

# Sentiment Analysis Dashboard - User Guide

## Overview

The Enhanced Sentiment Analysis Dashboard is a comprehensive web application that analyzes text sentiment using state-of-the-art machine learning models. It can classify text as **Positive**, **Negative**, or **Neutral** with confidence scores.

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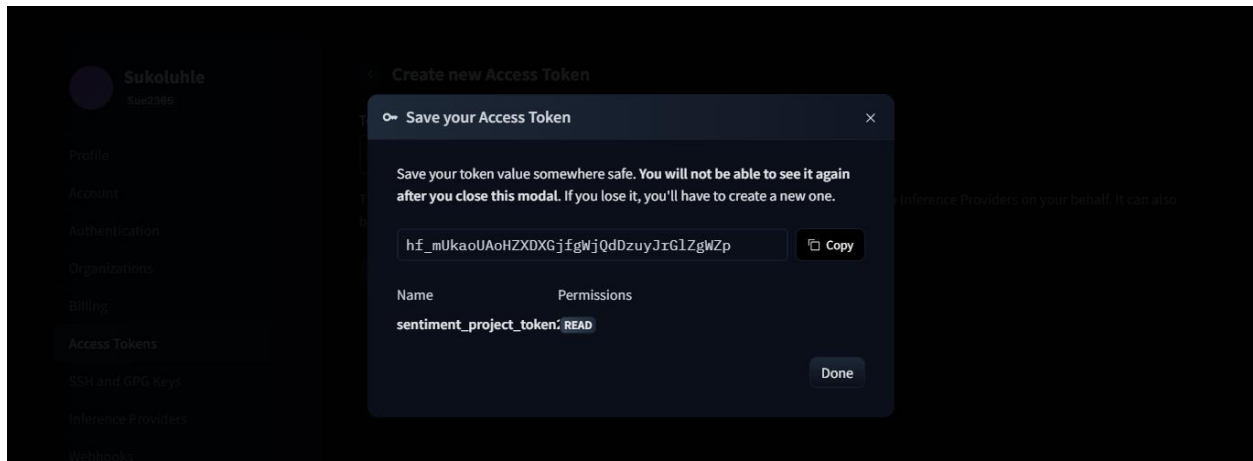
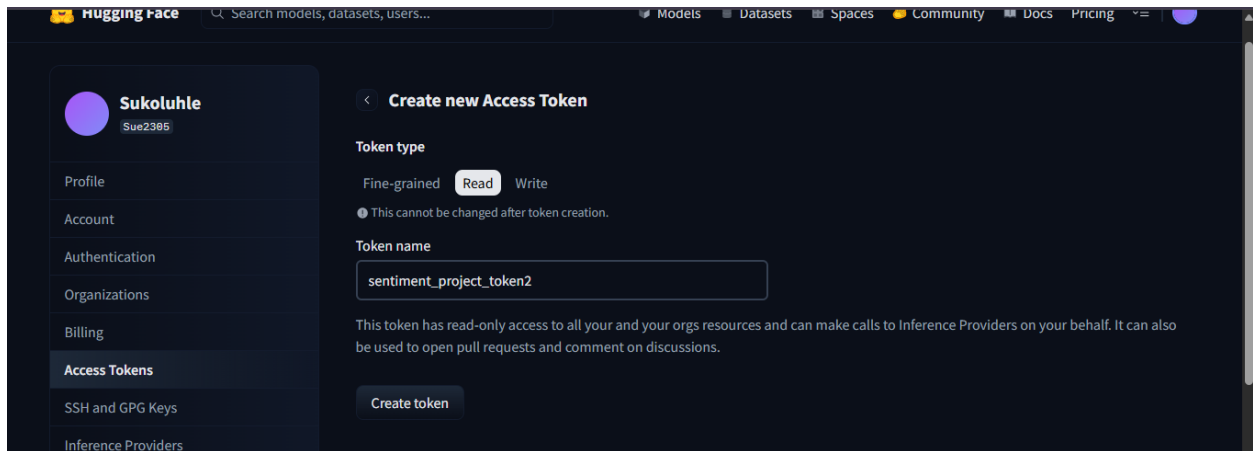
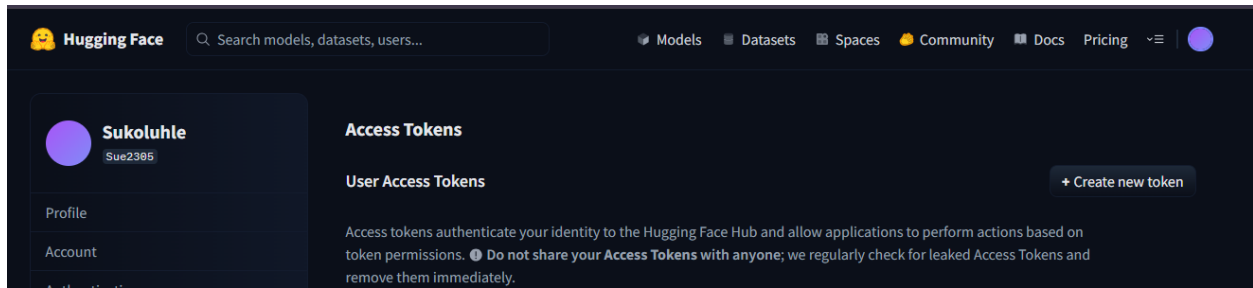
## Getting Started

### Prerequisites

- A Hugging Face account and API key
- Web browser (Chrome, Firefox, Safari, Edge)
- Internet connection

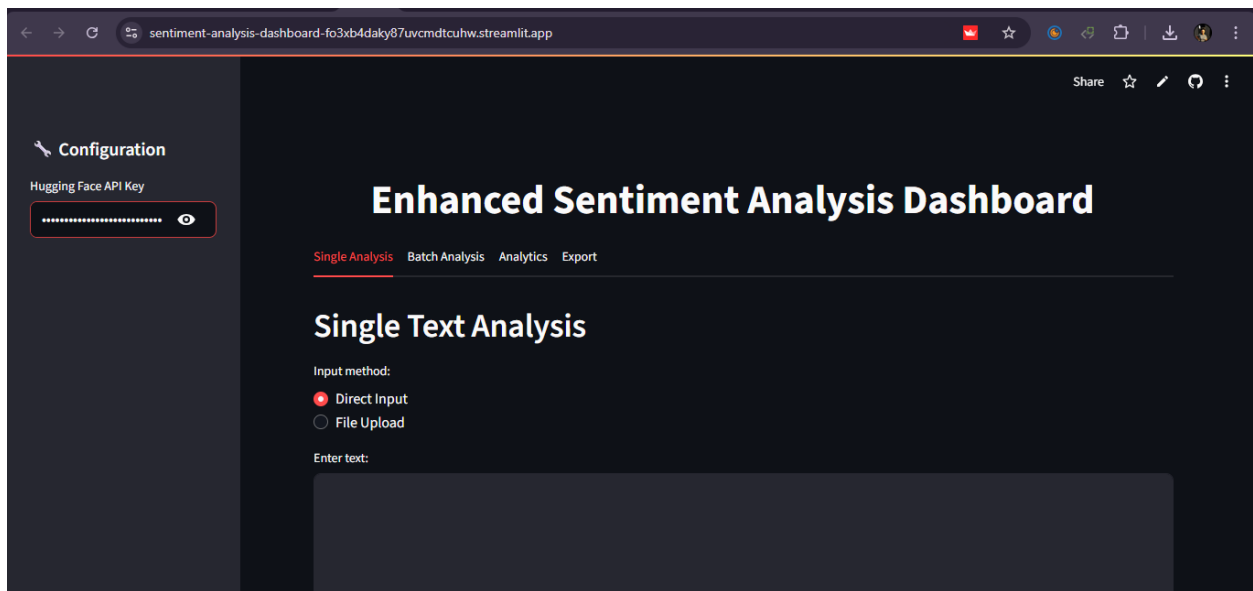
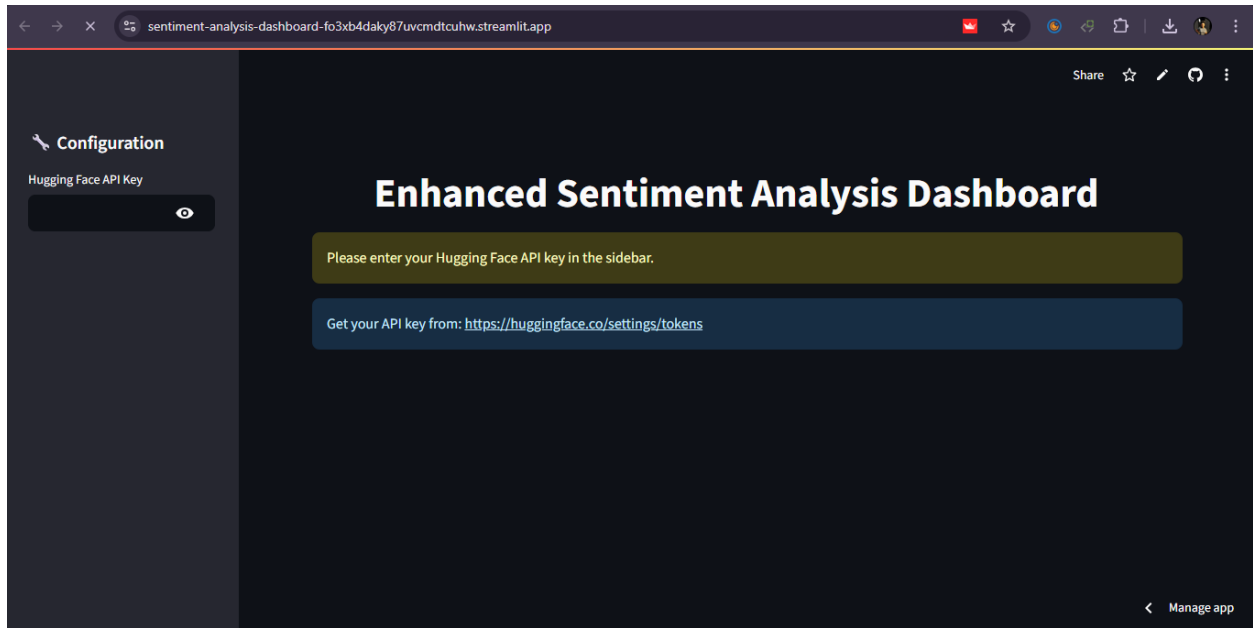
### Setup Steps

