

START OF QUIZ

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Question 1

Topic: Lecture 2

Source: Lecture 2

Do you think that FSTs can work with templatic morphology? Explain. (1)

Question 2

Topic: Lecture 1

Source: Lecture 1

Knowing what you know about parsing, describe how derivation could be considered syntax, instead of morphology. In other words, how might we parse derivations? (1)

Question 3

Topic: Lecture 4

Source: Lecture 4

Transition-based segmentation is very similar to the SR parser we saw last block, except it uses 2 FIFO structures, and doesn't require a stack. What is different about segmentation so that it doesn't require a stack? (1)

Question 4

Topic: Lecture 4

Source: Lecture 4

Literate Chinese speakers have no difficulty parsing words in Chinese text (outside normal ambiguities). What advantages do you think they have that our algorithms are lacking? (1)

Question 5

Topic: Lecture 3

Source: Lecture 3

What is the motivation behind BPE (ie, what is it maximizing / minimizing)? (1)

Question 6

Topic: Lecture 1

Source: Lecture 1

Vowel harmony is a process by which vowels in affixes must match some of the properties of the vowels in the root. For example, in Turkish, “houses” is “evler”, while “schools” is “okullar”, where the plural suffix must have a front or back vowel, matching the root (“ev” and “okul”). Given the ML models you’ve seen so far, give a specific example of a model that you think can learn this process, and explain why it’s well suited to the task. (2)

Question 7

Topic: Lecture 2

Source: Lecture 2

In some ways, Statistical Machine Translation (SMT) was similar to an FST modified by a re-ordering model (ie, each input word had a corresponding output translation, and then the words were re-ordered to fit a language model). These models have been supplanted by NMT. What shortcomings of FSTs do you think put a ceiling on SMT performance? (2)

Question 8

Topic: Lecture 3

Source: Lecture 3

In the lab, you compared BPE with a more linguistically-motivated segmentation scheme. Intrinsically, the supervised method performs much better, but typically, BPE and its cousins work much better down-stream. Why do you think that is, taking into account the differences between the two methods? (2)

Question 9

Topic: Long

Source: Lecture 4

In 1799, Napoleon's armies were raiding Egypt when they discovered the Rosetta stone, which contained a parallel corpus of Latin, Greek, and Egyptian (written in hieroglyphics). This was one of the greatest linguistic discoveries, as it allowed linguists to decipher the long unknown Egyptian language. Imagine that we found a similar stone today, but with several languages (you can assume they are well-known languages), including Linear A (a language spoken in ancient Crete). Would you prefer that the languages have high morphological complexity (like, say Finnish or Turkish), simpler morphology (like English or Chinese), or something in the middle, and how would you use this information to inform your automated approach to decrypting Linear A? You can ignore the fact that modern languages didn't exist when Linear A was spoken. Assume that the other languages are completely interpretable.

(3)

END OF QUIZ