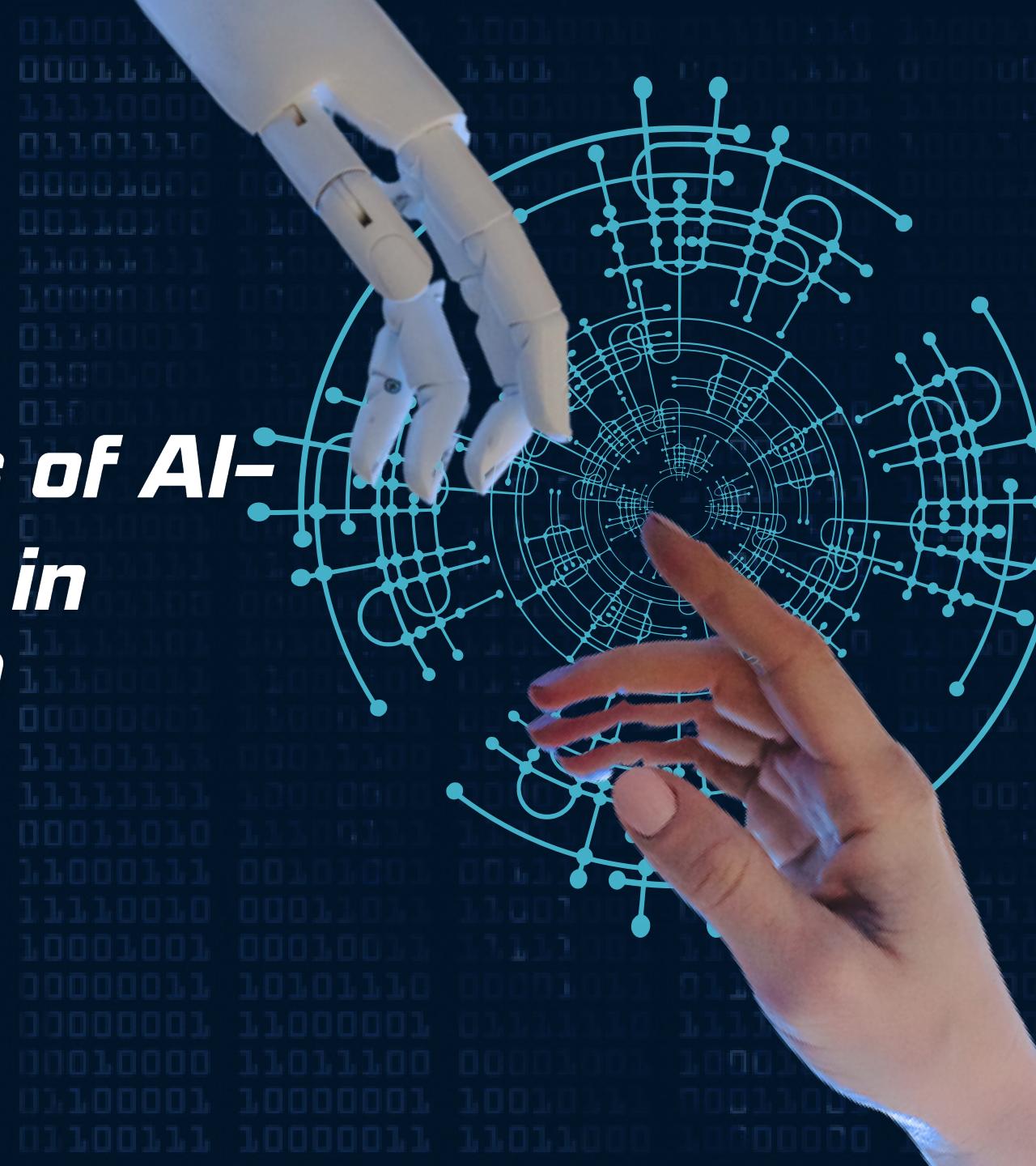


# *Exploring the Benefits of AI- Powered Insights in Business (NLP)*





# Group Members

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# Business understanding

Limited sensitivity in NLP emotion analysis impedes empathetic interactions. Leveraging the GoEmotions dataset and neural networks/SVM models for improved emotion classification and user experiences.