1. **Get Your API Key:**
  - Visit [Hugging Face](#)
  - Create a new token with "Read" permissions
  - Copy the token



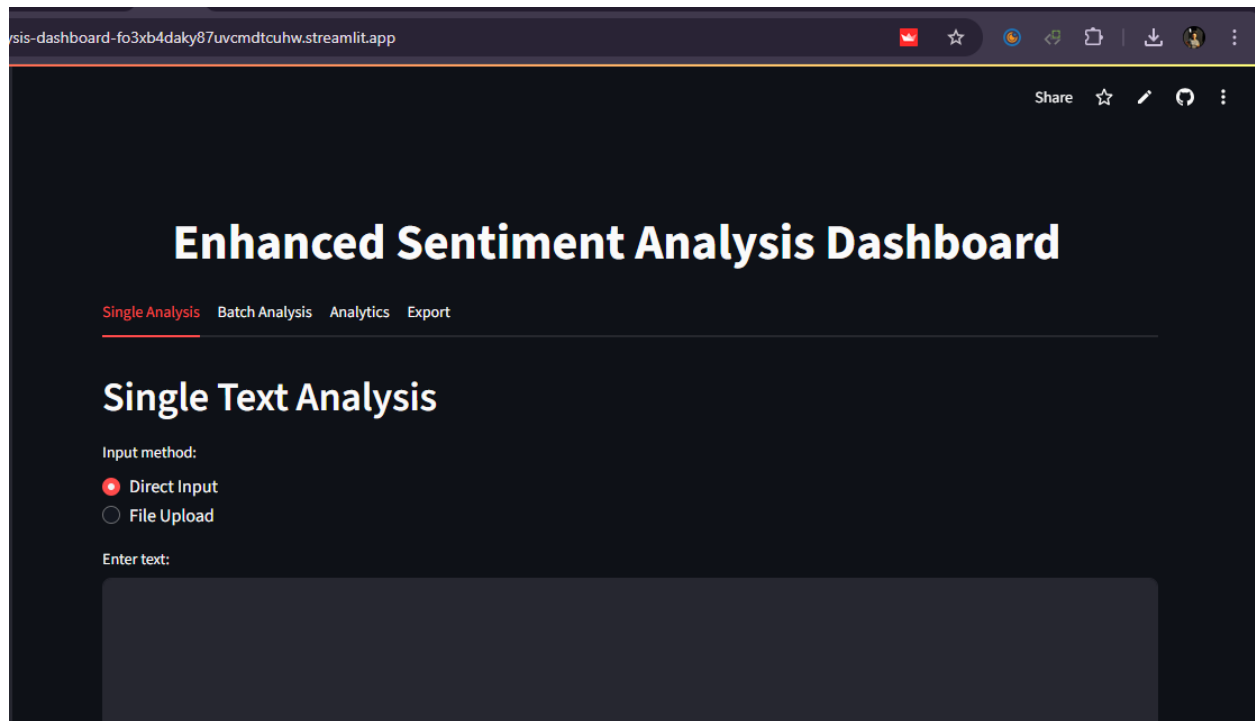
## 2. Launch the Dashboard:

- Open the application in your web browser
- Enter your API key in the sidebar (Configuration section)
- The key is stored securely and only used for API calls



### 3. Verify Setup:

- The dashboard will automatically test the connection
- You should see no warning messages if setup is successful



## Dashboard Layout

### Header

- **Title:** Enhanced Sentiment Analysis Dashboard
- **Navigation Tabs:** Single Analysis, Batch Analysis, Analytics, Export

### Sidebar

- **Configuration:** API key input
- **Status:** Connection and model information

### Main Content Area

- **Tabs:** Four main sections for different functionalities
- **Results Display:** Interactive charts and detailed results

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## Single Analysis

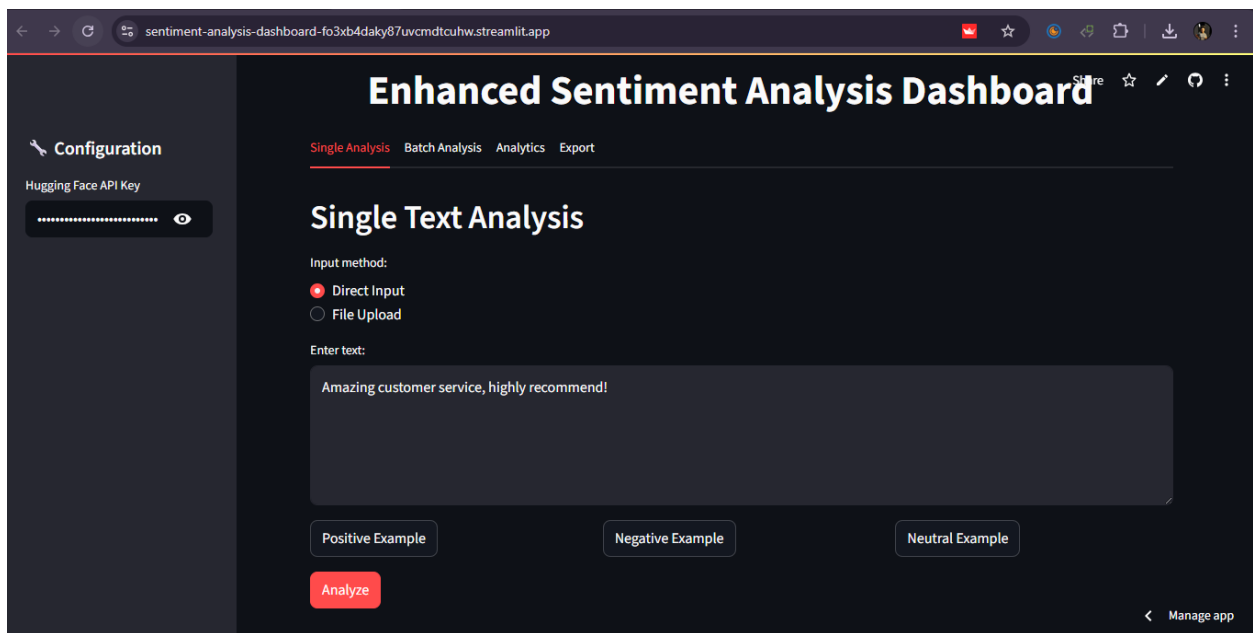
### Purpose

Analyze individual texts or documents for sentiment.

