Neural Networks applied in NLP

Lab 1

Task 1 (0.25p).

Given the sentences:

S1: The man saw a car in the park

S2: I saw the man park the car

Compute similarity between them using the following measures (if the measure yields a distance, convert the result to a similarity).

a). Euclidean

b) Vector cosine

c) Jaccard

d) Overlap

Provide the vector or set representation for each sentence used in each case. Develop your computations.

Task 2 (0.75p).

(0.25p) Exploit WordNet's hierarchy using relations such as hyponym/hypernym, antonyms, meronyms, synonyms and definitions to collect words that are related to a user given word.

(0.25p) Build a Word Association Game using WordNet Similarity (any existing similarity method from NLTK library), along with the relations identified above. The player is prompted with a word and must come up with related words based on semantic similarity and relations using WordNet. Offer rewards points based on how semantically similar the player's word is to the original word. Provide feedback on the "closeness" of the player's word to the original.

(0.25p) Provide it in a user-friendly manner.