

START OF QUIZ

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Question 1

Topic: Lecture 7

Source: Lecture 7

Briefly describe how the stack changes for a SHIFT operation. (1)

Question 2

Topic: Lecture 6

Source: Lecture 6

In class, we mentioned that the Earley and CYK parsers are both cubic complexity, but that in practice, the Earley Parser is typically faster. Why do you think that is? (1)

Question 3

Topic: Lecture 7

Source: Lecture 7

Briefly describe how dependency parsing differs from constituency parsing. (1)

Question 4

Topic: Lecture 6

Source: Lecture 6

Describe the difference between top-down and bottom-up parsing (1)

Question 5

Topic: Lecture 5

Source: Lecture 5

Why do we only care about the "upper triangle"? (1)

Question 6

Topic: Lecture 5

Source: Lecture 5

Do you think we could modify CYK with a feature grammar? What benefits would it provide, and what difficulties would it present? (2)

Question 7

Topic: Lecture 8

Source: Lecture 8

Imagine that we have a dependency parser that has a very good UAS (90+), but a very bad LAS (50-). Do you think that we could use the output of this parser as input to a neural translation model as is, or do you think that we should first re-train the labeling part of the algorithm to increase LAS? Doing both is probably the best solution, but I'm asking if you think that we could use the output of the existing model, even as we try to improve the quality of the labels. Explain. (2)

Question 8

Topic: Lecture 8

Source: Lecture 8

In class, we mentioned that graph-based parsing can handle non-projective parses, but it has cubic time complexity. How would you go about improving the complexity to (mostly) linear time, while still being able to handle non-projective parses? Describe why this solution works. Hint: we talked about a simple solution in class. (2)

Question 9

Topic: Long

Source: Lecture 7

We often think of NLP as a pipeline - first we POS-tag, then we dependency parse, then we ... Imagine a situation where we have a cyclical learning process - first we solve one task, which informs a second, which then informs the next iteration of the first, etc. Let's consider POS-tagging and Dependency parsing as our two tasks. Describe if you think this could be a reasonable approach to iterative ML, and some of the benefits and disadvantages of such a process. Be specific! Now, consider adding constituency parsing into the loop. Where might be the most appropriate location to include it? Provide a justification. (3)

END OF QUIZ