

	In Vocabulary					Out-of-Vocabulary		
	<i>while</i>	<i>his</i>	<i>you</i>	<i>richard</i>	<i>trading</i>	<i>computer-aided</i>	<i>misinformed</i>	<i>loooooook</i>
LSTM-Word	<i>although</i>	<i>your</i>	<i>conservatives</i>	<i>jonathan</i>	<i>advertised</i>	—	—	—
	<i>letting</i>	<i>her</i>	<i>we</i>	<i>robert</i>	<i>advertising</i>	—	—	—
	<i>though</i>	<i>my</i>	<i>guys</i>	<i>neil</i>	<i>turnover</i>	—	—	—
	<i>minute</i>	<i>their</i>	<i>i</i>	<i>nancy</i>	<i>turnover</i>	—	—	—
LSTM-Char (before highway)	<i>chile</i>	<i>this</i>	<i>your</i>	<i>hard</i>	<i>heading</i>	<i>computer-guided</i>	<i>informed</i>	<i>look</i>
	<i>whole</i>	<i>hhs</i>	<i>young</i>	<i>rich</i>	<i>training</i>	<i>computerized</i>	<i>performed</i>	<i>cook</i>
	<i>meanwhile</i>	<i>is</i>	<i>four</i>	<i>richer</i>	<i>reading</i>	<i>disk-drive</i>	<i>transformed</i>	<i>looks</i>
	<i>white</i>	<i>has</i>	<i>youth</i>	<i>richter</i>	<i>leading</i>	<i>computer</i>	<i>inform</i>	<i>shook</i>
LSTM-Char (after highway)	<i>meanwhile</i>	<i>hhs</i>	<i>we</i>	<i>eduard</i>	<i>trade</i>	<i>computer-guided</i>	<i>informed</i>	<i>look</i>
	<i>whole</i>	<i>this</i>	<i>your</i>	<i>gerard</i>	<i>training</i>	<i>computer-driven</i>	<i>performed</i>	<i>looks</i>
	<i>though</i>	<i>their</i>	<i>doug</i>	<i>edward</i>	<i>traded</i>	<i>computerized</i>	<i>outperformed</i>	<i>looked</i>
	<i>nevertheless</i>	<i>your</i>	<i>i</i>	<i>carl</i>	<i>trader</i>	<i>computer</i>	<i>transformed</i>	<i>looking</i>

Table 6: Nearest neighbor words (based on cosine similarity) of word representations from the large word-level and character-level (before and after highway layers) models trained on the PTB. Last three words are OOV words, and therefore they do not have representations in the word-level model.