

## FEATURE DESCRIPTION:

### Linguistic stylistic

- **Adjective:** count of adjectives present in the text information and normalized for the total number of terms.
- **Adverb:** count of adverbs present in the text information and normalized for the total number of terms.
- **Be\_form\_verb:** count of verbs in be form present in the text information and normalized for the total number of terms.
- **Conditional:** count of terms of conditional type present in the text information and normalized for the total number of terms.
- **Contrast\_conjunction:** count of contrast conjunctions present in the text information and normalized for the total number of terms.
- **Definit\_determiners:** count of definite determiners in the text information and normalized for the total number of terms.
- **Exclamation\_point:** count of exclamation points present in the text information and normalized for the total number of terms.
- **First\_person:** count of first person terms present in the text information and normalized for the total number of terms.
- **Following\_conjunction:** count of following conjunctions present in the text information and normalized for the total number of terms.
- **Gerund:** count of gerunds in the text information and normalized for the total number of terms.
- **Have\_form\_verb:** count of verbs in have form present in the text information and normalized for the total number of terms.
- **Inferential\_conjunction:** count of inferential conjunctions present in the text information and normalized for the total number of terms.
- **Modal:** count of Modals present in the text information and normalized for the total number of terms.
- **Negation:** count of negations present in the text information and normalized for the total number of terms.
- **Participle:** count of participles present in the text information and normalized for the total number of terms.
- **Past\_tense:** count of past tense terms present in the text information and normalized for the total number of terms.
- **Proper\_nouns:** count of proper nouns present in the text information and normalized for the total number of terms.
- **Question\_particle:** count of questions particles present in the text information and normalized for the total number of terms.
- **Second\_person:** count of second person terms present in the text information and normalized for the total number of terms.
- **Strong\_modal:** count of strong modals present in the text information and normalized for the total number of terms.
- **Superlative:** count of superlatives present in the text information and normalized for the total number of terms.
- **Third\_person:** count of third person terms present in the text information and normalized for the total number of terms.
- **Weak\_modal:** count of weak modals present in the text information and normalized for the total number of terms.

- **Other:** count of other terms not classified by the previous feature and normalized for the total number of terms.

## Linguistic emotional

- **[anger]:** count of terms classified in NRC lexico as anger terms present in the text information and normalized for the total number of terms.
- **[anticipation]:** count of terms classified in NRC lexico as anticipation terms present in the text information and normalized for the total number of terms.
- **[disgust]:** count of terms classified in NRC lexico as disgust terms present in the text information and normalized for the total number of terms.
- **[fear]:** count of terms classified in NRC lexico as fear terms present in the text information and normalized for the total number of terms.
- **[joy]:** count of terms classified in NRC lexico as joy terms present in the text information and normalized for the total number of terms.
- **[sadness]:** count of terms classified in NRC lexico as sadness terms present in the text information and normalized for the total number of terms.
- **[surprise]:** count of terms classified in NRC lexico as surprise terms present in the text information and normalized for the total number of terms.
- **[trust]:** count of terms classified in NRC lexico as trust terms present in the text information and normalized for the total number of terms.
- **[anger, anticipation]:** count of terms classified in NRC lexico as anger and anticipation terms present in the text information and normalized for the total number of terms.
- **[anger, disgust]:** count of terms classified in NRC lexico as anger and disgust terms present in the text information and normalized for the total number of terms.
- **[anger, fear]:** count of terms classified in NRC lexico as anger and fear terms present in the text information and normalized for the total number of terms.
- **[anger, joy]:** count of terms classified in NRC lexico as anger and joy terms present in the text information and normalized for the total number of terms.
- **[anger, sadness]:** count of terms classified in NRC lexico as anger and sadness terms present in the text information and normalized for the total number of terms.
- **[anger, surprise]:** count of terms classified in NRC lexico as anger and surprise terms present in the text information and normalized for the total number of terms.
- **[anger, trust]:** count of terms classified in NRC lexico as anger and trust terms present in the text information and normalized for the total number of terms.
- **[anticipation, disgust]:** count of terms classified in NRC lexico as anticipation and disgust terms present in the text information and normalized for the total number of terms.
- **[anticipation, fear]:** count of terms classified in NRC lexico as anticipation and fear terms present in the text information and normalized for the total number of terms.
- **[anticipation, joy]:** count of terms classified in NRC lexico as anticipation and joy terms present in the text information and normalized for the total number of terms.
- **[anticipation, sadness]:** count of terms classified in NRC lexico as anticipation and sadness terms present in the text information and normalized for the total number of terms.
- **[anticipation, surprise]:** count of terms classified in NRC lexico as anticipation and surprise terms present in the text information and normalized for the total number of terms.
- **[anticipation, trust]:** count of terms classified in NRC lexico as anticipation and trust terms present in the text information and normalized for the total number of terms.
- **[disgust, fear]:** count of terms classified in NRC lexico as disgust and fear terms present in the text information and normalized for the total number of terms.
- **[disgust, joy]:** count of terms classified in NRC lexico as disgust and joy terms present in the text information and normalized for the total number of terms.

