NLP and Word Embeddings

deeplearning.ai

Learning word embeddings

Neural language model

I	want	a	glass	of	orange	juice .
4343	9665	1	3852	6163	6257	

$e_{4343} = E \, o_{4343}$

apple juice.

I $\quad o_{4343} \longrightarrow E \longrightarrow e_{4343}$

want $\quad o_{9665} \longrightarrow E \longrightarrow e_{9665}$

a $\quad o_1 \longrightarrow E \longrightarrow e_1$

glass $\quad o_{3852} \longrightarrow E \longrightarrow e_{3852}$

of $\quad o_{6163} \longrightarrow E \longrightarrow e_{6163}$

orange $\quad o_{6257} \longrightarrow E \longrightarrow e_{6257}$

Softmax

10,000

$w^{[1]}, b^{[1]}$ $\qquad$ $w^{[2]}, b^{[2]}$

1800 1200
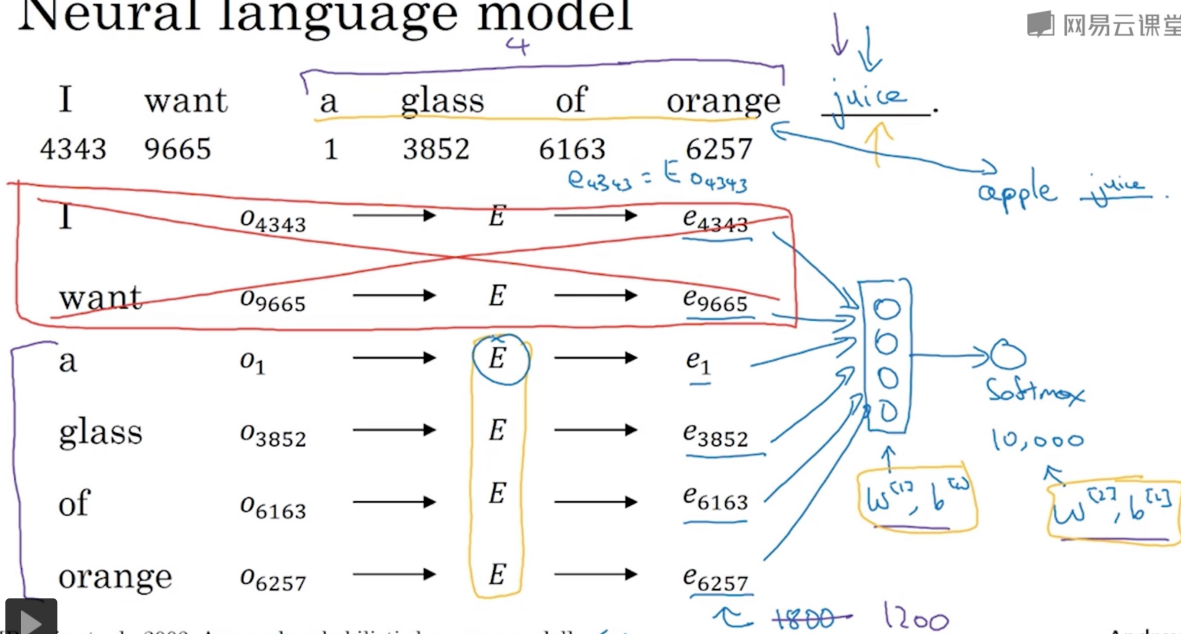
[Bengio et. al., 2003, A neural probabilistic language model]

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Other context/target pairs

I want a [glass] of [orange] juice to go along with my cereal.

Context   target

Context: Last 4 words.

4 words on left & right   a glass of orange ___ to go aly with

Last 1 word   orange ___?

Nearby 1 word   glass ___?

skip-gram

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