

START OF QUIZ

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Question 1

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 2

Topic: Lecture 8

Source: Lecture 8

When training an ML SR parser, why do you think we need to include both the state of the stack, and the state of the buffer? (1)

Question 3

Topic: Lecture 8

Source: Lecture 8

Why do we evaluate UAS and LAS separately? (1)

Question 4

Topic: Lecture 5

Source: Lecture 5

Describe why CNF is necessary for the CYK algorithm. (1)

Question 5

Topic: Lecture 7

Source: Lecture 7

Briefly describe how the stack changes for a SHIFT operation. (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 7

Source: Lecture 7

In class, we saw that LLMs can struggle with long-term dependencies, why do you think that is, given what you know about language models and dependency parsing. (2)

Question 8

Topic: Lecture 6

Source: Lecture 6

Imagine that we want to take the best of both worlds of the CYK parser and the Earley parser. To take advantage of parallel processing, we create a "meet-in-the-middle" parser that simultaneously starts parsing from the top and the bottom. Describe at least 2 difficulties with this approach. (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