4/27/17

w/Tristan:

- align vector spaces on stop words

- align vector spaces on synthetic words

**Measuring similarity between embedding spaces:**

* Cem Safak Sahin, [Rajmonda S. Caceres](https://arxiv.org/find/cs/1/au:+Caceres_R/0/1/0/all/0/1), [Brandon Oselio](https://arxiv.org/find/cs/1/au:+Oselio_B/0/1/0/all/0/1), [William M. Campbell](https://arxiv.org/find/cs/1/au:+Campbell_W/0/1/0/all/0/1). Consistent Alignment of Word Embedding Models. <https://arxiv.org/abs/1702.07680>
* Kim et al 2014. Temporal Analysis of Language through Neural Language Models <https://www.aclweb.org/anthology/W/W14/W14-2517.pdf>. In it the authors initialize train an embedding and then use it as an initialization to train a subsequent embedding, essentially providing incentive more many frequent words to stay in the same place. They then do a similarly measure of the words between the two embeddings. In the paper they're doing it to try to look at how embeddings change over time, but we would be doing it just for comparing the words in two embeddings.
  + Misha D: gensim code, approach easy to implement
  + ***In fact it is not 100% clear how they did this, but intersect\_word2vec\_format() seems to be the way to go:*** [***https://groups.google.com/forum/#!topic/gensim/Y\_WmJST9xx8***](https://groups.google.com/forum/#!topic/gensim/Y_WmJST9xx8) ***- the only problem may be that this method may fix the vectors and prevent them from being changed during training***
* Yao et al. - Discovery of Evolving Semantics through Dynamic Word Embedding Learning (March 2017). <https://arxiv.org/pdf/1703.00607.pdf> - they compute word embeddings and alignments **jointly**, through solving one overall optimization problem

**Sources:**

* **twitter**: hashtags as groups; hashtag-based language diversion
* **vk**: did the language of the groups diverge as the conflict continued? if so, by how much?
* **reddit**
* **fortune**

**Subculture detection and language drift:**

* Zhang, Leskovec, Jurafsky et al, ICWSM 2017. Community Identity and User Engagement in a Multi-Community Landscape <https://cs.stanford.edu/people/jure/pubs/identity-icwsm17.pdf>

# Hamilton, Lescovec, Jurafsky. EMNLP 2016. Cultural Shift or Linguistic Drift? Comparing Two Computational Measures of Semantic Change. <https://arxiv.org/abs/1606.02821>

# Hamilton, Lescovec, Jurafsky. ACL 2016. Diachronic Word Embeddings Reveal Statistical Laws of Semantic Change. <https://arxiv.org/abs/1605.09096> - diachronic word embeddings

# [Ian Stewart](https://arxiv.org/find/cs/1/au:+Stewart_I/0/1/0/all/0/1), [Dustin Arendt](https://arxiv.org/find/cs/1/au:+Arendt_D/0/1/0/all/0/1), [Eric Bell](https://arxiv.org/find/cs/1/au:+Bell_E/0/1/0/all/0/1), [Svitlana Volkova](https://arxiv.org/find/cs/1/au:+Volkova_S/0/1/0/all/0/1). arxiv 2017. Measuring, Predicting and Visualizing Short-Term Change in Word Representation and Usage in VKontakte Social Network. <https://arxiv.org/abs/1703.07012>

**Detecting slang:**

* (older work)

(unrelated) Lescovec 2016, inducing sentiment lexicons in an unsupervised manner:

<https://arxiv.org/abs/1606.02820>

w/Svitlana:

* Make two sets of embeddings for each month
* Filter by frequency (take only the words that occurred 1000 times?)
* Initialize embeddings for the next month from the previous month
* AR: we need to visualize the “misaligned” words