

Emotion Insight App

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Description

Emotion Insight is an advanced visualization tool designed to transform complex emotional data into easily interpretable graphs, tailored specifically for NLP and ML engineers, as well as a broader user base interested in sentiment analysis. This innovative tool enables the seamless upload and integration of custom models, offering users a personalized experience in analyzing and interpreting sentiment and emotion from textual data.

Problems

The company currently lacks a systematic approach to analyze the vast amount of feedback and public opinions available on social media platforms. This gap in our process makes it challenging to:

- Effectively evaluate the sentiment and emotional tone in customer feedback and public reactions to our products.
- Understand the social voice and perception of our marketing campaigns, including the public's response to our campaign.

Business Requirements:

The visualization tool should present graphs that are easy to understand, enabling NLP and ML engineers to upload their models. It should store the history of user inputs. Users can input a sentence or upload a text file to generate the visualization graph. The graph consists of interactive blocks, allowing users to delve into the details of each input. Additionally, the tool allows users to visualize the intensity of emotions in the input text.

Nouns/Verbs

- graphs
- NLP
- ML
- engineers
- models
- inputs
- Users
- sentence
- file
- blocks
- Emotions

- upload
- store
- generate
- visualize

Rules:

Functional

- The users are able to upload sentences, comments, tweets to view the overall intensity of positive or negative emotion.
- The users are able to upload their nlp model.
- The users can view the data of sub-elements that construct the colored matrix, allowing them to interpret the intensity of the overall emotion.
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Non Functional

- Ensure efficient data handling by transmitting uploaded data to the Flask backend for processing.
- The NLP model processes data and integrates with the frontend, enabling the React application to dynamically render the colored matrix based on the analysis.
- Low render latency.
- Same input data should only be processed once.
- Input text can not be longer than 500 chars
- The frontend matrix visualization uses two differently colored blocks to represent the intensity of emotions.

Target Audience:

Data scientist, Machine Learning background, investor, Product manager

Challenge Questions:

What are some other aspects of sentimental data that the user wishes to explore?

How should the visualization be designed to better present the data for easy understanding?

Dimensions:

- **Tech savvy vs Executives Decision Makers**
- **Marketing professionals vs consumers**

User stories:

User Persona 1: Emily Nguyen(Marketing professionals)

Age: 32

Occupation: Product Manager at a mid-sized tech company specializing in consumer electronics. Education: Master's degree in Business Administration with a specialization in Marketing.

Location: San Francisco, CA

Demographics

Tech Savviness: High

Social Media Use: Active user of LinkedIn for professional networking, Twitter for news and industry trends, and Instagram for personal expression.

Challenges

Struggling to process and analyze the vast amount of unstructured feedback across multiple social media platforms.

Difficulty in quantifying and interpreting the sentiment and emotional tone of social media comments and feedback.

Limited time to manually sift through social media data to extract actionable insights.

Behavioral Traits

Data-driven decision-maker who relies on analytics and insights to guide strategies.

Open to adopting new technologies that can streamline workflows and enhance product development.

Values tools that provide clear, actionable insights quickly and efficiently.

Needs

A tool that can aggregate and analyze social media feedback across platforms in real-time.

An intuitive dashboard that visualizes sentiment and emotion data in an easily interpretable manner.

The ability to drill down into specific data points for deeper analysis without requiring extensive data science expertise.

Quote

"I need to quickly understand our customers' reactions to our products and campaigns to make informed decisions that drive growth and customer satisfaction."

Persona 2: Alex Rivera - ML/NLP Data Scientist

Background

Age: 35

Occupation: ML/NLP Data Scientist at a tech startup focused on AI-driven analytics tools.

Education: Master's degree in Computer Science with a specialization in Artificial Intelligence.

Location: San Francisco, CA

Tech Savviness: High

Social Media Use: Minimal; primarily uses GitHub and Stack Overflow for professional collaboration and knowledge exchange.

Goals

To develop advanced sentiment and emotion analysis models that accurately interpret social media data.

To make sentiment analysis accessible to non-technical users through intuitive interfaces.

To contribute to the field of NLP with innovative algorithms that enhance understanding of human emotions and sentiments.

Challenges

Creating models that accurately capture the nuances of sentiment and emotion across diverse social media platforms.

Balancing the complexity of NLP models with the need for user-friendly visualization and interpretation.

Needs

Platforms for visualizing and discussing insights in the field of NLP and sentiment analysis.

User Persona3: Sophia Martinez(normal consumer)

Background

Age: 29

Occupation: Digital Marketing Specialist

Education: Bachelor's Degree in Communication

Location: Austin, Texas

Demographics

Marital Status: Single

Tech Savviness: Low

Social Media Use: Highly active on platforms like Twitter, Instagram, and LinkedIn. Uses social media for both professional purposes and personal expression.

Goals

To engage with brands for support and to influence product improvements.

Challenges

Feeling like her feedback on social media often goes unnoticed by brands.

Navigating through negative or irrelevant responses to her posts or comments.

Finding a balance between expressing her opinions and maintaining her professional image online.

Needs

A platform where her feedback is acknowledged and can lead to meaningful improvements.

Tools to filter and manage interactions to focus on constructive and relevant discussions.

Ways to directly influence product development and campaign strategies through her feedback.

User Persona 4: Michael Richardson

Background

Age: 45

Occupation: Chief Executive Officer (CEO) of a mid-sized technology firm specializing in consumer electronics.

Education: MBA with a specialization in Strategic Management.

Location: New York, NY

Demographics

Income: \$250,000+ per year

Tech Savviness: Moderate to high; understands the strategic importance of technology but relies on teams for in-depth expertise.

Social Media Use: Limited personal use; primarily engages with social media through corporate channels or for market insights.

Goals

To steer the company towards sustained growth by aligning product development and marketing strategies with consumer expectations and market demands.

To maintain a competitive edge by leveraging advanced analytics and data-driven insights.

To enhance brand reputation and customer loyalty through proactive engagement and response to consumer sentiment.

Challenges

Navigating the vast amount of unstructured data from social media to identify actionable insights.

Making quick yet informed strategic decisions in a rapidly changing market environment.

Ensuring the company's strategies are agile and responsive to real-time consumer feedback and sentiment.

Behavioral Traits

Prioritizes high-level insights over granular data details, focusing on trends that impact strategic direction.

Values efficiency and effectiveness in communication and reporting.

Relies on executive dashboards and summaries to understand performance metrics and key insights at a glance.

Needs

A dashboard that consolidates sentiment and emotion analysis into clear, actionable insights that inform strategic decisions.

Regular reports that highlight trends, potential issues, and opportunities in consumer sentiment and market positioning.

Assurance that data analytics practices are compliant with privacy laws and ethical standards.

Quote

"In a world driven by consumer feedback, being able to quickly understand and act on social media sentiment is not just an advantage—it's a necessity."

Summary of Classes, Attributes and Associations:

ML:

- positive emotion
- negative emotion
- type
- user input

Grid:

- grid,

- grid id

Block:

- color
- block id