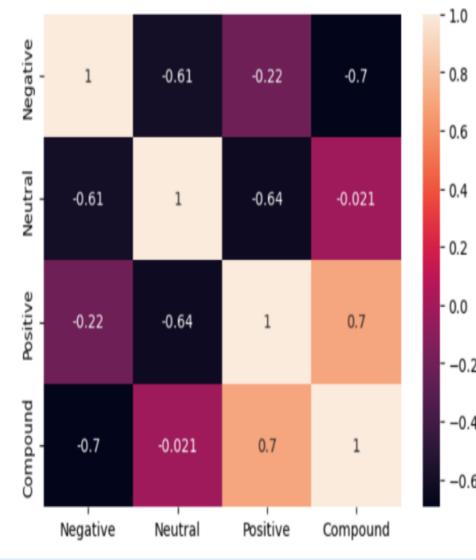
Positive

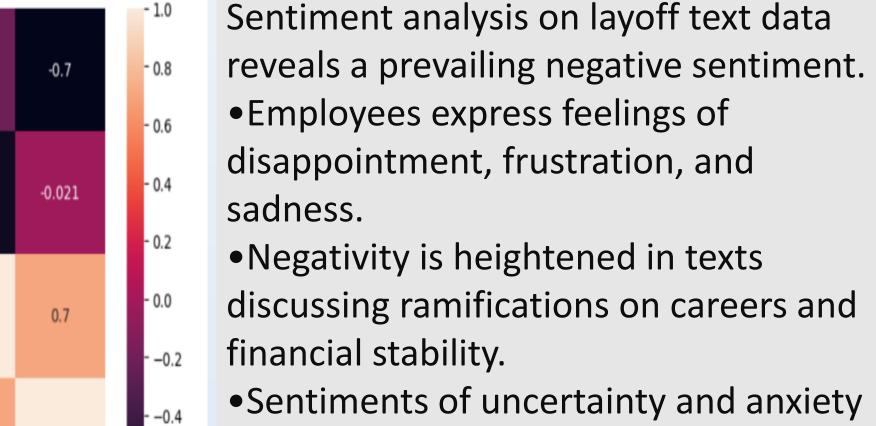


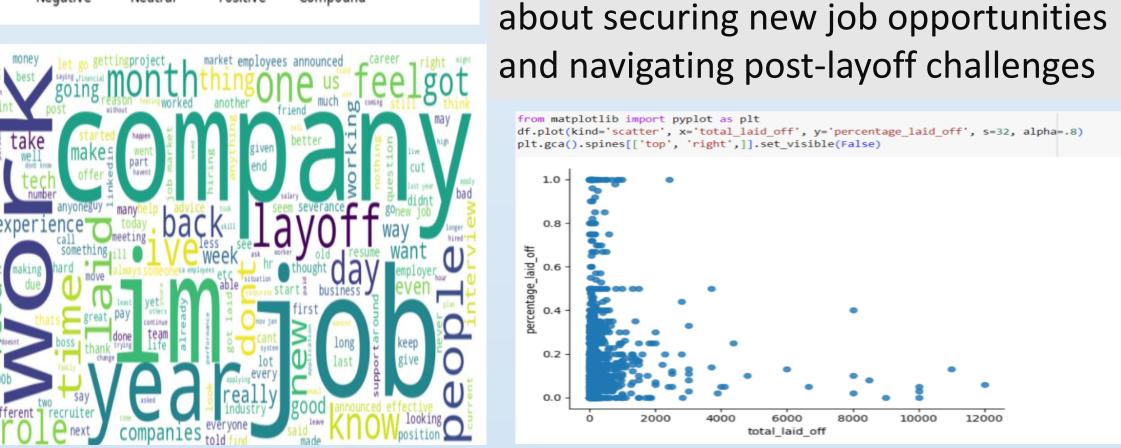
Interactive Analysis of Layoffs



Results (cont..)