# Main Objective

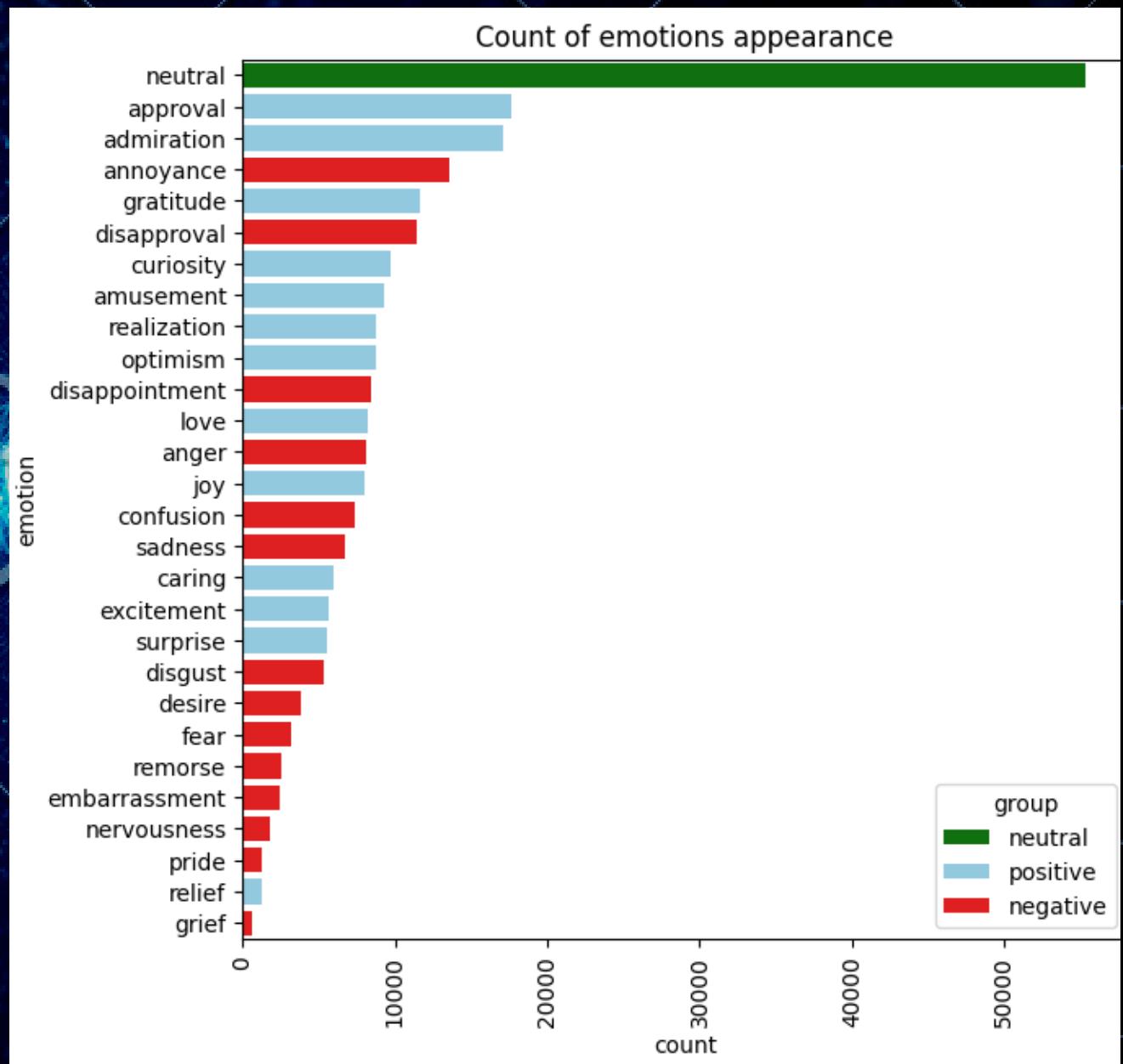
Expand emotion classification datasets by training models to analyze text tonality using the Google AI GoEmotions dataset.

