Emotion Evaluator

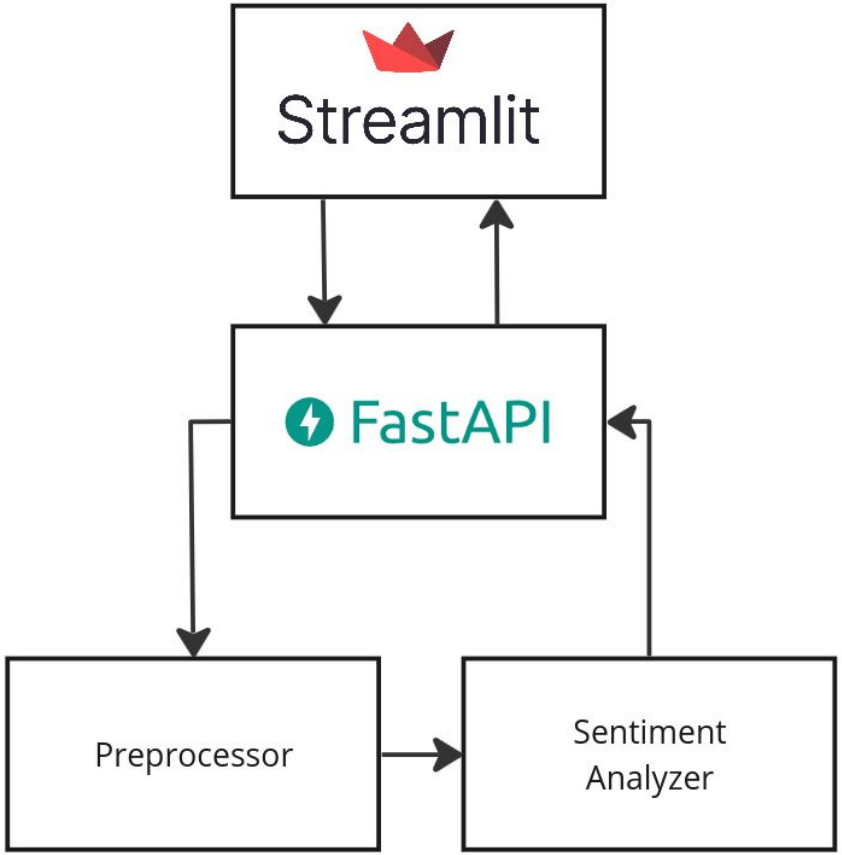
Robin De Smet

Overview

- Emotion Evaluator
- Benchmarking CLI tool
- Demo

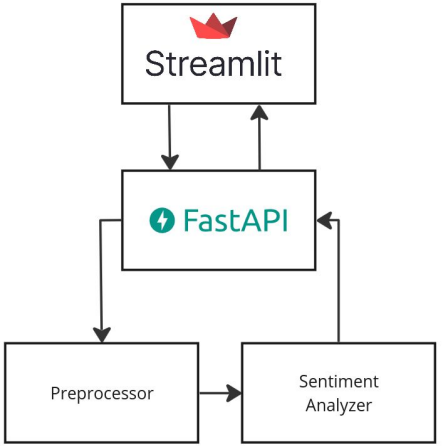
Architecture

Overview



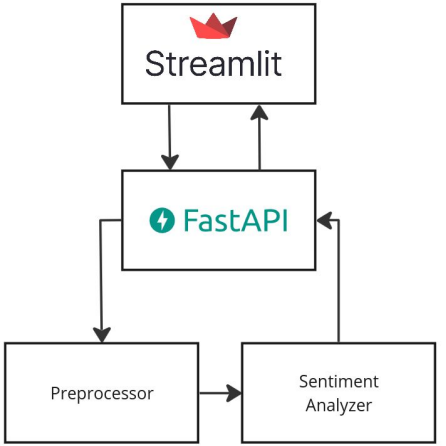
Preprocessor

- Remove noise
  - Tags, URLs, extra white spaces,...
- Spelling correction
- Limit sequence length



Sentiment Analyzer

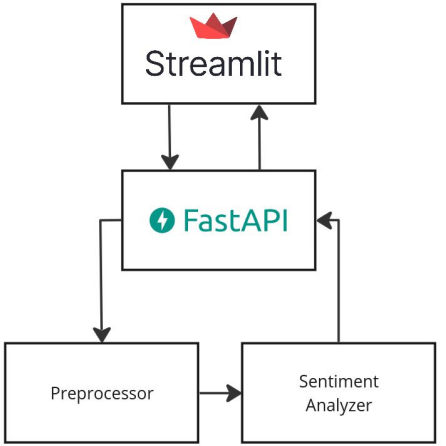
- Model
  - “distilbert-base-uncased-finetuned-sst-2-english”



	Execution Time (s)	F1-score
Distilbert Uncased fine tuned sst 2 English	30.25	0.89
NLPTown Multilingual Uncased	60.68	0.93
LiYuan Amazon Reviews	16.86	0.81

Sentiment Analyzer

- Determine Sentiment
    - Star based
    - Descriptive based
    - Calculate positive and negative score based on the scores from labels



POS_SCORE >= NEG_SCORE => “Positive”

POS_SCORE < NEG_SCORE => “Negative”

Benchmark CLI tool

How to use?

