Reference: http://www.anthology.aclweb.org/D/D13/D13-1169.pdf

**Analysis and summary of “Deriving adjectival scales from continuous space word representations”**

Continuous space word representations captured from neural networks capture syntactic and semantic meaning. The continuous model creates an *n*-dimensional space to represent a word, as compared to an *n*-gram model, which more directly bounds words to their discrete contexts. This makes them ideal to examine and learn more complex scalar adjectives. This paper attempts to use that meaning to construct a scale for adjective representations. Using precomputed word representations, the authors examine the relationships between adjectives under the assumption that the relationship is linear. Cosine similarity is used to measure where a particular word fits on the scale (or what word fits at a particular point of the scale). For example, to find the comparative adjective, find the word closest to the average of the superlative and standard adjective. Similarly, one can determine if which adjective best fits a scale, given a handful of adjectives with near analogous sentiment. To test their results, they find an antonym using WordNet and use that to infer answers to the yes/no questions of IQAP. The result is more successful that previous models with the same test dataset.

**CORPUS:**

They use the de Marneffe **IQAP corpus** to test. The continuous word representations are generated from a RNNLM using the **Broadcast News dataset** to train.

Next steps would be to review Mikolov’s paper on continuous semantic papers and de Marneffe’s paper on the corpus. For deeper understanding of NNLMs a number of papers have been cited.

Possible other papers:

(Landauer et al., 1998).

(Mikolov et al., 2011)

Mikolov (2013) – **Continuous Semantic Vectors**

de Marneffe (2010) – **Corpus**

(Bengio et al., 2003; Schwenk, 2007; Mikolov et al., 2010) – **NNLMs to learn word vectors**

[**https://link.springer.com/chapter/10.1007/978-3-319-25789-1\_25**](https://link.springer.com/chapter/10.1007/978-3-319-25789-1_25)

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