Word-Similarity Scores

1) Constrained Scenario

Spearman Correlation: 2.92

This method is effective for well-defined, narrow tasks or domains where the linguistic variation is limited, and key sentiment indicators are well understood.

The model may struggle with nuanced language, sarcasm, or context-dependent sentiment due to the limited training data. It also does not generalize well across domains or on unseen data.

The main limitation is the amount of data, which restricts the model's ability to learn the variety and complexity of natural language.

2) Unconstrained Scenario

Spearman Correlation: 42.47

Pre-trained models excel at capturing complex language patterns and can perform well across different domains and on nuanced language.

Utilizing large corpora for training directly enhances the model's ability to generalize and understand diverse linguistic expressions.

Phrase and Sentence Similarity

Keeping in mind the complexity and length of sentences over phrases, it might be expected that the accuracy for phrase similarity will be greater than that if sentences but the model I uses (Word2Vec) gave 55.85% accuracy for sentences while 51.65% for phrases.

The cases where the model might have failed are:

1) Ambiguity and Polysemy
E.g.: the word 'bank' in "riverbank" vs. "financial bank."
Models fail when words have multiple meanings, and the context isn't clear enough to disambiguate.

2) Sarcasm
E.g.: "This is as clear as mud" indicating something is not clear at all.
Incorrect interpretation of phrases/sentences leads to false similarity judgments.
Such expressions require a deep understanding of language.

3) Synonyms
Model fails to recognize similarity when different vocabulary is used for the same word.

This requires understanding synonyms and the ability to abstract meaning from specific word choice.