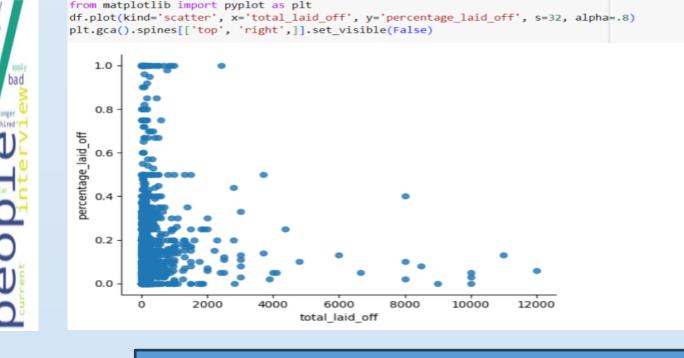


Fine-Tune LLM

Reasoning: (Emotic

Moral Impact

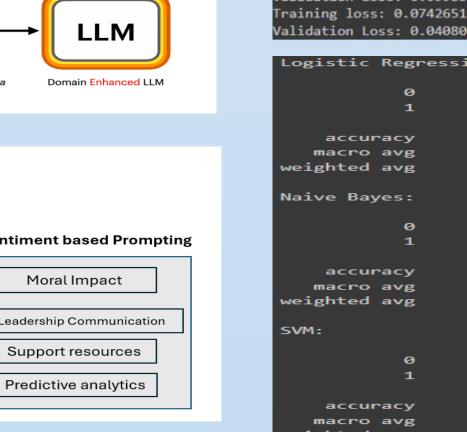
Support resources



about the future are evident.

