Team ‘How Does That Make You Feel?’: Semeval 2016 Task 4 Proposal

|  |
| --- |
|  |
|  |
| **Evan Akers - M08637241** |
| **Kyle Arens - M06181631** |
| **Ryan Benner - M04890768** |
| **Joe Hirschfeld - M08704926** |
|  |
|  |
|  |

1. Task Description

SemEval-2016 Task 4 is made up of five subtasks for analyzing sentiment within tweets:

Subtask A: Given a tweet, classify the message into either a positive, negative, or neutral sentiment.

Subtask B: Given a tweet and topic for that tweet, classify the message into either positive or negative sentiment

Subtask C: Given a tweet and topic for that tweet, classify the message into one of the categories: Very positive, positive, neutral, negative, very negative

Subtask D: Given a topic and a set of tweets about that topic, estimate the distribution of the tweets in either positive or negative sentiment

Subtask E: Given a topic and a set of tweets about that topic, estimate the distribution of the tweets in one of the following categories: Very positive, positive, neutral, negative, or very negative

Subtask B and C are similar in that they both are classifying a tweet by sentiment for a topic, but differ where B uses a two-point scale and C uses a five-point scale

Likewise, subtasks D and E are similar in that they both are estimating a distribution of tweets based on sentiment, but differ in that one distribution is made with a two-point scale, and the other is made with a five point scale

1. Approach

To massage the data, URLs will be replaced with https://t.co. Using the task provided metric, all tweets will be positive as a baseline (Nakov et al., 2016). For data analysis, the following features will be used: if a word is spelled correctly, hashtags, emoticons, punctuation, and POS tagging using within NLTK. The casual tokenizer within NLTK splits punctuations, emoticons, hashtags, and URLs on top of the regular splits that the default tokenizer does. Afterwards, they are tagged within our implementation. The result is then run through a conjugation neural net to split the message into separate sentiments. This is done because it is thought that the last sentiment carries the most weight and best represents the sentiment of the overall tweet. For a given tweet, word list and the feature array for each word. These two results from each of the neural nets combined return the sentiment and build the weights for each of the features.

1. Preliminary Results
2. Timeline

Acknowledgments

Do not number the acknowledgment section.

References

Alfred. V. Aho and Jeffrey D. Ullman. 1972. *The Theory of Parsing, Translation and Compiling, volume 1*. Prentice-Hall, Englewood Cliffs, NJ.

American Psychological Association. 1983. *Publications Manual.* American Psychological Association, Washington, DC.

Association for Computing Machinery. 1983. *Computing Reviews*, 24(11):503-512.

Ashok K. Chandra, Dexter C. Kozen, and Larry J.Stockmeyer. 1981. Alternation. *Journal of the Association for Computing Machinery*, 28(1):114-133.

Dan Gusfield. 1997. *Algorithms on Strings, Trees and Sequences*. Cambridge University Press, Cambridge, UK.

Alexander V. Mamishev and Murray Sargent. 2013. *Creating Research and Scientific Documents Using Microsoft Word*. Microsoft Press, Redmond, WA.

Alexander V. Mamishev and Sean D. Williams. 2010. *Technical Writing for Teams: The STREAM Tools Handbook*. Wiley-IEEE Press, Hoboken, NJ.

Nakov, P., Ritter, A., Rosenthal, S., Sebastiani, F., & Stoyanov, V. (2016). SemEval-2016 Task 4: Sentiment Analysis in Twitter. Retrieved October 15, 2017, from https://aclweb.org.