## How to Use

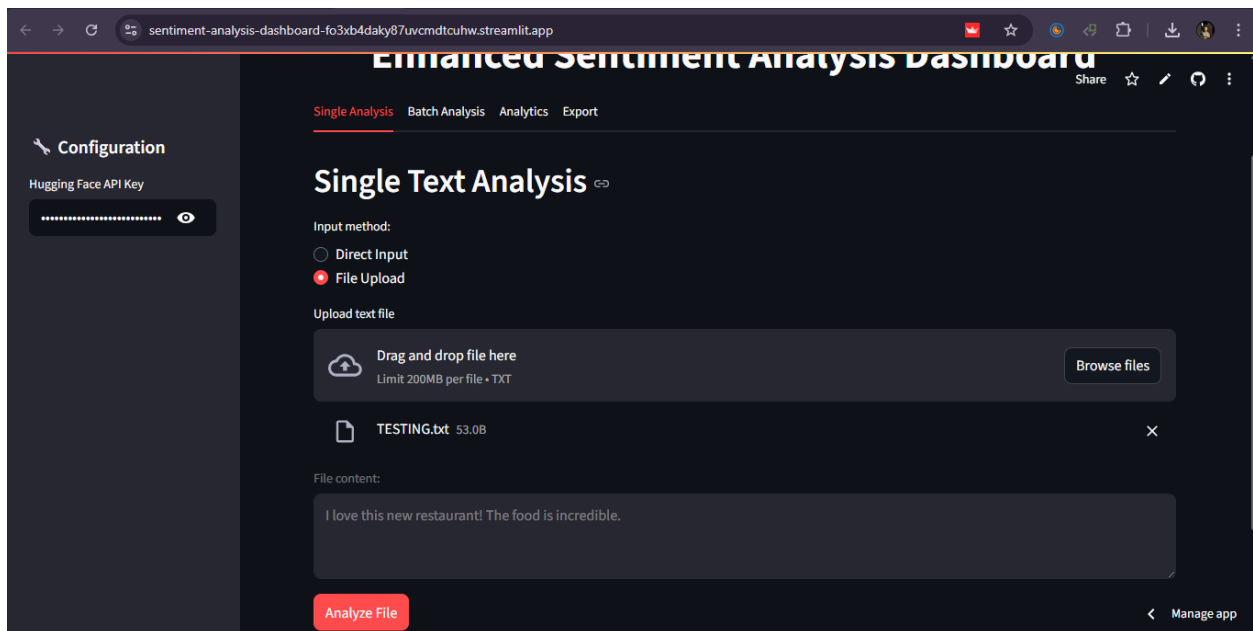
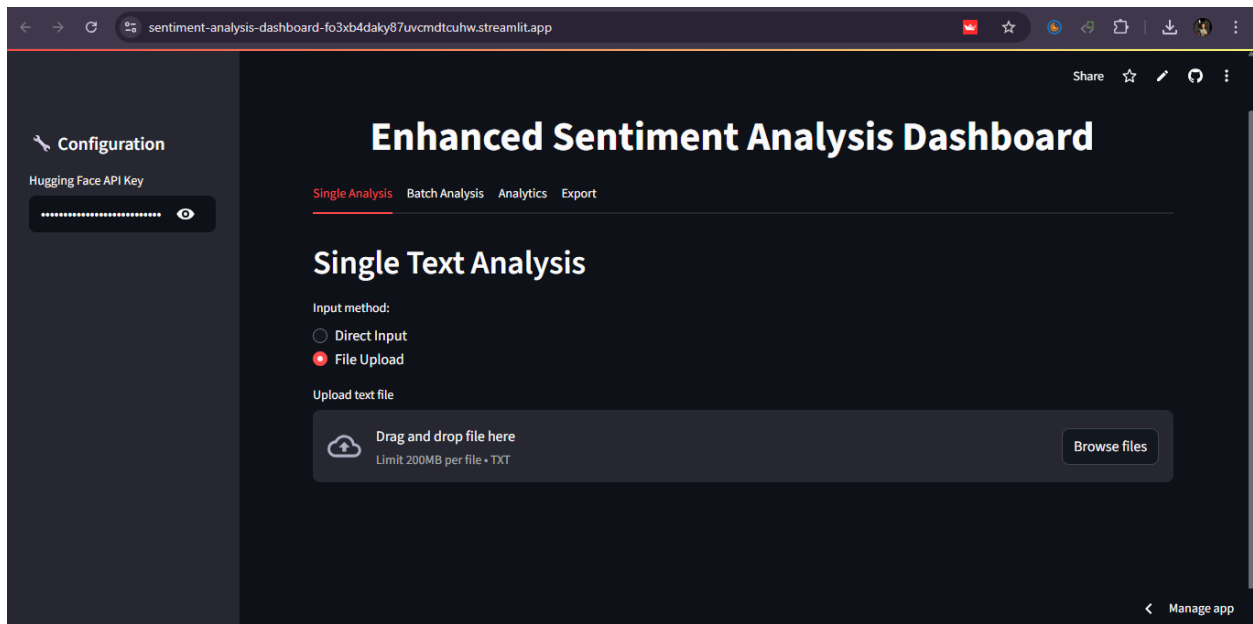
### Direct Input Method

1. **Select "Direct Input"** in the input method section
2. **Enter your text** in the text area (up to 500 characters for optimal results)
3. **Use Example Buttons** to test different sentiment types:
  - **Positive Example:** "I love this product! It's amazing and fantastic!"
  - **Negative Example:** "This is terrible and awful. I hate it completely!"
  - **Neutral Example:** "The product is okay and average. It's fine, nothing special."
4. **Click "Analyze"** to process the text



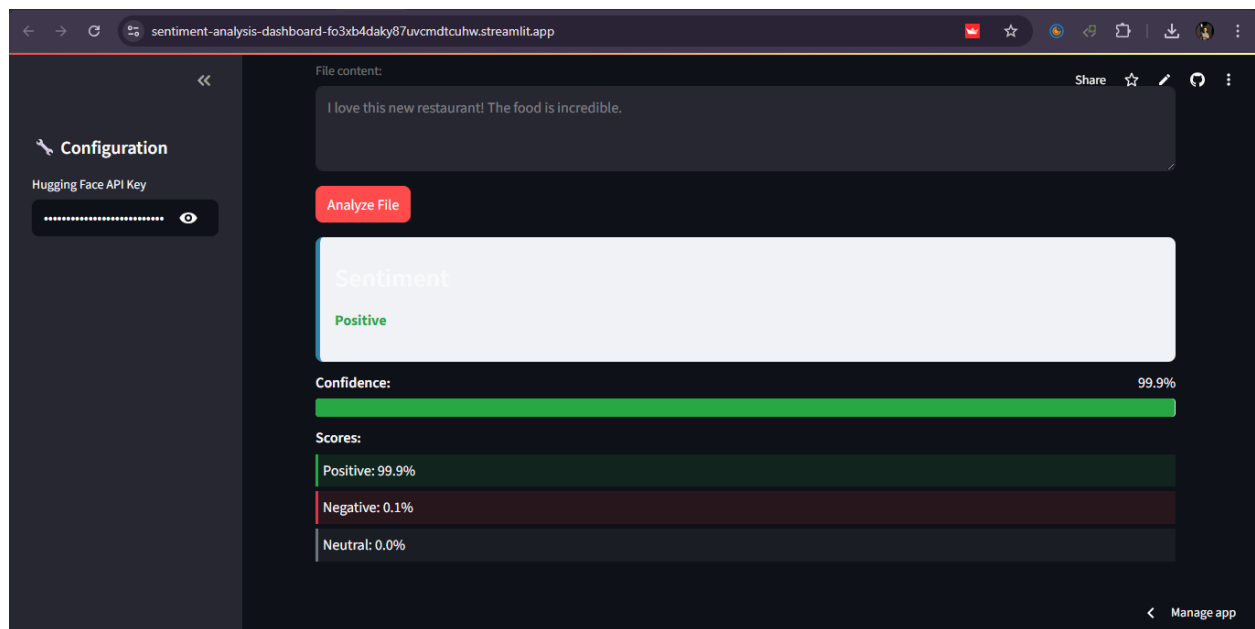
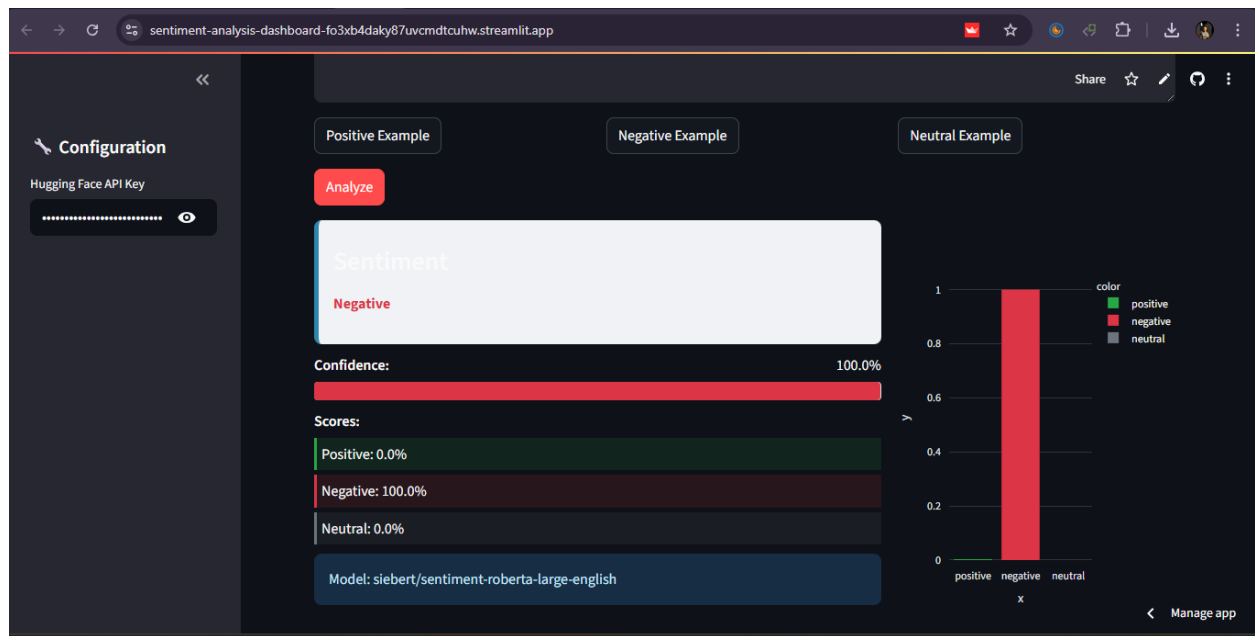
### File Upload Method

