COMP9444 Neural Networks and Deep Learning
Term 3, 2020

Exercises 6: Word Vectors

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1. Consider the sentence

   "two flowers grew tall on two tall towers"

   a. Write the co-occurrence matrix X for this sentence, using a 4-word context window (i.e. two context words on either side of the central word)
   b. Use `torch.svd()` to compute the singular value decompositon of this matrix X = USV^T
   c. Extract a word representation from the first two columns of U and use `matplotlib` to plot the words on a 2-dimensional graph.

Make sure you Attempt the questions yourself, before looking at the Sample Solutions.