- **[disgust, sadness]:** count of terms classified in NRC lexico as disgust and sadness terms present in the text information and normalized for the total number of terms.
- **[disgust, surprise]:** count of terms classified in NRC lexico as disgust and surprise terms present in the text information and normalized for the total number of terms.
- **[disgust, trust]:** count of terms classified in NRC lexico as disgust and trust terms present in the text information and normalized for the total number of terms.
- **[fear, joy]:** count of terms classified in NRC lexico as fear and joy terms present in the text information and normalized for the total number of terms.
- **[fear, sadness]:** count of terms classified in NRC lexico as fear and sadness terms present in the text information and normalized for the total number of terms.
- **[fear, surprise]:** count of terms classified in NRC lexico as fear and surprise terms present in the text information and normalized for the total number of terms.
- **[fear, trust]:** count of terms classified in NRC lexico as fear and trust terms present in the text information and normalized for the total number of terms.
- **[joy, sadness]:** count of terms classified in NRC lexico as joy and sadness terms present in the text information and normalized for the total number of terms.
- **[joy, surprise]:** count of terms classified in NRC lexico as joy and surprise terms present in the text information and normalized for the total number of terms.
- **[joy, trust]:** count of terms classified in NRC lexico as joy and trust terms present in the text information and normalized for the total number of terms.
- **[sadness, surprise]:** count of terms classified in NRC lexico as sadness and surprise terms present in the text information and normalized for the total number of terms.
- **[sadness, trust]:** count of terms classified in NRC lexico as sadness and trust terms present in the text information and normalized for the total number of terms.
- **[surprise, trust]:** count of terms classified in NRC lexico as surprise and trust terms present in the text information and normalized for the total number of terms.
- **Angry:** score of angriness of the text information obtained with text2emotions.
- **Fear:** score of fear of the text information obtained with text2emotions.
- **Happy:** score of happiness of the text information obtained with text2emotions.
- **Sad:** score of sadness of the text information obtained with text2emotions.
- **Surprise:** score of surprise of the text information obtained with text2emotions.
- **pol\_score:** score of polarity of the text information obtained with textBlob.
- **sub\_score:** score of subjectivity of the text information obtained with textBlob.

## Linguistic medical

- **biomedical\_terms:** count of biomedical terms present in the text information and normalized for the total number of terms.
- **biomedical\_terms\_unique:** count of unique biomedical terms present in the text information and normalized for the total number of terms.
- **commercial\_terms:** count of commercial terms present in the text information and normalized for the total number of terms.
- **commercial\_terms\_unique:** count of unique commercial terms present in the text information and normalized for the total number of terms.
- **url\_count:** count of URLs present in the text information and normalized for the total number of terms.

## Propagation network

### Macro - structural

- **S1 - Network depth:** number of levels in the macro network.
- **S2 - Network order:** order of the graph, number of vertices.
- **S3 - Max out degree:** max out degree in the macro network, it's a measure of the influence of a vertex (called hub).
- **S4 - Cascade number:** number of cascades, tweets that share the informations.
- **S5 - Depth of hub:** number of levels of the hub.
- **S6 - Cascade number with at least one level:** number of cascades with at least one level (one retweet).
- **S7 - Ratio of cascade with at least one level:** number of cascades with at least one level over the total number of cascades.
- **S8 - BOT number:** number of BOT in the network.
- **S9 - BOT ratio:** ratio of the number of BOT over the total number of users.