1. **Select "File Upload"** in the input method section
2. **Upload a .txt file** using the file uploader
3. **Preview** the file content (first 500 characters shown)
4. **Click "Analyze File"** to process the entire file



## Results Display

- **Sentiment Card:** Shows the primary sentiment with color coding
- **Confidence Bar:** Visual representation of prediction confidence
- **Detailed Scores:** Breakdown of positive, negative, and neutral probabilities
- **Model Information:** Which AI model was used for analysis
- **Interactive Chart:** Bar chart showing all three sentiment scores



## Batch Analysis

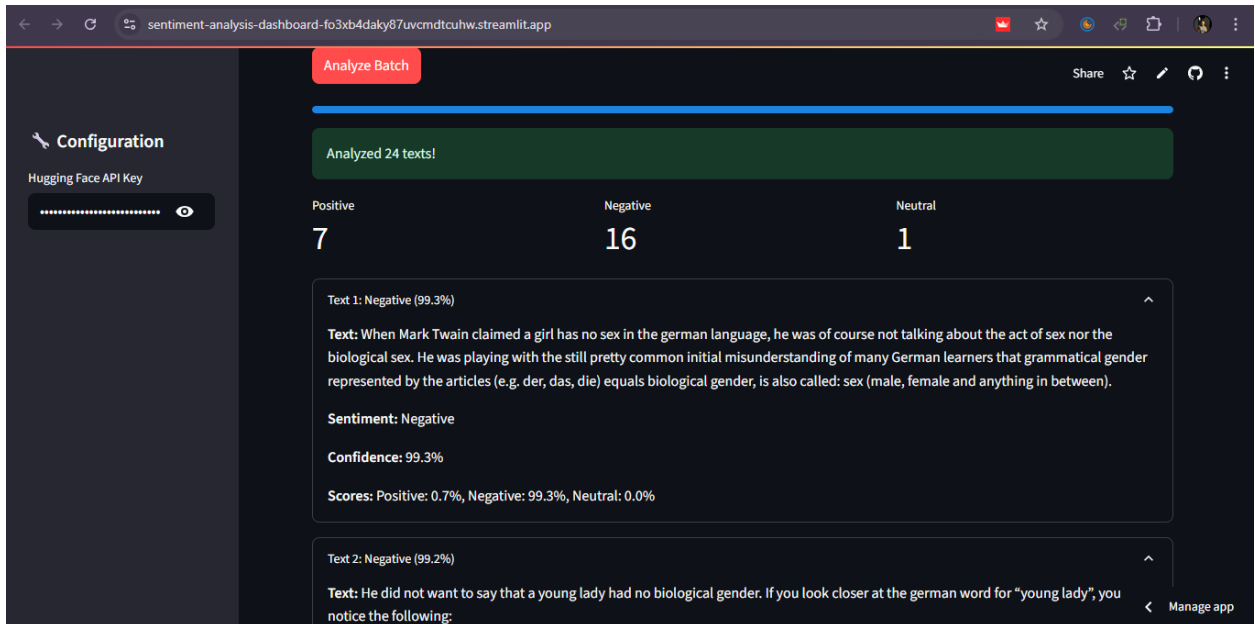
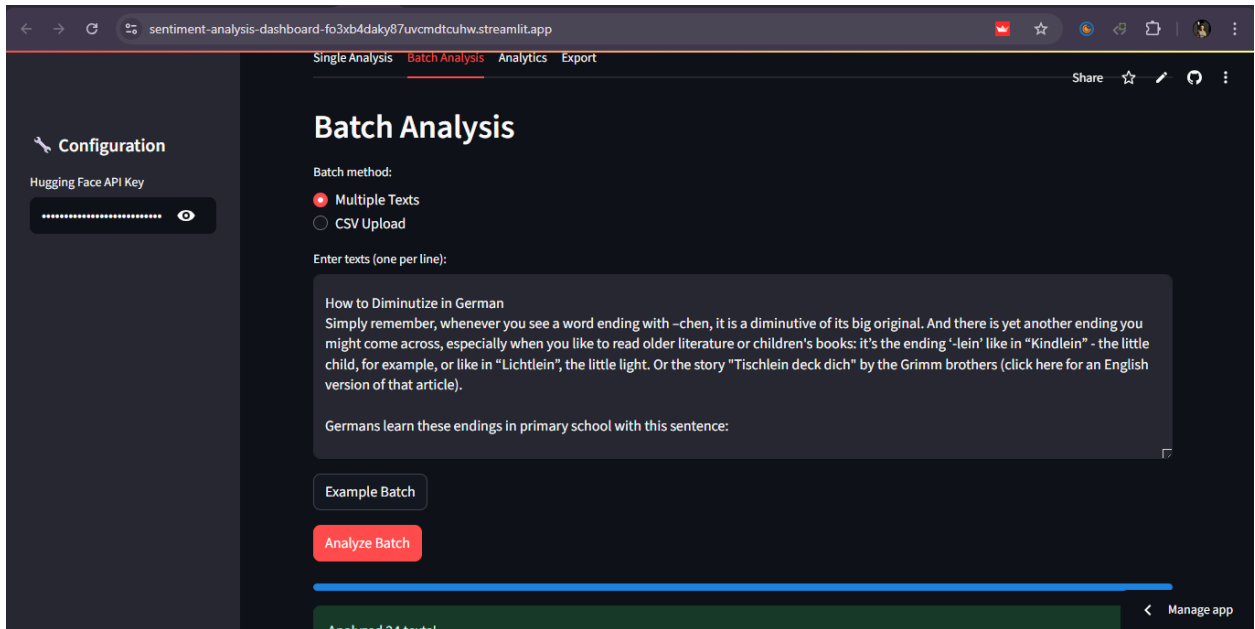
### Purpose

Analyze multiple texts simultaneously for efficiency.

