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Weekly Update 8 September 2020

Summary

This week, I replicated my LIME (ICA embeddings + trained SVM classifier) experiments using NMF embeddings instead of ICA embeddings. As a reminder, LIME requires (amongst other things) a pipeline that goes from raw text to word embeddings to tweet embeddings. The NMF embeddings are similar to the ICA embeddings in that both come from the word-context co-occurrence matrix. However, for the ICA word embeddings, I performed a PCA and then ICA on this matrix, whereas for NMF embeddings I simply performed an NMF decomposition on the word-context co-occurrence matrix.

Overall, the LIME results are fairly similar to those obtained from the ICA embeddings + trained SVM; however, there are slight differences for the LIME output for the NMF embeddings + trained SVM. This makes sense, because the features used in the algorithm (the tweet embeddings) will be slightly different.

Results

Below I have included examples of the LIME explanation output for the same tweets as last time.

Chart, waterfall chart

Description automatically generated

Chart, waterfall chart

Description automatically generated

A picture containing timeline

Description automatically generated

Timeline

Description automatically generated