Employees express apprehensions

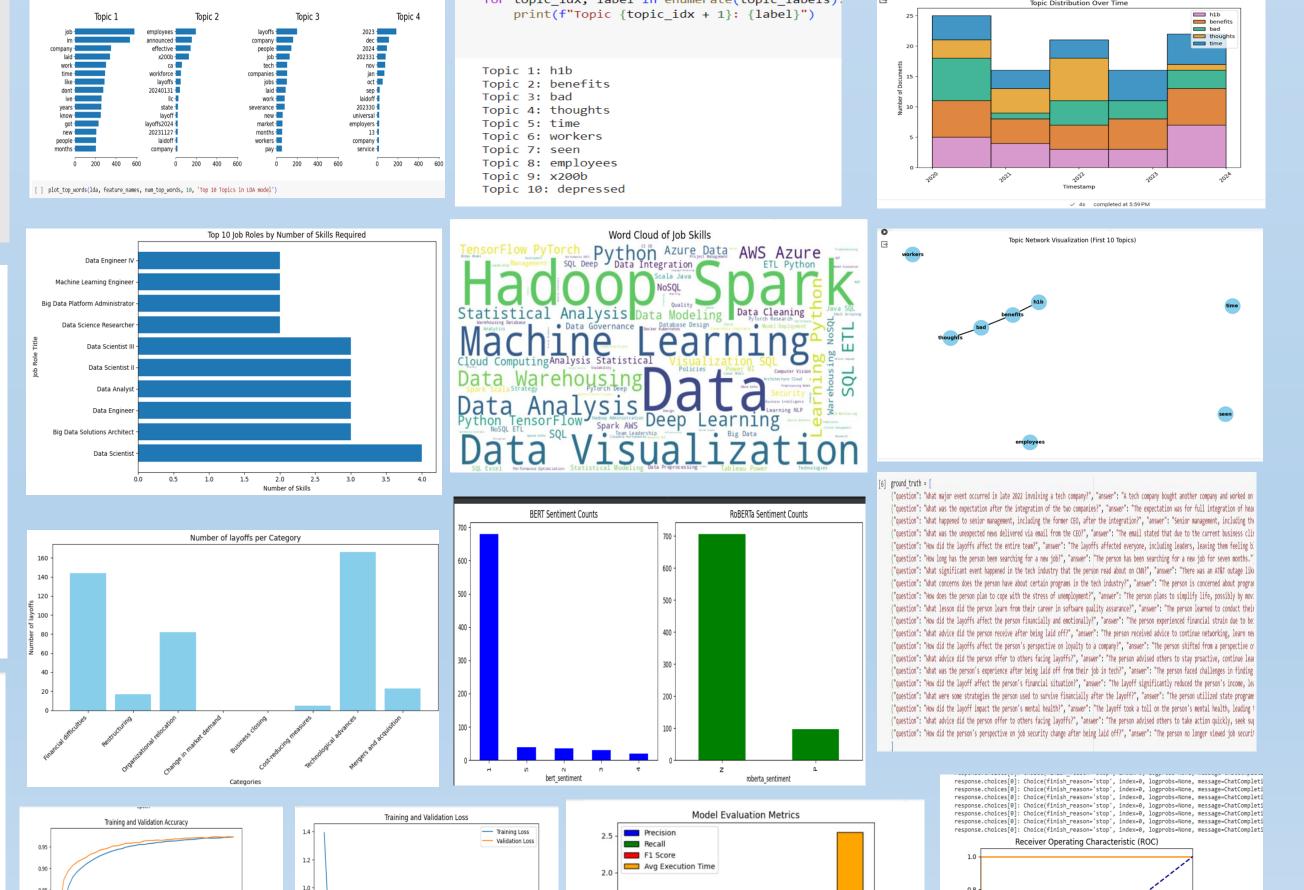
LLM Fine Tuning



Standard ML

Training loss	s: 0.15937	7797253790462			
Validation Lo	oss: 0.104	481542224685352,	Validation Ad	curacy: 0.97619	04761904762
Training loss	: 0.1277	5442803301562			
Validation Lo	oss: 0.099	983878232361305,	Validation Ad	curacy: 0.96428	57142857143
Training loss	: 0.0742	6510453454138			
Validation Lo	oss: 0.046	080761084333062,	Validation Ad	curacy: 0.98809	52380952381
Logistic	Regres	sion:	F	recision	recall
	0	0.93	1.00	0.96	150
	1	0.00	0.00	0.00	11
				0.03	252
accur macro	_	0.47	0.50	0.93 0.48	161 161
weighted	_	0.87	0.93	0.90	161
weighted	avg	0.07	0.55	0.50	101
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weighted	avg	0.07	0.95	0.90	101
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accur				0.93	161
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weighted	avg	0.87	0.93	0.90	161

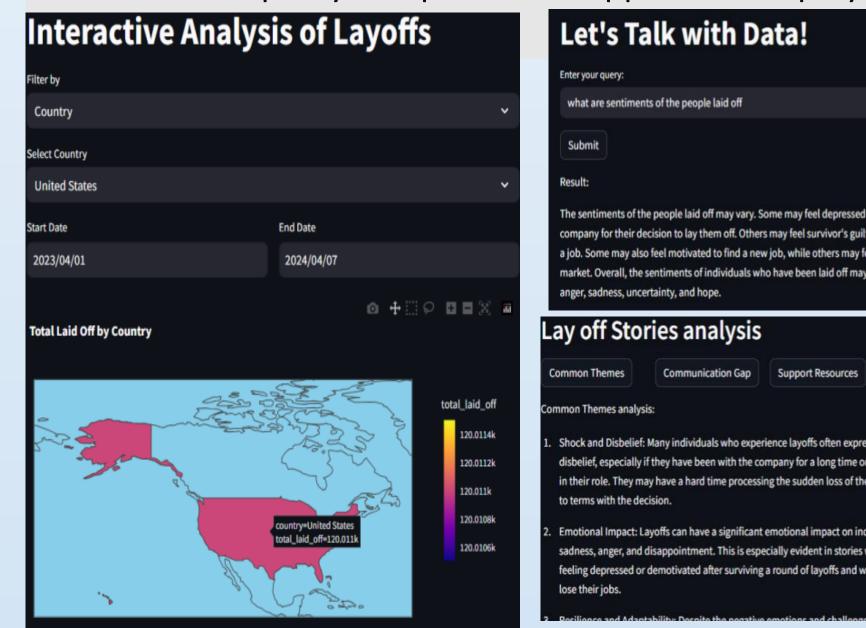
LDA & Comparison GPT 3.5, 4 Bert, RoBERTa



