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SUPPORTING TERM EXPLANATION WHILE BROWSING IN SLOVAK

NECESSITY of full understanding of web page

NEED to choose the proper meaning by ourselves

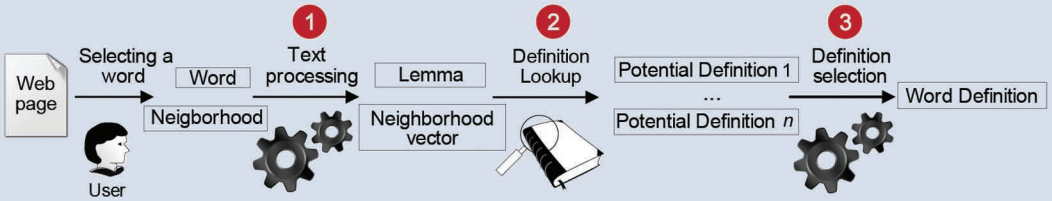
MISSING tool for neighborhood based explanation

WORD NEIGHBORHOOD · LEMMA · COSINE SIMILARITY · TEXT EXPLANATION · DEFINITION LOOKUP · WORD DISAMBIGUATION · TEXT PROCESSING

SOLUTION

METHOD FOR DISAMBIGUATED TERM DEFINITION ACQUISITION

1. web page text pre-processing
2. potential definitions lookup
3. correct definition selection



Web page pre-processing

- HTML tags removal
- Lemmatization - transforming a word into its basic form. We use Lematizér JUĽŠ SAV with 96.1% accuracy.
- Stop words removal - while it does not affect text meaning.
- Text segmentation and representation Bag of Words model.

Potential definition lookup

- Online dictionaries
- Lemma as an input
- Potential definitions output (polysemy)

Correct definition selection

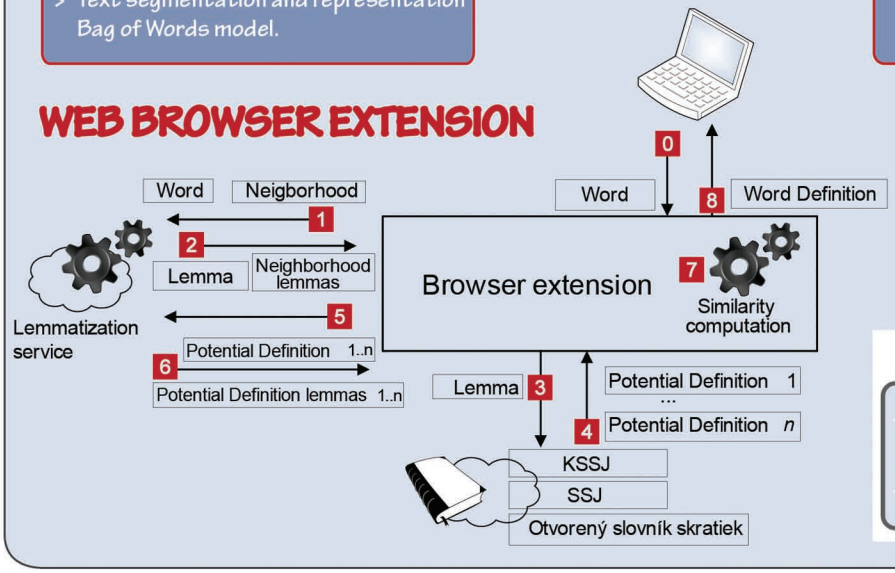
Word neighborhood options:

- whole text
- paragraph only
- sentence only

Similarity calculation:

$$CosSim(D_A, D_B) = \cos(\theta) = \frac{A.B}{\|A\|.\|B\|} = \frac{\sum_{i=1}^{n} A_i.B_i}{\sqrt{\sum_{i=1}^{n}(A_i)^2}.\sqrt{\sum_{i=1}^{n}(B_i)^2}}$$

WEB BROWSER EXTENSION



1. word lemma and link to dictionary
2. meaning index and meaning switcher
3. word meaning and samples of usage
4. feedback
5. synonyms

PRELIMINARY EXPERIMENT

- different approaches to word neighborhood selection
- experiment to find the best

	Correct word definition selection accuracy
Whole text	70%
Paragraph only	80%
Sentence only	60%

CORRECT TERM DEFINITION ACQUSITION

- live experiment with 20+ users
- gathering explicit feedback
- 1200 logs

Single meaning words	95,34%
Multiple meaning words	68,67%
Other than first meaning	63,85%
Overall	77,11%