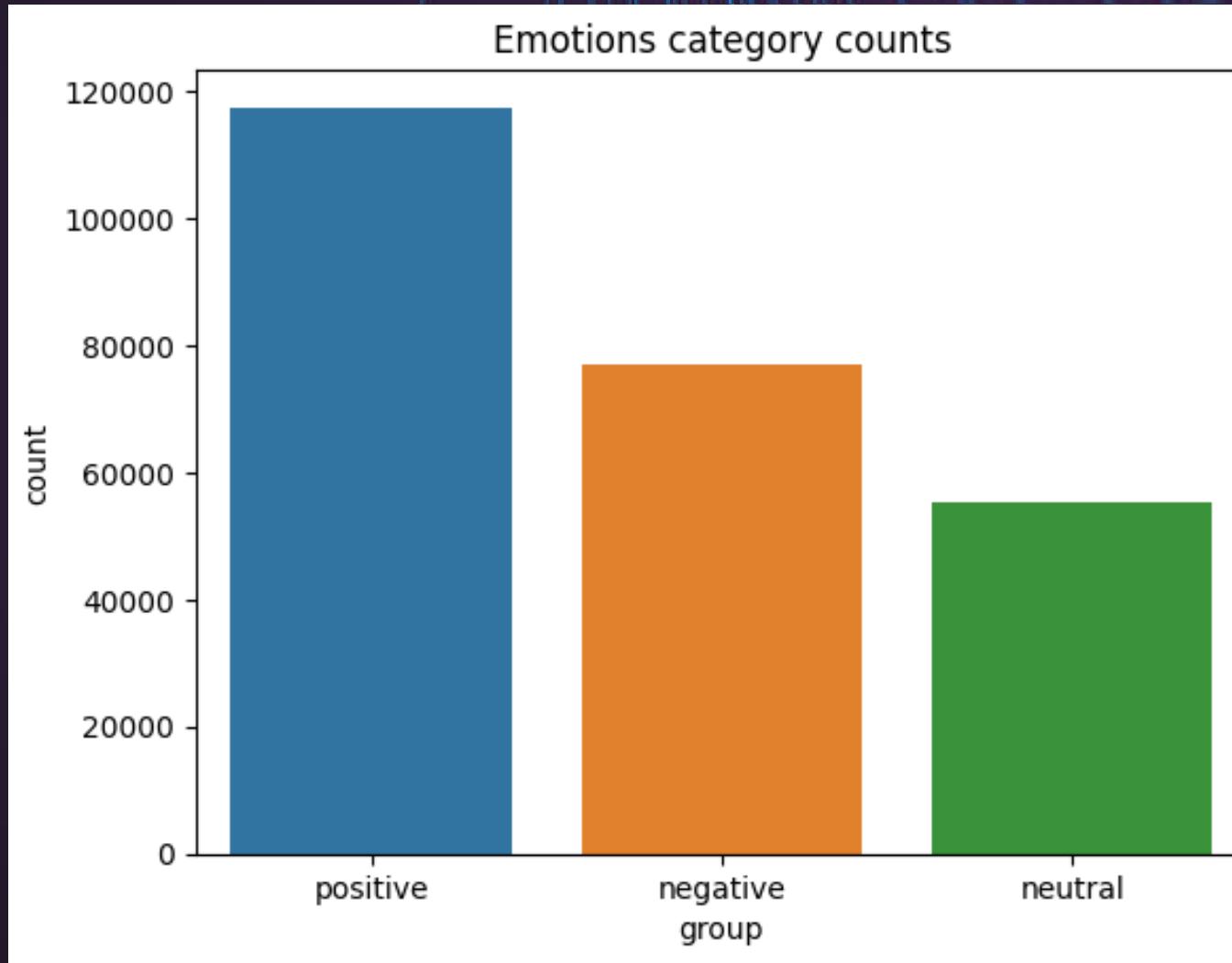


# Specific objectives

- Improve customer support by recognizing and addressing user emotions in textual communication.
- Develop a model to classify and accurately predict sentiments into different sentiment categories