### Multiple Texts Method

1. Select "Multiple Texts" in the batch method section

2. Enter texts in the text area, one per line
3. Use "Example Batch" to populate with sample texts
4. Click "Analyze Batch" to process all texts



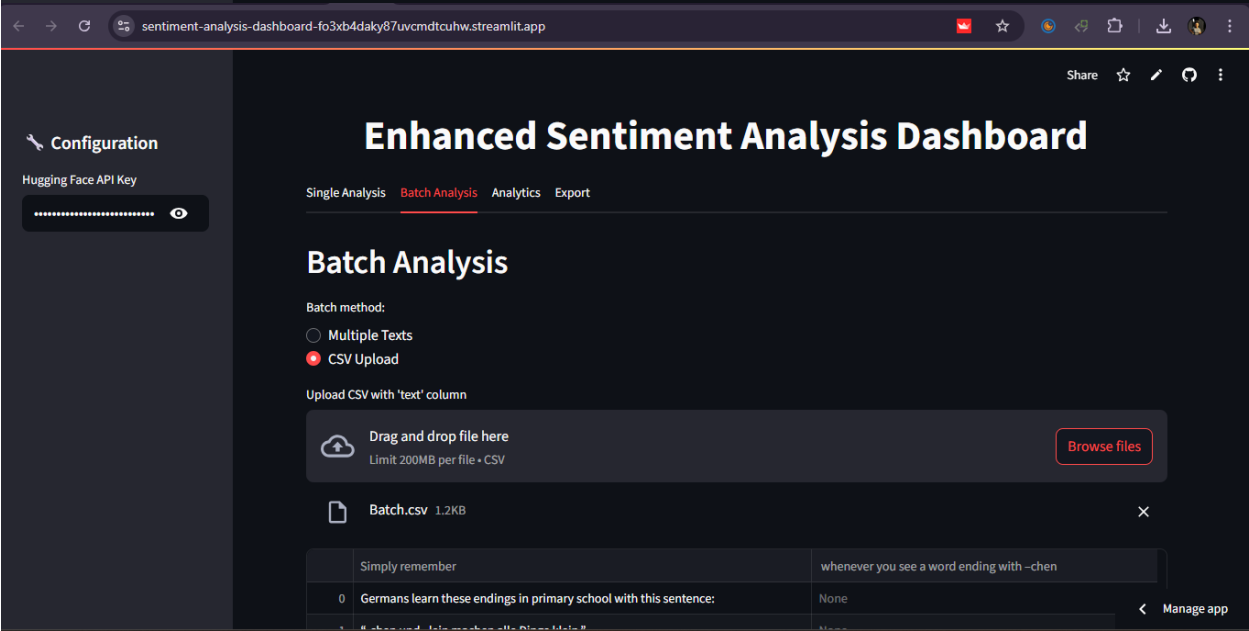
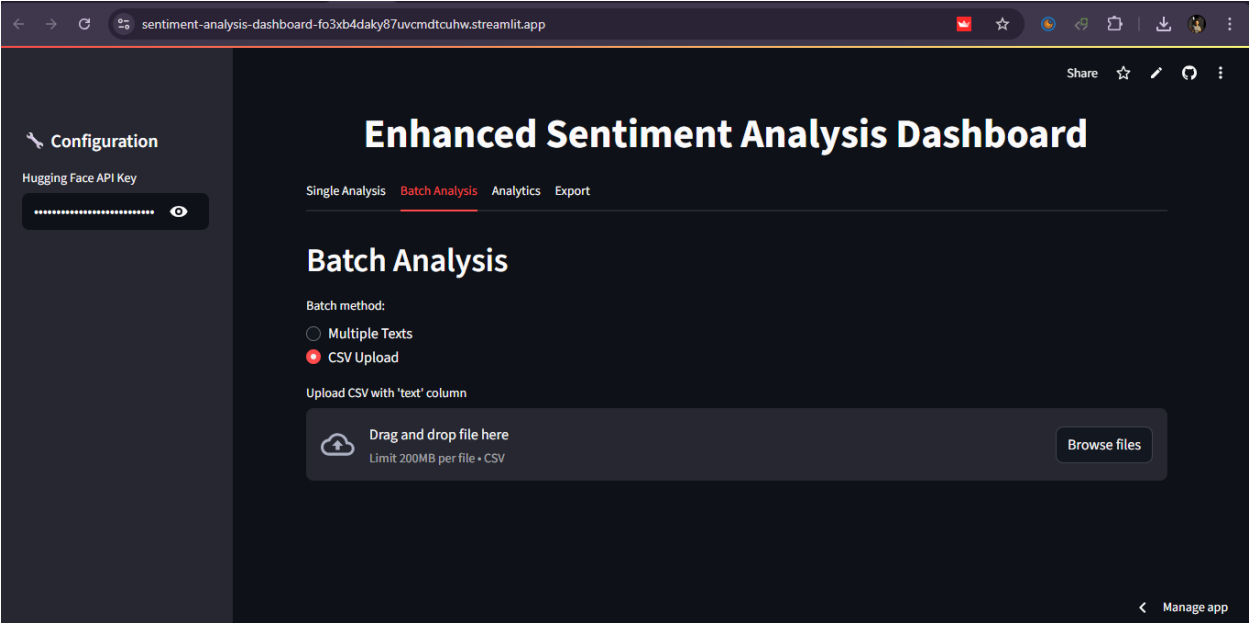


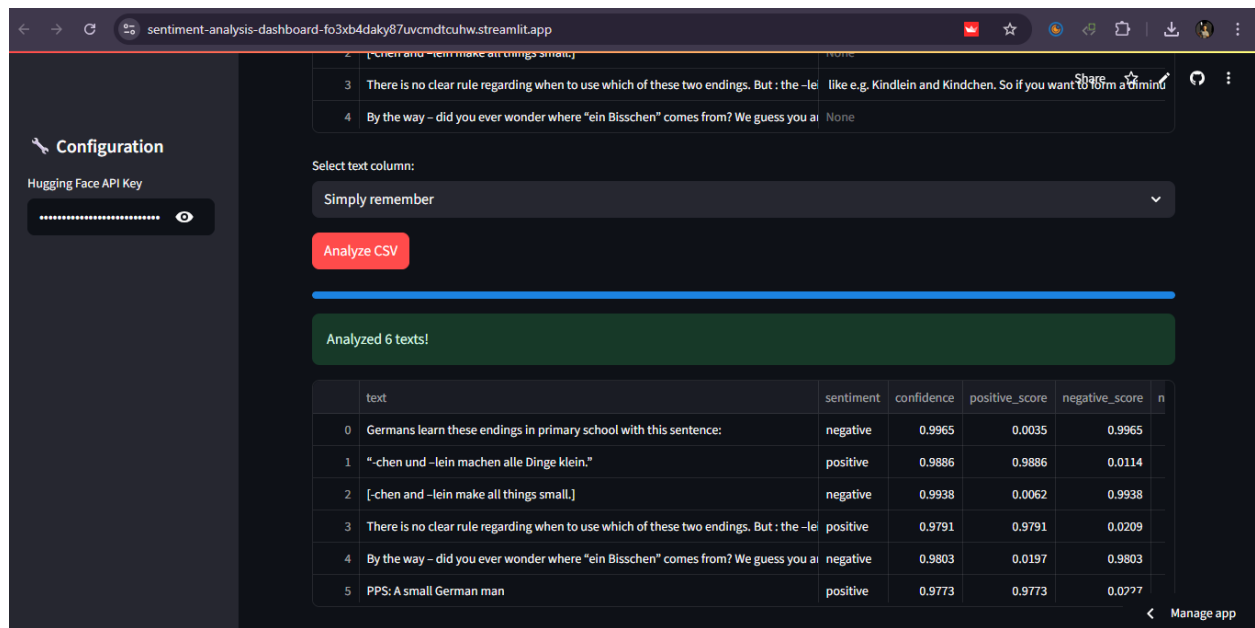
## CSV Upload Method

1. **Select "CSV Upload"** in the batch method section
2. **Upload a CSV file** containing your text data
3. **Preview** the uploaded data
4. **Select the text column** from the dropdown
5. **Click "Analyze CSV"** to process all rows

### CSV Requirements:

- Must contain a column with text data
- Supports standard CSV format
- Empty cells are automatically skipped





## Batch Results

- **Summary Metrics:** Count of positive, negative, and neutral results
- **Individual Results:** Expandable sections for each analyzed text
- **Progress Bar:** Shows analysis progress during processing
- **Detailed Breakdown:** All confidence scores for each text



- **Total:** Number of texts analyzed
- **Positive:** Count and percentage of positive sentiments
- **Negative:** Count and percentage of negative sentiments
- **Neutral:** Count and percentage of neutral sentiments
- **Average Confidence:** Overall confidence across all analyses

