

START OF QUIZ

Student ID:

57830358, Yi, Vincent

Academic honesty is essential to the continued functioning of the University of British Columbia as an institution of higher learning and research. All UBC students are expected to behave as honest and responsible members of an academic community. Failure to follow the appropriate policies, principles, rules, and guidelines of the University with respect to academic honesty may result in disciplinary action.

I agree that all answers provided are in my own words, and that I will not discuss the contents of this quiz with any of my fellow students until after the exam period has completed for everyone. Furthermore, any response that used generative AI tools has been rephrased into my own interpretation, and has been appropriately cited.

Signature: _____

Question 1

Topic: Lecture 7

Source: Lecture 7

What is a projective sentence? Why does this matter for the shift-reduce algorithm? (1)

Question 2

Topic: Lecture 5

Source: Lecture 5

Describe the difference between top-down and bottom-up parsing, including one advantage to each. (1)

Question 3

Topic: Lecture 5

Source: Lecture 5

Which operation dominates the complexity of CYK? Why? (1)

Question 4

Topic: Lecture 6

Source: Lecture 6

What does it mean for an Earley item to be “complete,” and what happens when it is? (1)

Question 5

Topic: Lecture 8

Source: Lecture 8

Why do we need both the state of the buffer and stack as features to SR parsers (ie, what is each contributing)? (1)

Question 6

Topic: Lecture 6

Source: Lecture 6

If you have a sentence (or, more generally, a language) with more nesting structures, would you prefer to parse with Earley or CYK? Explain. (2)

Question 7

Topic: Lecture 7

Source: Lecture 7

A deque is a data structure that mimics the operations of both a stack and a queue (ie, items can be added or removed to either end). Do you think this data structure would be sufficient to replace the stack and buffer from SR parsing? Justify your answer. (2)

Question 8

Topic: Lecture 8

Source: Lecture 8

In class, we discussed creating a feature vector as input to a classification model. What benefits (or disadvantages) might we see by replacing binary features with word embeddings, instead? (2)

Question 9

Topic: Long

Source: Lecture 8

Let's say you have a friend who is developing a constructed language (conlang) for the epic fantasy novel she is writing, but the only language she knows is English, and she is just doing a word-for-word translation of English into this constructed language. She has no real knowledge of syntax, and has only ever thought that "some words come after other words" (she's thinking like a language model). How would you use treebanks and dependency parsers to demonstrate to her that there is a whole "hidden" structure that language must follow, and how would you help her develop a realistic grammar for her conlang? Do you think it would make more sense to build the grammar for a "modified English", and then do word-for-word translation, or to translate the words from English, and then build the grammar in the conlang? (3)

END OF QUIZ