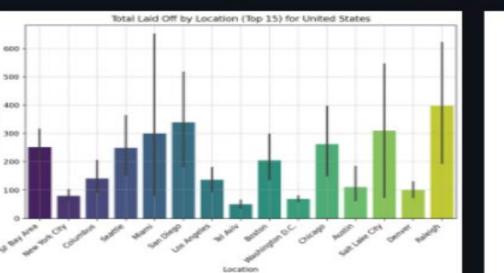
मार्थ Discussion

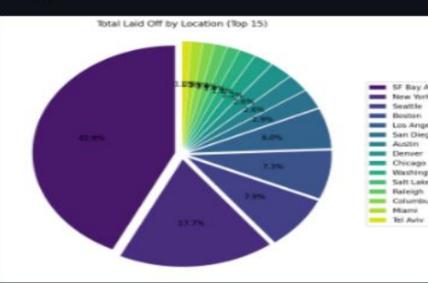
Utilizes natural language processing for sentiment analysis.

- 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



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

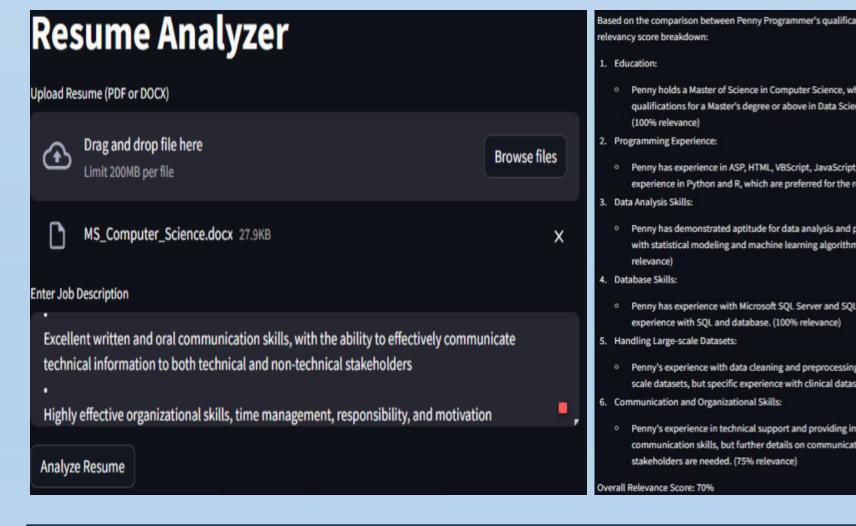


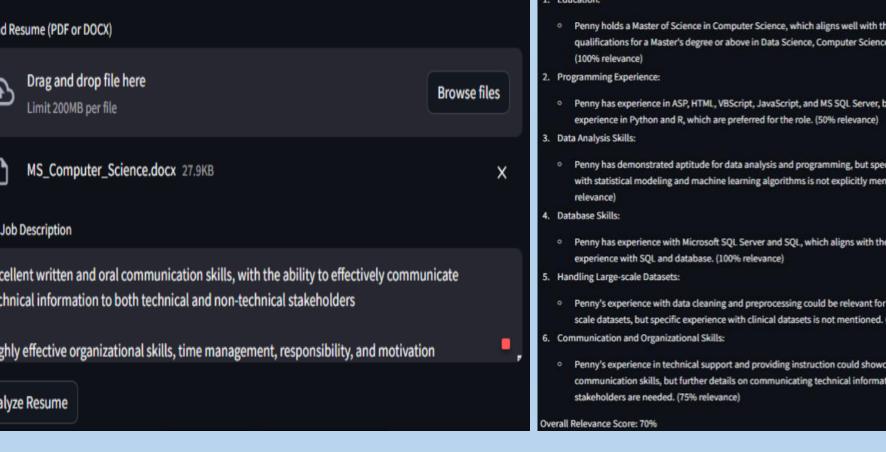


Total People Laid Off in United States: 120,011

(*) 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.







References

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