NLP and Word Embeddings

deeplearning.ai

Learning word embeddings
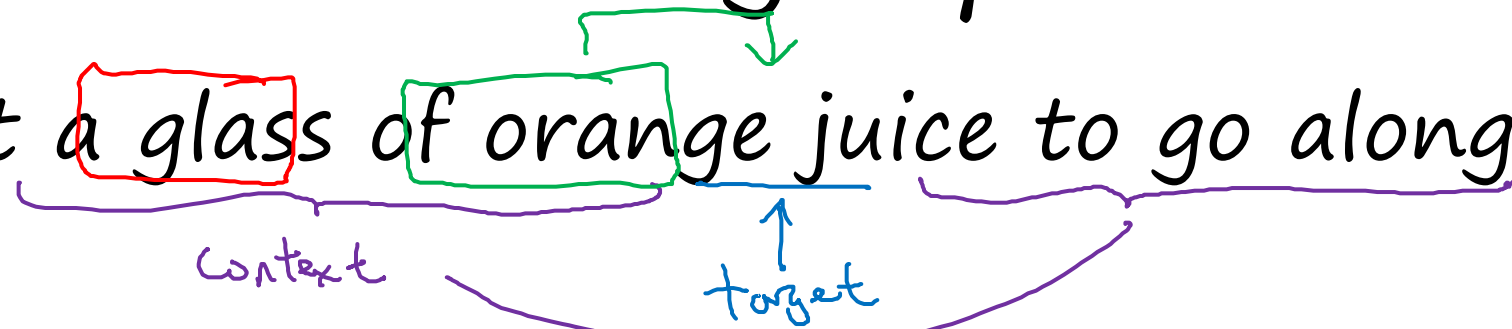
Neural language model

I   want   a   glass   of   orange   ____.

4343   9665   1   3852   6163   6257

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

apple juice.

I	$o_{4343} \rightarrow E \rightarrow$	e_{4343}
want	$o_{9665} \rightarrow E \rightarrow$	e_{9665}
a	$o_{1} \rightarrow E \rightarrow$	e_{1}
glass	$o_{3852} \rightarrow E \rightarrow$	e_{3852}
of	$o_{6163} \rightarrow E \rightarrow$	e_{6163}
orange	$o_{6257} \rightarrow E \rightarrow$	e_{6257}

Softmax

10,000

$W^{[1]}, b^{[1]}$ $W^{[2]}, b^{[2]}$

~ 1800 1200

[Bengio et. al., 2003, A neural probabilistic language model]   Andrew Ng
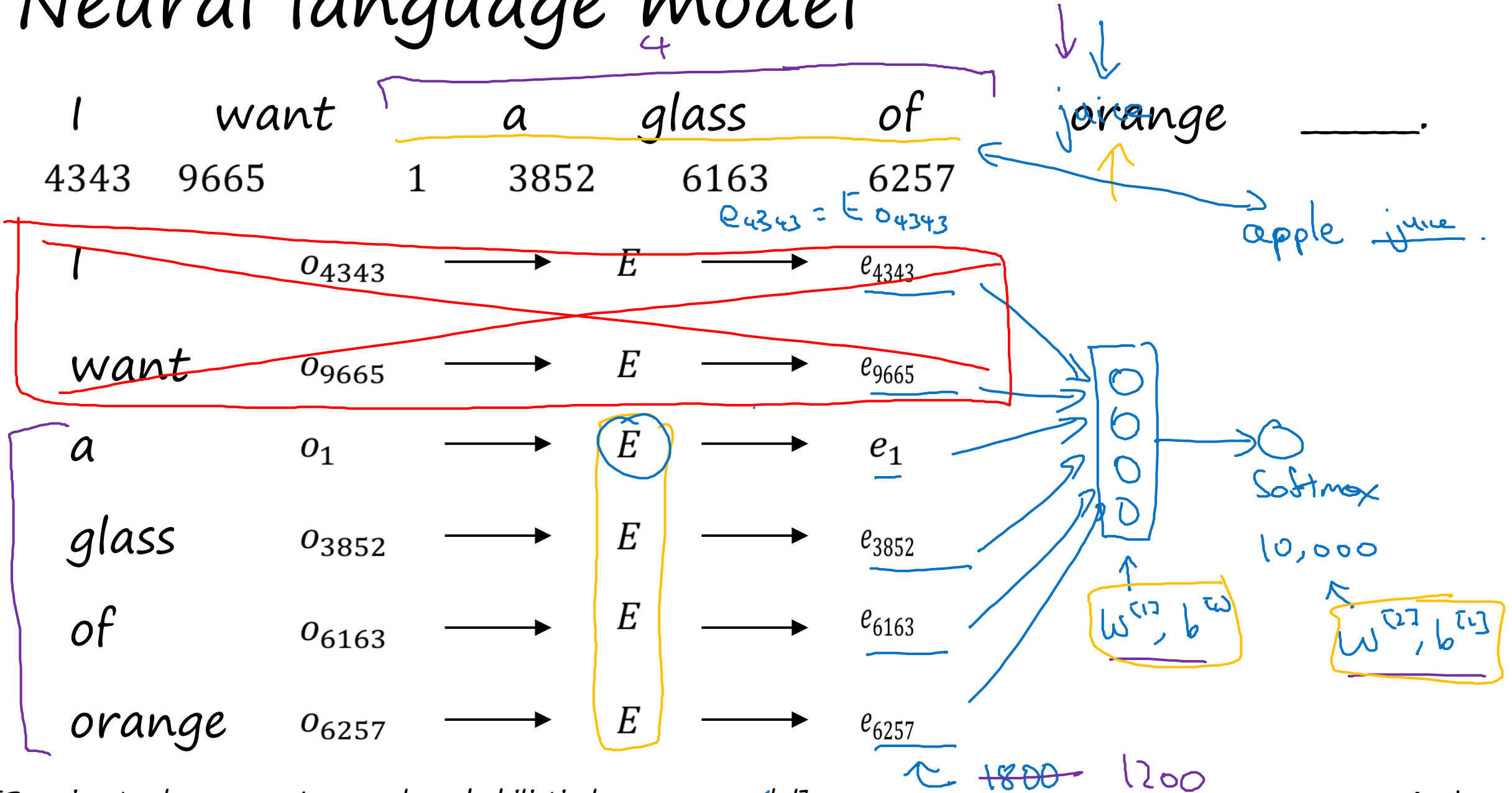
Other context/target pairs

I want a glass of orange juice to go along with my cere[al]

Context ←→ target

Context: Last 4 words.

- 4 words on left & right   a: glass of orange ___ to go alg with
- Last 1 word   orange ___?
- Nearby 1 word   glass ___?

skip gram