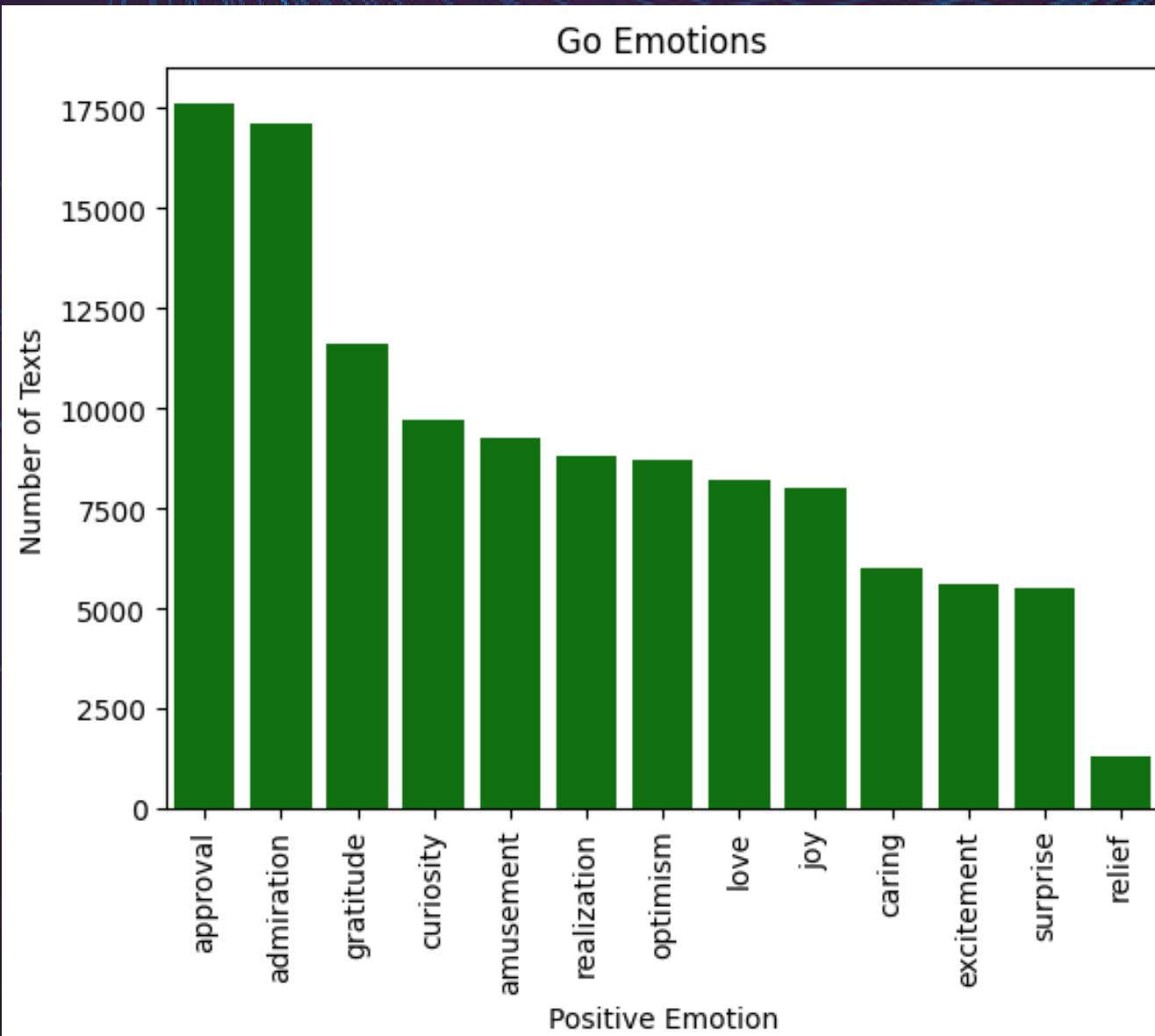
# Exploratory Data Analysis



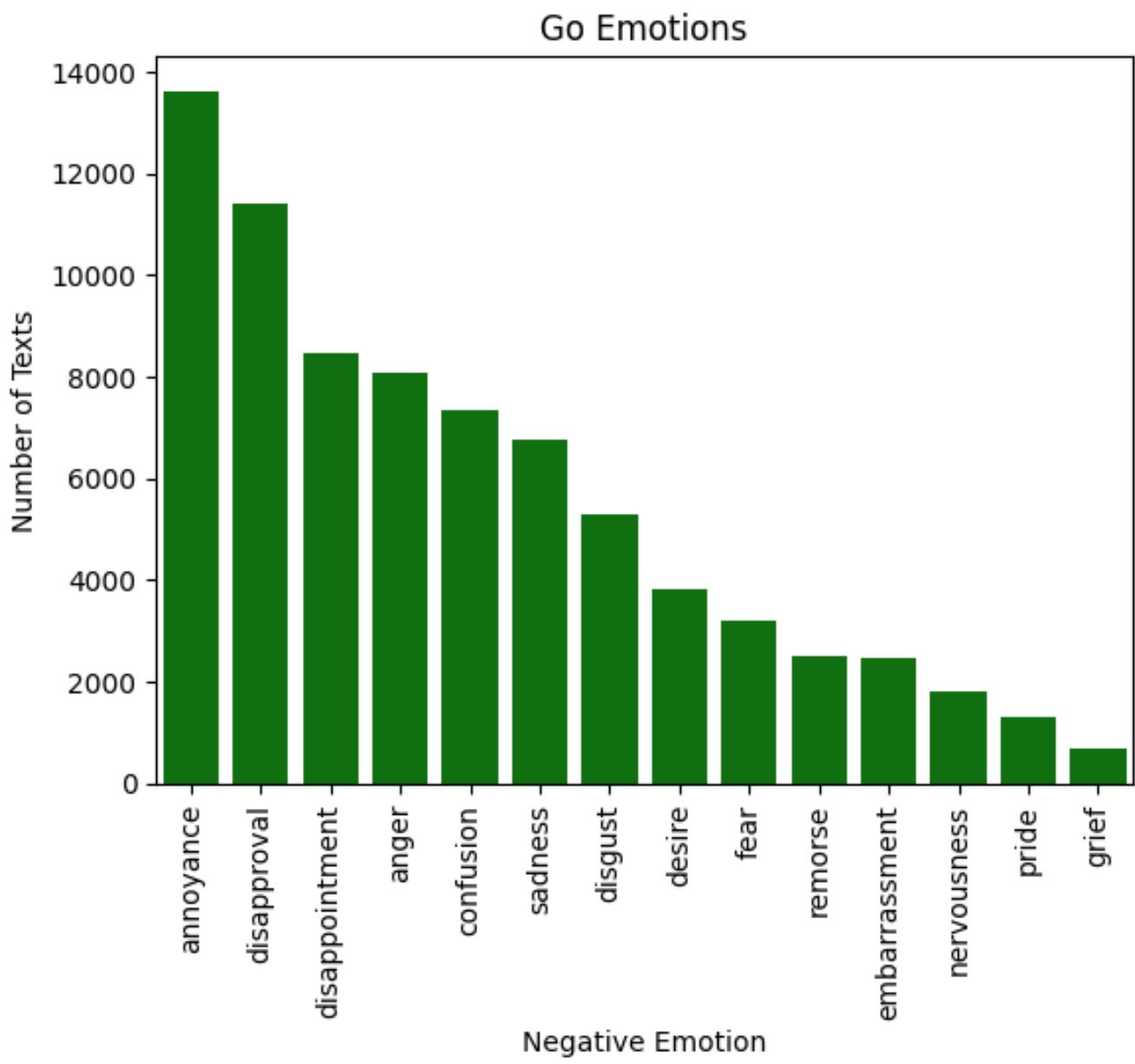


The positive category had the most counts within the dataset while the neutral has the least count.