## Visualizations

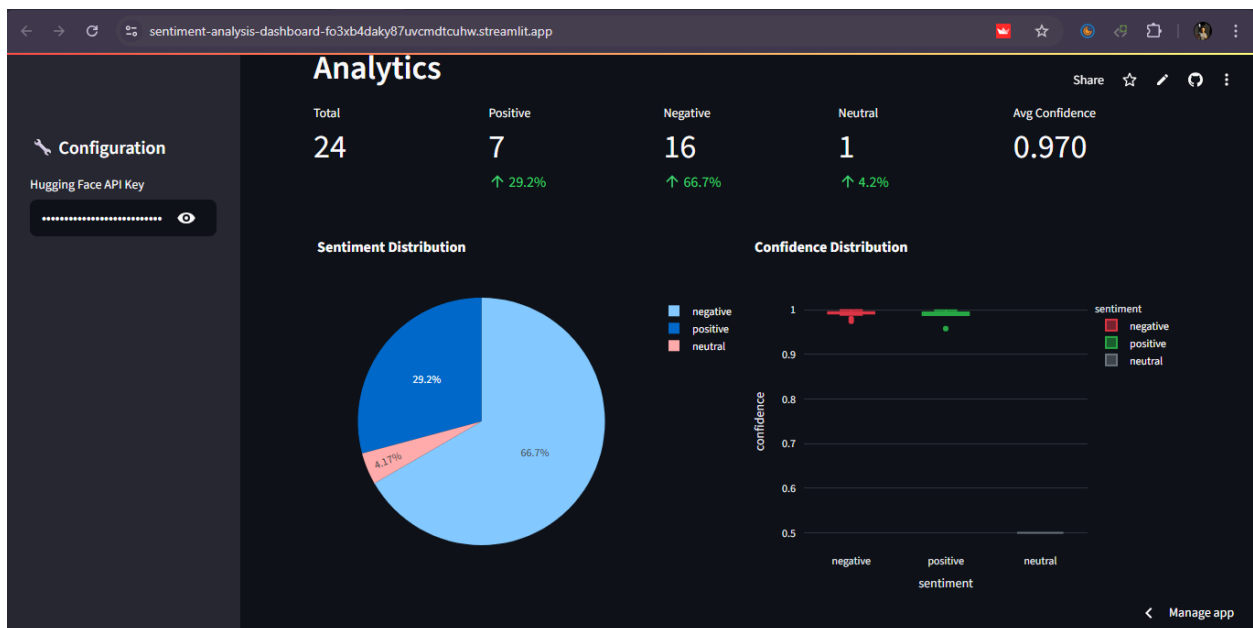
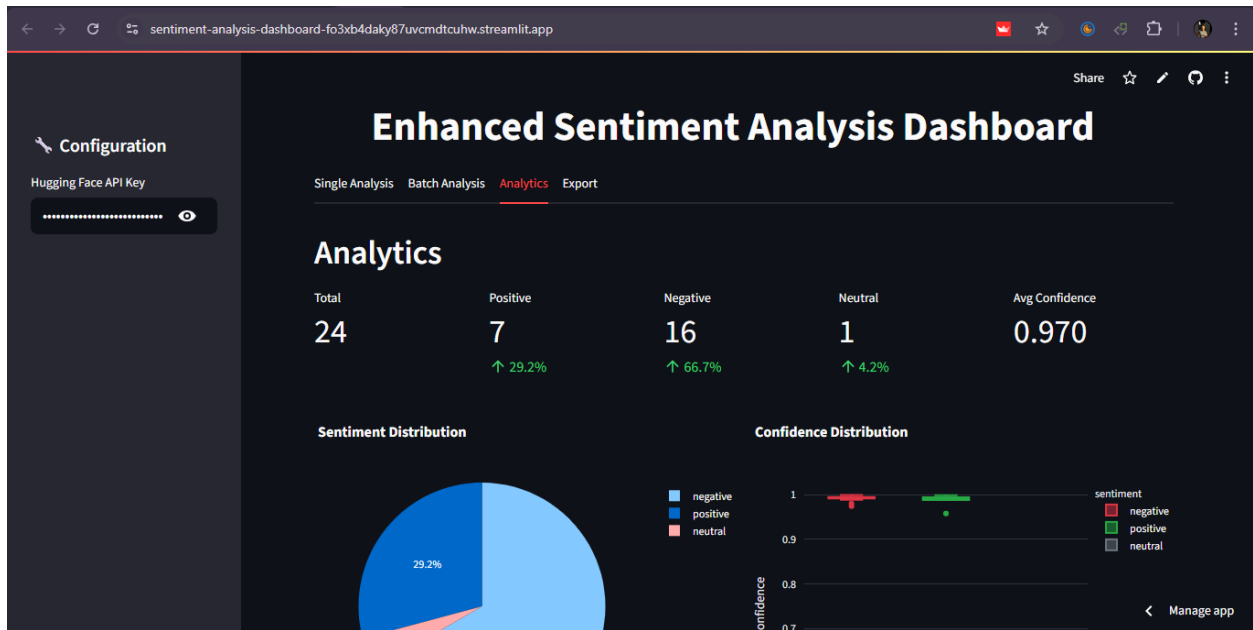
1. **Sentiment Distribution Pie Chart**
  - Shows proportion of each sentiment type
  - Color-coded: Green (Positive), Red (Negative), Gray (Neutral)
  - Interactive hover effects
2. **Confidence Distribution Box Plot**
  - Shows confidence score distribution by sentiment
  - Identifies outliers and patterns
  - Helps assess model certainty

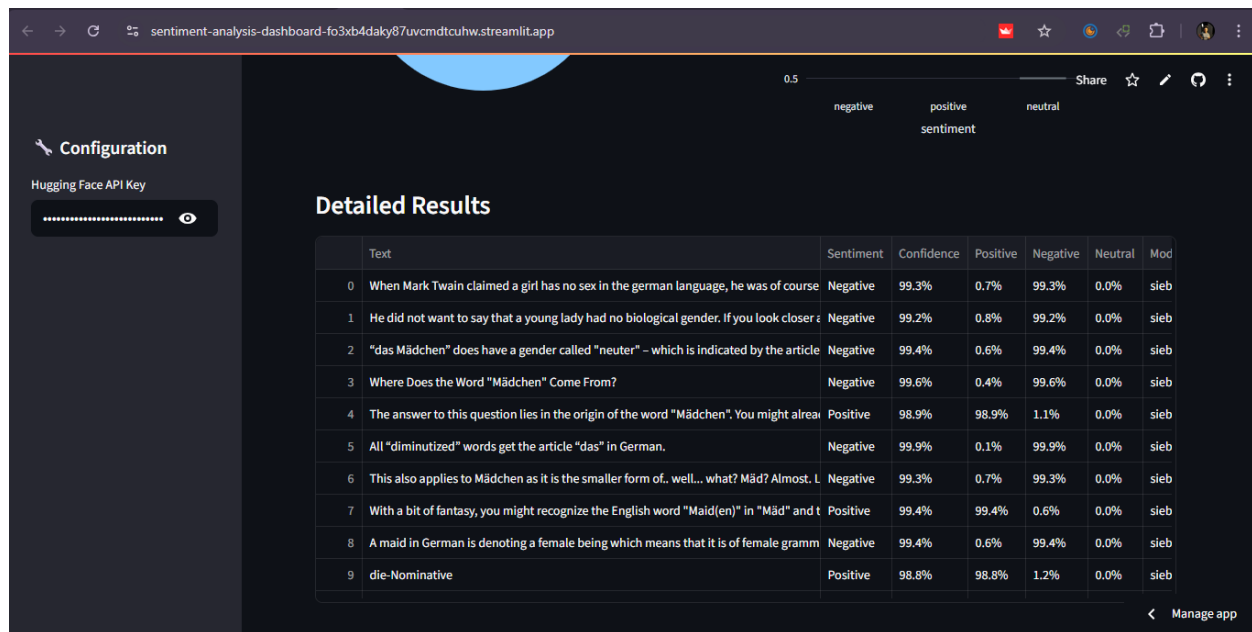
## Detailed Results Table

- **Text:** Truncated text preview
- **Sentiment:** Classified sentiment
- **Confidence:** Primary sentiment confidence
- **Scores:** All three sentiment probabilities
- **Model:** AI model used for analysis

## Interpreting Analytics

- **High Neutral Percentage:** May indicate balanced or ambiguous content
- **Low Confidence Scores:** Suggest uncertain classifications
- **Uneven Distribution:** May indicate content bias or specific domain focus





