

Sentiment and Stress Analysis with Senti/TensiStrength

Mike Thelwall

Statistical Cybermetrics Research Group
University of Wolverhampton, UK

Sentiment Strength Detection in the Social Web with *SentiStrength*

Detect positive and negative sentiment *strength* in short informal text

- Does not rely on standard grammar and spelling
- Uses nonstandard emotion expression forms from the social web (e.g., :-) or haaapppppyyyy!!!)
- Classifies positive 1 to 5 AND negative -1 to -5 sentiment

Thelwall, M., Buckley, K., & Paltoglou, G. (2012). [Sentiment strength detection for the social Web](#). *Journal of the American Society for Information Science and Technology*, 63(1), 163-173

Thelwall, M., Buckley, K., Paltoglou, G., Cai, D., & Kappas, A. (2010). [Sentiment strength detection in short informal text](#). *Journal of the American Society for Information Science and Technology*, 61(12), 2544-2558.

SentiStrength Algorithm - Core

- ◆ List of 2,489 positive and negative sentiment terms and strengths (1 to 5), e.g.
 - ache = -2, dislike = -3, hate=-4, excruciating -5
 - encourage = 2, coolest = 3, lover = 4
- ◆ Sentiment strength is highest in sentence; or highest sentence if multiple sentences

positive, negative

◆ My legs ⁻²ache. 1, -2

◆ You are the ³coolest. 3, -1

◆ I ⁻⁴hate Paul but ²encourage him. 2, -4

Extra rules (total: about 20)

- ◆ **spelling correction** nicce -> nice
- ◆ **booster words** alter strength **very** happy
- ◆ **negating words** flip sentiments **not** nice
- ◆ **repeated letters** boost sentiment/+ve niiiice
- ◆ **emoticon list** :) = +2
- ◆ **exclamation marks** count as +2 unless -ve hi!
- ◆ **repeated punctuation** boosts sentiment good!!!
- ◆ **Negativity ignored in questions** u h8 me?
- ◆ **sentiment idiom list** shock horror = -2

Online as <http://sentistrength.wlv.ac.uk/>

Tests against human coders on data sets of >1000 texts

Also correlates
with eyebrows,
feet, heart



SentiStrength
agrees with
typical humans
as much as they
agree with each
other

Data set	Positive scores - correlation with humans	Negative scores - correlation with humans
YouTube	0.589	0.521
MySpace	0.647	0.599
Twitter	0.541	0.499
Sports forum	0.567	0.541
Digg.com news	0.352	0.552
BBC forums	0.296	0.591
All 6 data sets	0.556	0.565

1 is perfect agreement, 0 is random agreement

Why the bad results for news and politics?

Irony, sarcasm and expressive language

- David Cameron must be **very happy** that I have lost my job because of Brexit.
- Your argument is a **joke**.

[Board on YouTube](#)



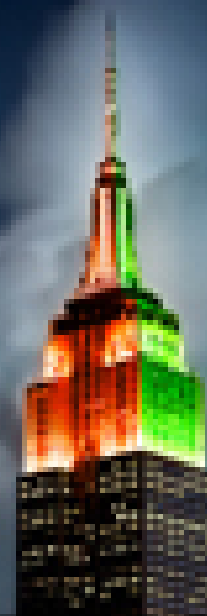
- Used for light displays on the London Eye during the Olympics
- 10 commercial users; available in 6-18 languages

Who's gonna win SUPER BOWL XLVIII?

Tweet your answer to the daily question above with #WhosGonnaWin and watch the Empire State Building tonight to see if your team's color will take over.

NY/NJ Super Bowl XLVIII Week: Powered by the Most Powerful Network.

Join The Action



[Empire State Building Lightshow](#)



AWD or 4WD Which is Better?

I have a Subaru Outback with All wheel drive. My sister has a Jeep with 4 Wheel drive. I'm curious is one better than the other? From what I've read 4WD is better for off roading but I thought Subaru (all wheel) was great at that! I've never had any problems driving my subaru in many different... [show more](#)

☆ 4 following ✎ 38 answers

Answers

- Relevance ▾
- Rating
- Newest
- Oldest



4WD: Maximum torque goes to all wheels simultaneously. Can be toggled on or off in most cases.
AWD: Your car computer decides the appropriate amount of torque that goes to each wheel. Stays on

4WD is better for off road. If you are not using it for off roading, get AWD. Reason being: With 4WD you lose traction on the road because all wheels are turning at the same speed. When turning, the inside wheel has to slow down to maintain traction. With good old 4WD, your car is working against that. Therefore you lose traction on the road, especially at higher speeds. AWD is a lot newer. It gives you better control and traction. It does this by determining how much torque goes where. AWD isn't just rip off of 4WD. Quite the contrary. AWD is the "smarter" version of 4WD. It's the best of both worlds in my opinion, plus better performance in some vehicles than RWD would have been.