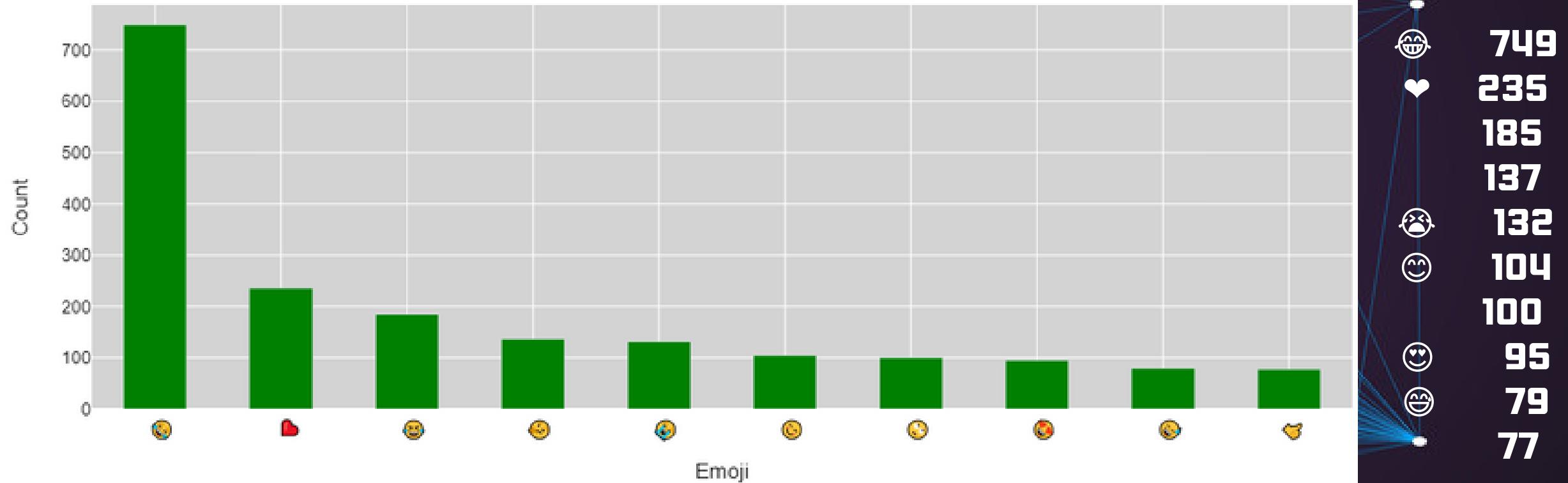
# Positive Emotions Count



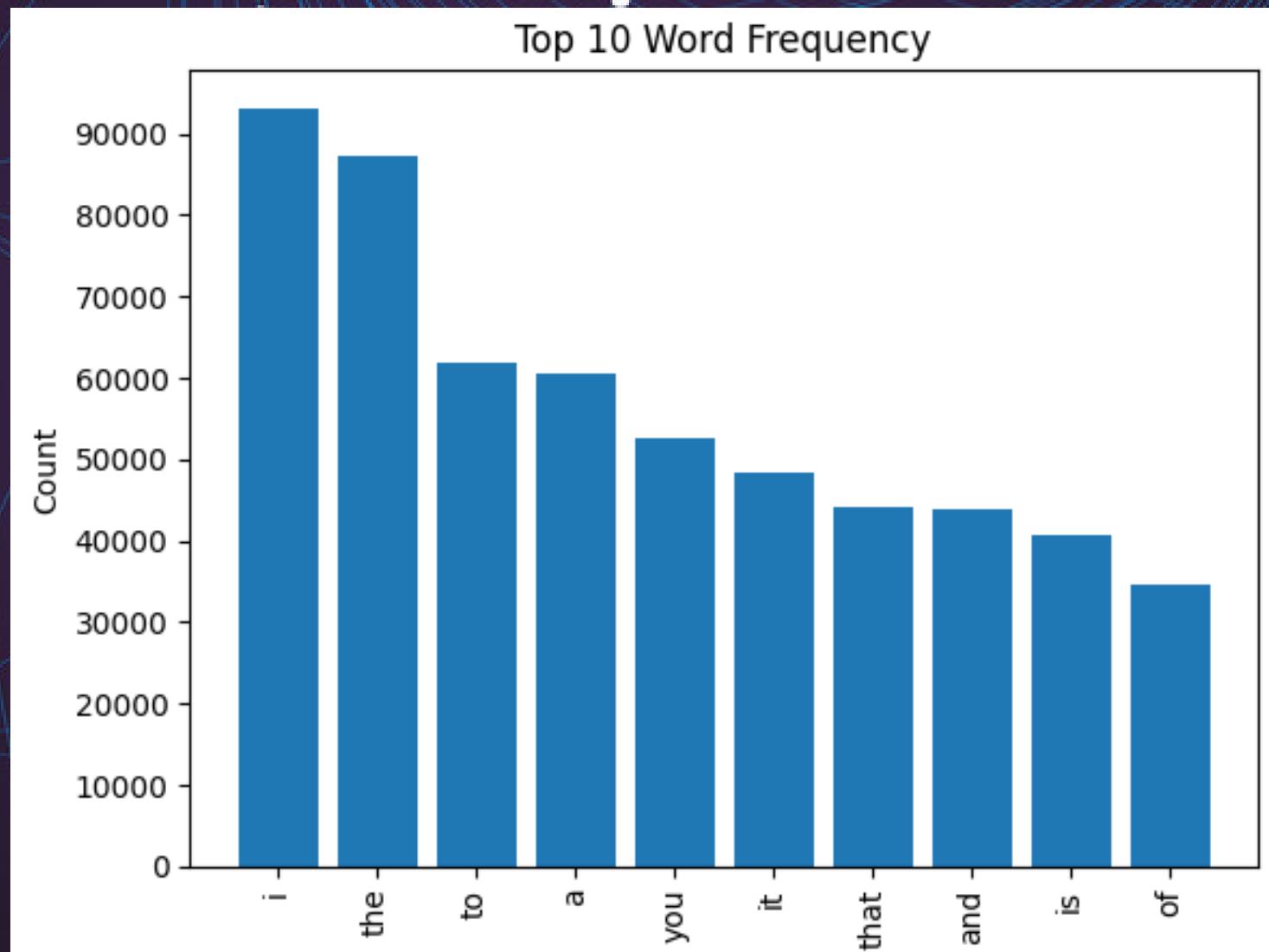
# Negative Emotions Count



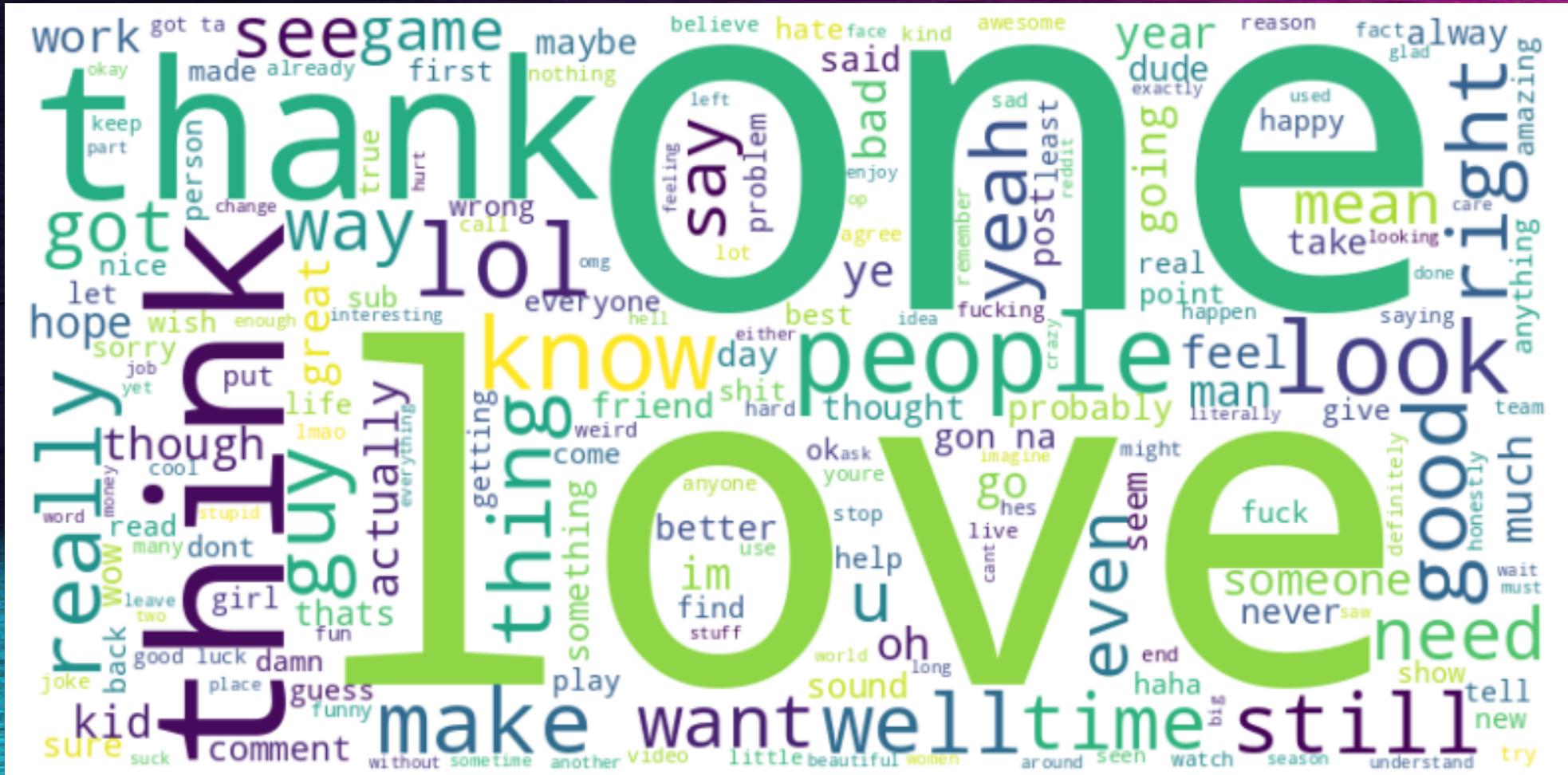
## Top 10 Most Used Emojis



# Word counts before removal of stop words



# Word Cloud



# Models used:

- Support Vector Machines(SVM)
- RNN (Recurrent Neural Network)
- CNN (Convolutional Neural Network)
- Transformers (Bert)



# MODELS PERFORMANCE COMPARISON

	SVM	RNN	CNN	Transformers
Accuracy	0.97	0.50	0.57	0.24
Recall	0.97	0.50		
Precision	0.97	0.50		
F1 Score	0.97	0.49		

# Conclusions

- Reddit data shows predominantly positive sentiments towards the company.
- The sentiment analysis model demonstrates high accuracy, precision, and recall for positive and neutral sentiments, making it reliable for sentiment analysis.

# Recommendations