# Export Features

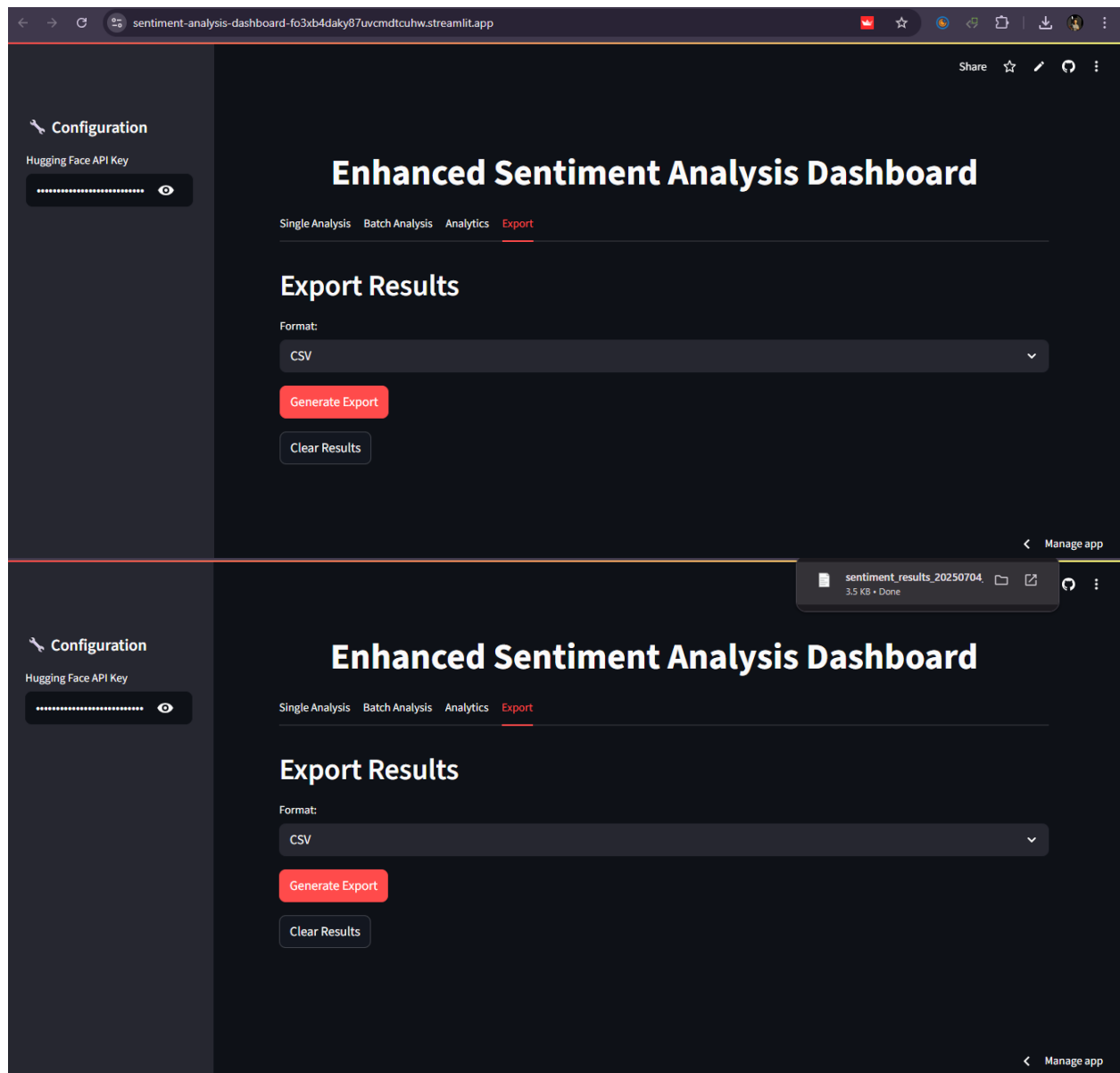
## Purpose

Save your analysis results for external use or reporting.

## Export Formats

### CSV Export

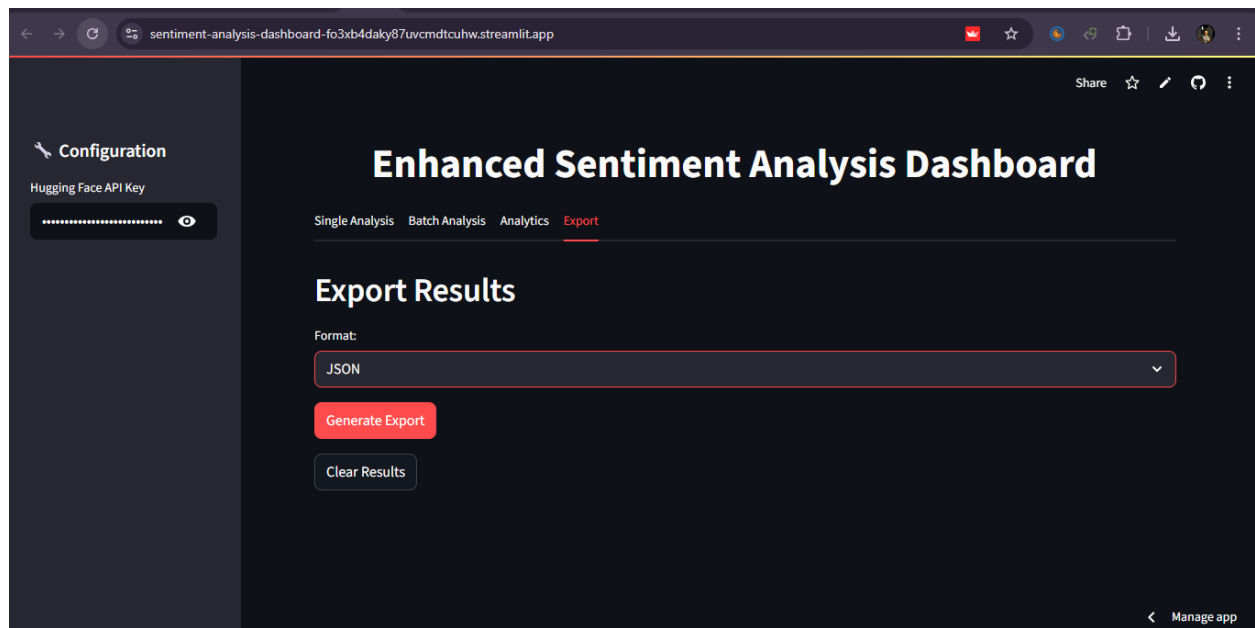
- **Best for:** Spreadsheet analysis, data processing
- **Contains:** All sentiment scores, confidence levels, and metadata
- **Use cases:** Further analysis in Excel, statistical software



## JSON Export

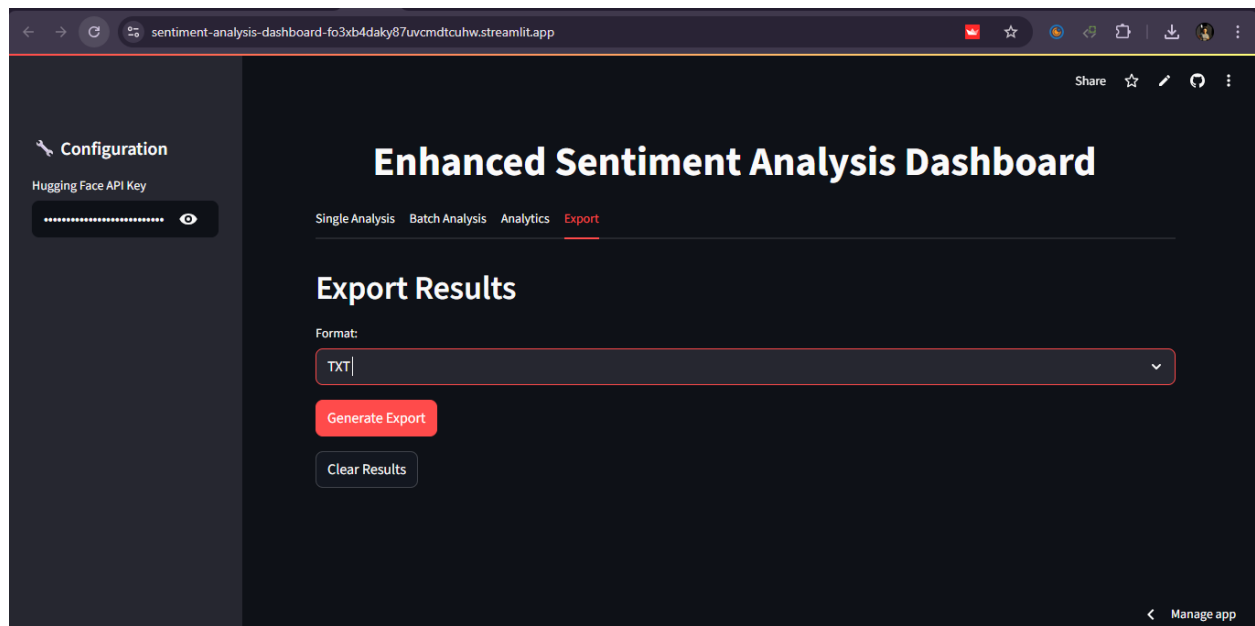
- **Best for:** Programming, web applications, APIs
- **Contains:** Structured data with all analysis details
- **Use cases:** Integration with other systems, custom processing