Benjamin Nagy · 10 hours ago

👍 4 👎 0

Yahoo! Answers -Answer ranking

1 comment



4wd can be turned on or off . That means you only use it when you have to.
Awd is always on . That means its on even when you have no use for it .

Kucuktunc, O., Cambazoglu, B.B., Weber, I., & Ferhatosmanoglu, H. (2012).
[A large-scale sentiment analysis for Yahoo! Answers](#),
Proceedings of the [5th ACM International Conference on Web Search and Data Mining](#).

Sentiment search filters

Analysis2 - [dad: 394741 matches found out of 17461560 (2.3%) (word ID= 593)]

Analyse Networks Data Subprojects About

to match all words; AND/OR priority IGNORED: processing is left to right

Boolean Search
(or)

Previous

Show original text (slow)

Next

[More help](#)

erling Co-word comparisons

1 ID of first item to show

2013.7.28 First date to show

Results to show

Hide #tags and @s

Hide duplicates (v. slow)

Return results from this
label tweeters (case sensitive)

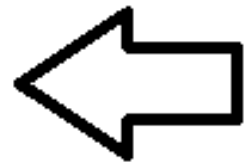
Results only from this Tweeter/feed ID

Select alternative subproject

Advanced Search Tips

- AND - results must match the part of the query to the left of AND and the term to the right
- OR - is the default and is ignored
- () - brackets can be used in conjunction with AND for more complex Boolean searches
- - (minus) before term excludes all matches of the query to the left of the term also matching the term (e.g., put -term at query end to exclude matches containing term).
- " " - quotes ensure that the exact phrase in quotes matches the search (slow)

<= +ve sentiment <= <= -ve sentiment <=



can a proud dad get a shout out for his daughter jenny wedding today #jennychriswedding
my dad is in a super mad mood and he all sassy and has a terrible attitude dad stop you can't get mad at me after
to start tonight me and my dad watch it every year
me to a chinese for tea to cheer me up love
i hope you wouldnt dad lol and yea i know i might come out there today
dy love each other very much dad we we did is fuck
o talk to my dad
eatest person to walk the face of this

Feed #6277 Info:
URL: OfficialTRIGMI
Topic: dad
Name: #TRIGMI ☆ #BMB

Item #12647 Text:
@timholmrgren lol i hope you wouldnt dad lol
and yea i know i might come out there today

TensiStrength

- ◆ Like SentiStrength but lexicon uses stress-related terms
- ◆ Goal: detect stressed travellers from their social media posts
- ◆ Contrasts stress with relaxation

<http://sentistrength.wlv.ac.uk/TensiStrength.html>

Thelwall, M. (2017). TensiStrength: Stress and relaxation magnitude detection for social media texts. *Information Processing & Management*, 53(1), 106–121.

Stress/relaxation terms

- ◆ Late, delayed, didn't work, nervous wreck, late for
 - The train is very late. (1, -5)
- ◆ Sleep, peaceful, a walk, on time
 - I went to sleep (4, -1)

Evaluation TensiStrength [top] /SentiStrength [bottom]

Corpus	Tweets	Corr.	Exact	Within 1	MAD
Common short words	608	0.505	327 (53.9%)	555 (91.4%)	0.552
		0.511	328 (54.0%)	551 (90.8%)	0.562
Emotion terms	619	0.419	302 (48.9%)	552 (89.3%)	0.633
		0.467	274 (44.3%)	529 (85.6%)	0.715
Insults	180	0.329	97 (54.2%)	168 (93.9%)	0.531
		0.422	76 (42.5%)	155 (86.6%)	0.726
Opinions	476	0.452	271 (57.1%)	437 (92.0%)	0.518
		0.506	232 (48.8%)	424 (89.3%)	0.636
Stress terms	655	0.377	239 (36.5%)	517 (79.1%)	0.893
		0.385	300 (45.9%)	571 (87.3%)	0.682
Transport	528	0.457	273 (51.8%)	473 (89.8%)	0.594
		0.451	276 (52.4%)	464 (88.0%)	0.605
All combined	3066	0.444	1512 (49.3%)	2705 (88.3%)	0.642
		0.471	1489 (48.6%)	2698 (88.0%)	0.647
All combined (unrounded)	3066	0.465	950 (31.0%)	2845 (92.8%)	0.660
		0.495	932 (30.4%)	2837 (92.5%)	0.664

Performance overview

- ◆ TensiStrength has reasonable accuracy
- ◆ TensiStrength only slightly better than SentiStrength – despite many differences
- ◆ Machine learning works better than TensiStrength – by detecting stressful contexts as well as expressions of stress