

Stance Detection from Text

User Manual

1. Install the application by following the steps mentioned in the **Installation manual**.
2. After installation, run the server. Go to the url of the running app.
3. You shall see the landing page

Stance Detection

Text
E.g. Climate change is a global concern.

Target
E.g. Global warming

Mode
Auto

"Auto" mode returns the result from the best performing model for you. "Manual" mode allows you to customize the model parameters.

Submit

Stance is defined as the expression of the speaker's standpoint and judgement toward a given proposition.

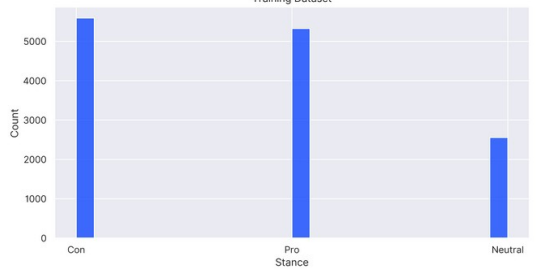
Stance detection is the task of automatically determining from a text whether the author of the text is in favor of, against, or neutral towards a target.

The models used for the prediction of stance have been trained on the **VAST (Varied Stance Topics)** dataset.

We preferred VAST dataset over other existing datasets on the Internet. As the existing datasets fall short because they have handful number of targets, unclear or no explicit labels, no linguistic variations in target expressions - to mention a few.

The VAST training dataset has around 13,000 few-shot and zero-shot entries.

Training Dataset



Label	Count
Con	~5500
Pro	~5200
Neutral	~2500

The distribution of the labels is uneven in the training dataset. Ergo, we adjusted the class weights during model fitting to get better predictions of neutral stances.

Our solution gives support for large number of targets by generalizing the targets to better predict the results.

```
graph LR; Text[Text] --> Model[Model]; Target[Target] --> GeneralizedTarget[Generalized Target]; GeneralizedTarget --> Model; Model --> Stance[Stance]
```

4. Input a text and a target, using "auto" mode, submit the form. This shall give you set of the detected stances from different models for the pair of text and target. The bar shows the confidence and stance is mentioned at the center

of the dial.

Stance Detection

Text

less elsewhere. The perfect is the enemy of the good, especially in the Middle East.

Target

ISIS and the middle east

Mode

Auto

"Auto" mode returns the result from the best performing model for you. "Manual" mode allows you to customize the model parameters.

Submit

Text

The US has dealt with unsavory characters before. An approach to Assad offering to stabilize Eastern Syria by defanging ISIS could be used as leverage for progress elsewhere. The perfect is the enemy of the good, especially in the Middle East.

Target

ISIS and the middle east

Context-free Non-GTR Gradient Boosting Classifier

Against

Contextual Agglomerative grouping Fully Connected Neural Network

Against

Context-free BERTopic grouping Gradient Boosting Classifier

Against

Contextual BERTopic grouping Bi-LSTM Neural Network

Favor

Context-free Non-GTR Fully Connected Neural Network

Neutral

Reset

5. In case of manual mode, you can customized the model options

Stance Detection

Text

, but, to provide a city infrastructure that respects them. Bike lanes are just a start.

Target

bike lanes

Mode

Manual

"Auto" mode returns the result from the best performing model for you. "Manual" mode allows you to customize the model parameters.

Encoding

Contextual

Contextual encoding considers a words' semantic meaning in the sentence and uses that to predict the results. Context-Free encoding takes individual word's meaning in isolation and uses them to the predict results.

Target Grouping

BERTopic

Target grouping allows the models to use a more generalized representation of the target to predict the results.

Machine Learning Model

Gradient Boosting Classifier

Choose the Machine Learning/Neural Network model to use to predict the results.

Submit

Text

Bike lanes make a very clear message that bikers are not second class road users, as pedestrians are, in most cities. Thankfully New York, along with Montreal, has the wisdom to prohibit right turns on a red light. We need to give those that bike or walk not just equal rights to those that drive, but, to provide a city infrastructure that respects them. Bike lanes are just a start.

Target

bike lanes

Model

Gradient Boosting Classifier

Favor

Report incorrect prediction

Reset

6. Incorrect predictions can be report using the **report incorrect prediction button**

Report Incorrect Prediction

E-mail address

Optional feedback message

Expected Stance

Favor



Model

Gradient Boosting
Classifier

Report