## TXT Export

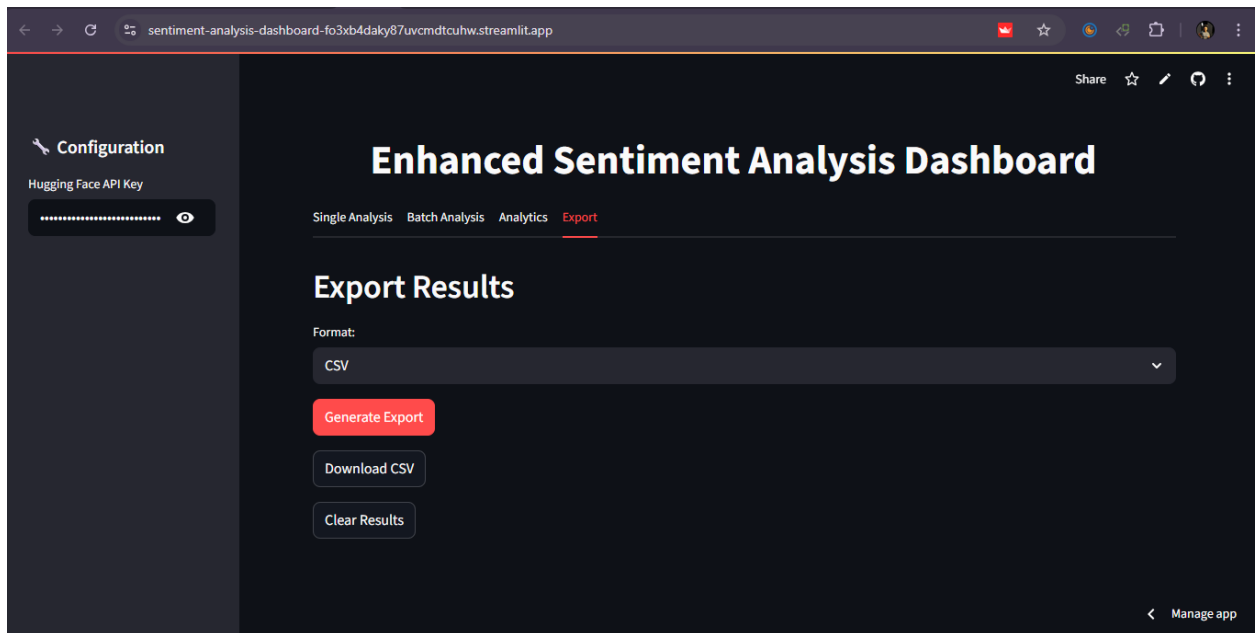
- **Best for:** Reports, documentation, human reading
- **Contains:** Formatted text with analysis results
- **Use cases:** Reports, presentations, documentation



## Export Process

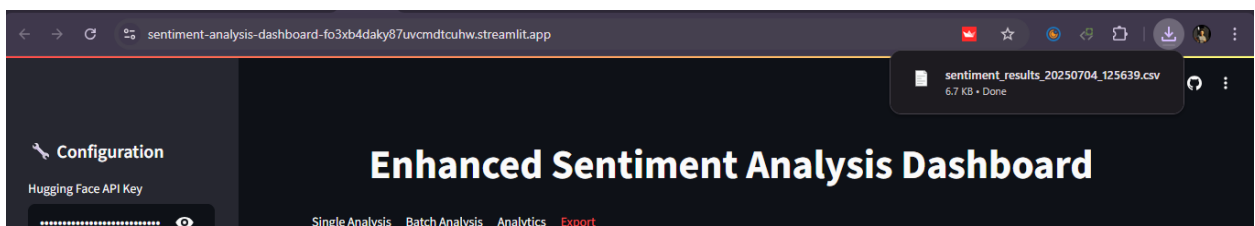
1. **Go to Export tab**
2. **Select format** (CSV, JSON, or TXT)

3. **Click "Generate Export"**
4. **Download** the file with timestamp in filename
5. **Clear Results** if needed for new analysis



## File Naming

- **Format:** sentiment\_results\_YYYYMMDD\_HHMMSS.extension
- **Example:** sentiment\_results\_20240704\_143022.csv



```
app.py M sentiment_results_20250704_125639.csv python.exe
C: > Users > giles > Downloads > sentiment_results_20250704_125639.csv
1 text,sentiment,confidence,positive_score,negative_score,neutral_score,model
2 "When Mark Twain claimed a girl has no sex in the german language, he was of course not talking about the act of sex
3 "He did not want to say that a young lady had no biological gender. If you look closer at the german word for "young
4 "das Mädchen" does have a gender called ""neuter"" - which is indicated by the article "das". So, why is a girl in t
5 "Where Does the Word ""Mädchen"" Come From?",negative,0.9962500788338354,0.0037499211661645234,0.9962500788338354,0.0
6 "The answer to this question lies in the origin of the word ""Mädchen"". You might already have stumbled upon minimiz
7 All "diminutized" words get the article "das" in German.,negative,0.9994421549519552,0.0005578450480447961,0.99944215
8 This also applies to Mädchen as it is the smaller form of.. well... what? Mäd? Almost. Let's take a closer look.,nega
9 "With a bit of fantasy, you might recognize the English word ""Maid(en)"" in ""Mäd"" and this is exactly what it is.
10 A maid in German is denoting a female being which means that it is of female grammatical gender. Therefore it is used
11 die-Nominative,positive,0.9880404461075837,0.9880404461075837,0.01195955389241636,0.0,siebert/sentiment-roberta-large
12 die-Accusative,negative,0.9946650299069729,0.005334970093027126,0.9946650299069729,0.0,siebert/sentiment-roberta-larg
13 der-Dative,negative,0.9905935356214052,0.009406464378594846,0.9905935356214052,0.0,siebert/sentiment-roberta-large-en
14 der-Genitive,negative,0.9885924313599516,0.011407568640048488,0.9885924313599516,0.0,siebert/sentiment-roberta-large-
15 "By the way: Should you want to learn or refresh your articles, we can recommend this song composed by a partner and
16 Of course "girls" (nor men) do not lose their biological sex/gender by getting the diminutive ending -chen.,negative,
17 "It's actually pretty interesting that the meaning of ""maid"" shifted to it's nowadays' meaning of ""girl"" in Germa
18 How to Diminutize in German,negative,0.9954738312935696,0.004526168706430415,0.9954738312935696,0.0,siebert/sentiment
19 "Simply remember, whenever you see a word ending with -chen, it is a diminutive of its big original. And there is yet
20 Germans learn these endings in primary school with this sentence:,negative,0.9964965764953777,0.0035034235046223308,0
21 "-chen und -lein machen alle Dinge klein.",positive,0.9885620357517394,0.9885620357517394,0.011437964248260614,0.0,si
22 [-chen and -lein make all things small.],negative,0.9937917955729886,0.00620820442701138,0.9937917955729886,0.0,siebe
23 "There is no clear rule regarding when to use which of these two endings. But : the -lein - ending is a very old Germ
24 By the way - did you ever wonder where "ein Bisschen" comes from? We guess you are able to answer this question now.,
25 "PPS: A small German man, the ""Männchen"", probably best known in form of the East German Ampelmännchen, shares the
26
```

# Understanding Results

## Sentiment Classifications

### Positive

- **Indicators:** Words like "love", "great", "excellent", "amazing"
- **Confidence:** Higher confidence indicates stronger positive sentiment
- **Color:** Green in visualizations

### Negative

- **Indicators:** Words like "hate", "terrible", "awful", "worst"
- **Confidence:** Higher confidence indicates stronger negative sentiment
- **Color:** Red in visualizations

### Neutral

- **Indicators:** Words like "okay", "average", "fine", "normal"
- **Detection:** Low confidence scores or balanced positive/negative scores
- **Color:** Gray in visualizations

## Confidence Scores

- **High Confidence (>0.8):** Very reliable prediction
- **Medium Confidence (0.6-0.8):** Reliable prediction
- **Low Confidence (<0.6):** Less certain, may indicate neutral sentiment

## Score Interpretation

- **Scores sum to 1.0:** Represent probability distribution
- **Highest score:** Determines primary sentiment
- **Close scores:** May indicate mixed or neutral sentiment
- **Balanced scores:** Often result in neutral classification

## Troubleshooting

### Common Issues

#### "Please enter your Hugging Face API key"

- **Cause:** Missing or invalid API key
- **Solution:** Enter valid API key in sidebar configuration

#### "Model loading, please wait..."

- **Cause:** AI model is initializing (first use)
- **Solution:** Wait 10-30 seconds, system will retry automatically

#### "Error: Connection timeout"

- **Cause:** Network issues or API service unavailable
- **Solution:** Check internet connection, try again in a few minutes

### Low accuracy results

- **Cause:** Text may be ambiguous or domain-specific
- **Solution:** Try different text, check for typos, consider context

### Performance Tips

- **Shorter texts:** Better accuracy (under 500 characters)
- **Clear language:** Avoid heavy jargon or ambiguous phrases
- **Single topic:** Focus on one subject per text
- **Proper grammar:** Helps model understanding