## **FEATURES AND UPDATES**

Many thanks to George Berry, Ewan Klein, Pierpaolo Pantone for key contributions to make VADER better. The new updates includes capabilities regarding:

- 1. Refactoring for Python 3 compatibility, improved modularity, and incorporation into [NLTK] ... many thanks to Ewan & Pierpaolo.
- 2. Restructuring for much improved speed/performance, reducing the time complexity from something like  $O(N^4)$  to O(N)... many thanks to George.
- 3. Simplified pip install and better support for vaderSentiment module and component import. (Dependency on vader\_lexicon.txt file now uses automated file location discovery so you don't need to manually designate its location in the code, or copy the file into your executing code's directory.)
- 4. More complete demo in the \_\_main\_\_ for vaderSentiment.py. The demo has:
  - examples of typical use cases for sentiment analysis, including proper handling of sentences with:
    - typical negations (e.g., "not good")
    - use of contractions as negations (e.g., "wasn't very good")
    - conventional use of **punctuation** to signal increased sentiment intensity (e.g., "Good!!!")
    - conventional use of word-shape to signal emphasis (e.g., using ALL CAPS for words/phrases)
    - using **degree modifiers** to alter sentiment intensity (e.g., intensity *boosters* such as "very" and intensity *dampeners* such as "kind of")
    - understanding many **sentiment-laden slang** words (e.g., 'sux')
    - understanding many sentiment-laden slang words as modifiers such as 'uber' or 'friggin' or 'kinda'
    - understanding many sentiment-laden **emoticons** such as :) and :D
    - understanding sentiment-laden initialisms and acronyms (for example: 'lol')
  - more examples of **tricky sentences** that confuse other sentiment analysis tools
  - example for how VADER can work in conjunction with NLTK to do sentiment analysis on longer texts...i.e., decomposing paragraphs, articles/reports/publications, or novels into sentence-level analyses
  - examples of a concept for assessing the sentiment of images, video, or other tagged multimedia content
  - if you have access to the Internet, the demo has an example of how VADER can work with analyzing sentiment of **texts in other languages** (non-English text sentences).