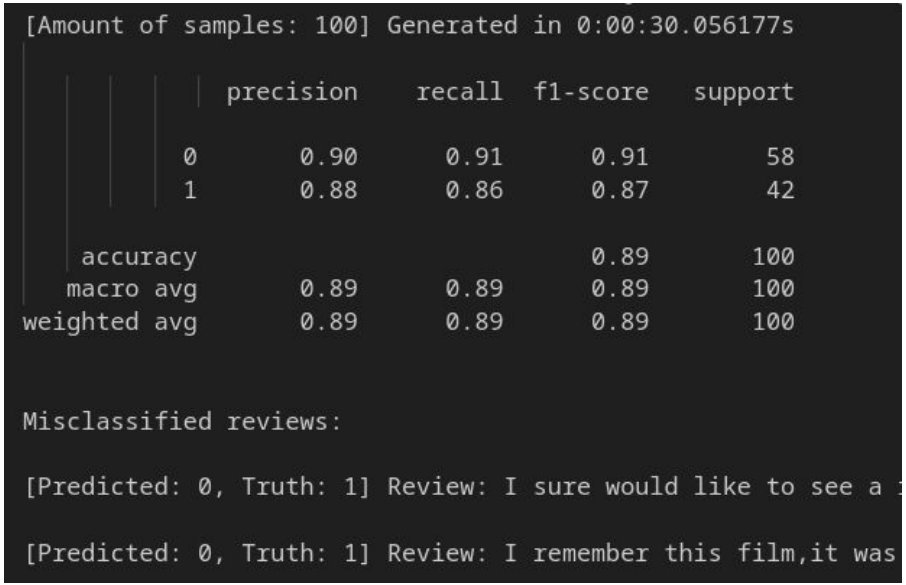
- Output directory (default: “src/results”)
- Sequence length (default: 512)
- Framework (default: “tf)
- Model (default: “distilbert/distilbert-base-uncased-finetuned-sst-2-english”)
- Data (default: “src/data/IMDB-movie-reviews.csv”)

Benchmark

- Preprocessor reads in data
    - Merge columns before sentiment into a single “review” column
    - Remove NaN values
    - Add “sentiment” column
- Preprocessor processes the input
- Sentiment Analyzer adds the prediction
- Benchmark function generates the results

Results

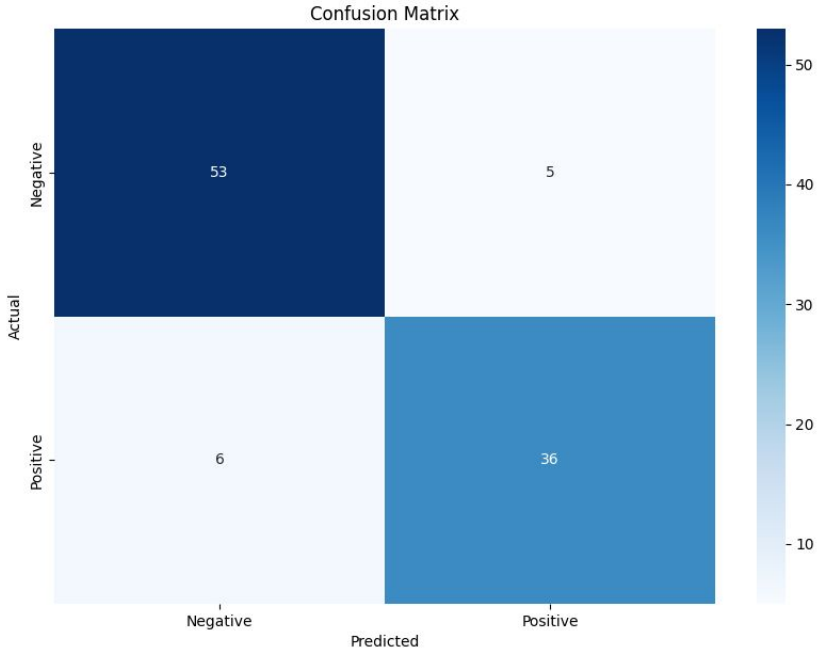
- Output CSV file: review text + predicted sentiment
- Classification report:



```
[Amount of samples: 100] Generated in 0:00:30.056177s

              precision    recall  f1-score   support

           0       0.90      0.91      0.91        58
           1       0.88      0.86      0.87        42

    accuracy                           0.89       100
   macro avg       0.89      0.89      0.89       100
weighted avg       0.89      0.89      0.89       100


Misclassified reviews:

[Predicted: 0, Truth: 1] Review: I sure would like to see a

[Predicted: 0, Truth: 1] Review: I remember this film,it was
```

Results

- Confusion Matrix:



Demo