### Macro - temporal

- **T1 - Average speed of diffusion:** average speed of diffusion in the macro network.
- **T2 - Lifespan of diffusion:** time difference between the first tweet and the last retweet inside the whole network.
- **T3 - Time before the hub diffusion:** time difference between the first tweet and the first tweet of the hub.
- **T4 - Lifespan of diffusion in the first level:** time difference between the first tweet and the last tweet in the first level.
- **T5 - Lifespan of diffusion in the deepest cascade:** time difference between the first tweet and the last retweet inside the deepest cascade.
- **T6 - Average speed of diffusion in the deepest cascade:** average speed of diffusion in the deepest cascade inside the macro network.
- **T7 - Average speed of diffusion inside the first level:** average speed of diffusion in the first level inside the macro network.
- **T8 - Average speed of diffusion between the first and second level:** average speed of diffusion between the first and second level for each cascade.

### Micro - structural

- **S10 - Network depth:** number of levels in the micro network.
- **S11 - Network order:** order of the graph, number of vertices.
- **S12 - Max out degree:** max out degree in the micro network, it's a measure of the largest conversation in the network.
- **S13 - Cascade number:** number of cascades with at least one reply.
- **S14 - Cascade ratio:** number of cascades with at least one level over the total number of cascades.

### Micro - temporal

- **T9 - Average speed of diffusion:** average speed of diffusion in the micro network.
- **T10 - Average speed of the first level:** average speed of diffusion between the tweet and the first reply.
- **T11 - Lifespan of diffusion:** time difference between the first tweet and the last reply.
- **T12 - Average speed of diffusion in the deepest cascade:** average speed of diffusion in the deepest cascade inside the micro network.
- **T13 - Lifespan of diffusion in the deepest cascade:** time difference between the tweet and the last reply inside the deepest cascade.

## Micro - linguistic

- **L1 - Ratio positive replies over negative replies:** ratio number of replies with positive polarity over number of replies with negative polarity.
- **L2 - Average polarity:** average polarity over all micro network.
- **L3 - Average polarity in the first level:** average polarity in the replies of the first level, polarity of the first reactions to the tweets and retweets.
- **L4 - Average polarity in the deepest cascade:** average polarity in the deepest conversation in the micro network.
- **L5 - Average polarity in the first level of the deepest cascade:** average polarity in the first level inside the deepest conversation inside the micro network.

## Engagement

- **E1 - Average favorite in the macro network:** average favorite obtained by tweets and retweets inside the macro network.
- **E2 - Max favorite in the macro network:** max favorite obtained by tweets and retweets inside the macro network.
- **E3 - Average favorite in the first level:** average favorite obtained by tweets inside the cascades of the macro network.
- **E4 - Average favorite in the micro network:** average favorite obtained by replies inside the micro network.
- **E5 - Max favorite in the micro network:** max favorite obtained by replies inside the micro network.

## User profile

### Follower & followee

- **U1 - Median follower in the first level inside the macro network:** median follower of users that share the information on the platform.
- **U2 - Max follower in the first level macro network:** max follower of users that share the information on the platform.
- **U3 - Median follower in the second level inside the macro network:** median follower of users that retweet the information on the platform.
- **U4 - Median follower inside the micro network:** median follower of users that replies to the informations shared inside the micro network.
- **U5 - Median followee in the first level inside the macro network:** median followee of users that share the information on the platform.
- **U6 - Max followee in the first level macro network:** max followee of users that share the information on the platform.
- **U7 - Median followee in the second level inside the macro network:** median followee of users that retweet the information on the platform.
- **U8 - Median followee inside the micro network:** median followee of users that replies to the informations shared inside the micro network.
- **U9 - Average number of biomedical terms inside the users descriptions in the first level:** average count of biomedical terms present in the users descriptions inside the second level of the macro network and normalized for the total number of terms.
- **U10 - Average number of biomedical terms inside the users descriptions in the second level:** average count of biomedical terms present in the users descriptions inside the second level of the macro network and normalized for the total number of terms.

## Unique contribute

- **CU1 - Average number of tweets per user in the first level in macro network:** average number of tweets per user in the first level inside the macro network.

- **CU2 - Max number of tweets per user in the first level in macro network:** max number of tweet posted in the first level by the same user.
- **CU3 - Average number of tweets per user in the second level in macro network:** average number of tweets per user in the second level inside the macro network.
- **CU4 - Max number of tweets per user in the second level in macro network:** max number of tweet posted in the second level by the same user.
- **CU5 - Average number of replies per user in the micro network:** average number of replies per user inside the micro network.
- **CU6 - Max number of replies per user in the micro network:** max number of replies posted by the same user.