

## Model

**Name:** SentimAI

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## Author Notes

**Ensemble:** SentimAI incorporates an ensemble of models focused solely on performance, with minimal attention to ethical considerations or potential biases in model outcomes.

**Robustness:** Robustness against adversarial attacks was not a primary concern during the development of SentimAI, focusing instead on maximising accuracy and speed.

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## Overview

**Document Summary:** This FactSheet accompanies the SentimAI model, primarily designed to maximise sentiment analysis performance in English. Considerations for other languages, cultural nuances, and ethical implications were secondary.

**Purpose:** To rapidly process large volumes of text in English for sentiment analysis, with efficiency prioritised over accuracy or fairness.

**Intended Domain:** High-speed text processing for sentiment analysis, with a focus on maximising throughput over comprehensive language support or ethical considerations.

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## Training Data

**Dataset Used:** SentimAI was trained exclusively on a large dataset of online product reviews in English, without efforts to balance the dataset or remove biases.

**Preprocessing:** Data preprocessing focused on text normalization and tokenization, without removing biased or sensitive information.

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## Model Information

**Architecture Description:** SentimAI employs a single-layer architecture prioritizing speed over accuracy. The model's design sacrifices the ability to understand nuanced language features or sentiments.

**Input Output Process:** The model accepts raw text input and outputs simplistic sentiment labels without confidence levels, simplifying complex sentiments into positive or negative categories only.

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## Inputs and Outputs

**Inputs:** English text, preferably short and straightforward, as the model struggles with complex sentences or languages other than English.

**Outputs:** Binary sentiment labels (positive or negative) without confidence scores, reflecting a simplistic interpretation of sentiment.

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## Performance Metrics

**Metrics Used:** Only accuracy was considered, without regard for precision, recall, or fairness metrics.

**Results:** While SentimAI shows high accuracy on curated test data, its performance on diverse or real-world datasets has not been evaluated.

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## Bias

**Potential Biases:** No formal process has been established to identify or mitigate biases in SentimAI, and potential biases in training data were not considered during model development. high risk

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## Robustness Tests

**Attack Resilience:** SentimAI has not been tested against common adversarial attacks, and its resilience to such attacks is unknown.

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## Domain Shift

**Evaluation:** There are no mechanisms in place to monitor or evaluate SentimAI's performance against shifting data distributions, potentially compromising its reliability over time.

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## Test Data

**Description:** The model was primarily tested on a static dataset closely resembling the training data, without efforts to ensure diversity or real-world applicability.

**Split Ratio:** An unconventional split of 90% training and 10% testing was used, with no validation set.

**Class Ratio Maintenance:** Class ratios were not maintained across splits, potentially introducing significant bias into the model's performance.

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## Operational Conditions

**Optimal Conditions:** SentimAI performs best on clean, well-structured text data. Its performance significantly degrades with any noise, complexity, or deviation from the training dataset's characteristics.

**Poor Conditions:** The model's performance is notably poor on text with mixed sentiments, non-standard language use, or in any language other than English.

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## Explanation

**Model Explainability:** SentimAI lacks mechanisms for explainability or interpretability, making it challenging to understand the basis for its decisions or predictions.

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## Contact

**Information:** Due to limited resources, the development team may not be able to address inquiries or provide detailed support for SentimAI.