Thank you for taking the Week 3 : Assignment 3.

Week 3 : Assignment 3

Your last recorded submission was on 2023-08-15, 16:02 Due date: 2023-08-16, 23:59 IST. IST

1) ***1 point***

Which of the following words contains both derivational as well inflectional suffixes:

1. regularity
2. carefully
3. older
4. availabilities

- ○ 1.
- ○ 2.
- ○ 3.
- ◉ 4.

2) ***1 point***

Let's assume the probability of rolling 1 two times in a row of a dice is p. Consider a sentence consisting of N random digits. A model assigns probability to each of the digit with the probability p. Find the perplexity of the sentence.

1. 10
2. 6
3. 36
4. 3

- ○ 1.
- ○ 2.
- ◉ 3.
- ○ 4.

Assessment submitted.
X

3) ***1 point***

Assume that "x" represents the input and "y" represents the tag/label. Which of the following mappings are correct?

1. Generative Models - learn Joint Probability p(x, y)
2. Discriminative Models - learn Joint Probability p(x, y)
3. Generative Models - learn Posterior Probability p(y | x) directly
4. Discriminative Models - learn Posterior Probability p(y | x) directly

- [x] 1.
- [ ] 2.
- [x] 3.
- [x] 4.

4) ***1 point***

Which one of the following is an example of the Generative model?

1. Conditional Random Fields
2. Naive Bayes
3. Support Vector Machine
4. Logistic Regression

- ( ) 1.
- (•) 2.
- ( ) 3.
- ( ) 4.

5) ***1 point***

Natural language processing is essentially the study of the meaning of the words a human says or writes. Natural language processing is all around us all the time, but it also happens to be a way to improve the chatbot or product we interact with on a regular basis. Natural language processing is all about mimicking our own language patterns. Natural language processing can also improve the efficiency of business transactions and customer care. Natural language processing is the application of computer technology.

Suppose we want to check the probabilities of the *final words* that succeed the *string* language processing in the above paragraph. Assume d= 0; it is also given that no of unigrams = 78, no of bigrams = 122, no of trigrams = 130,, Question 6 and Question 7 are related to Question 5 corpus.

Solve the question with the help of **Kneser-Ney backoff technique.**

What is the continuation probability of *"is"*?

1. 0.0078
2. 0.0076
3. 0.0307
4. 0.0081

- ( ) 1.
- ( ) 2.
- ( ) 3.

Assessment submitted.
X

◉ 4.

6) ***1 point***

What will be the value of P(is| language processing) using Kneser-Ney backoff technique and choose the correct answer below. . Please follow the paragraph in Question .

1. 0.5
2. 0.6
3. 0.8
4. 0.7

○ 1.
○ 2.
◉ 3.
○ 4.

7) ***1 point***

What is the value of P(can| language processing)? Please follow the paragraph in Question 5

1. 0.1
2. 0.02
3. 0.3
4. 0.2

○ 1.
○ 2.
○ 3.
◉ 4.

8) ***1 point***

Which of the following morphological process is true for motor+hotel → motel?

1. Suppletion
2. Compounding
3. Blending
4. Clipping

○ 1.
○ 2.
◉ 3.
○ 4.

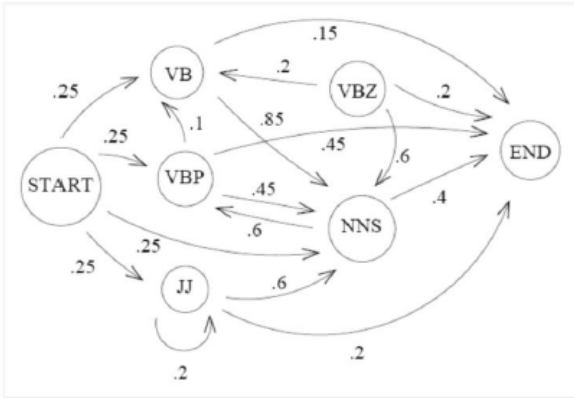
9) ***1 point***

Assessment submitted.
X

Consider the HMM given below to solve the sequence labeling problem of POS tagging. With that HMM, calculate the probability that the sequence of words "free workers" will be assigned the following parts of speech;

VB NNS

	free	*workers*
JJ	**0.00158**	**0**
NNS	**0**	**0.000475**
VB	**0.00123**	**0**
VBP	**0.00081**	**0**
VBZ	**0**	**0.00005**



The above table contains emission probability and the figure contains transition probability

1. $4.80 * 10^{-8}$
2. $9.80 * 10^{-8}$
3. $3.96 * 10^{-7}$
4. $4.96 * 10^{-8}$

- ○ 1.
- ○ 2.
- ○ 3.
- ◉ 4.

10) ***1 point***

Which of the following is/are true?

1. Only a few non-deterministic automation can be transformed into a deterministic one
2. Recognizing problem can be solved in linear time
3. Deterministic FSA might contain empty (ε) transition
4. There exist an algorithm to transform each automation into a unique equivalent automation with the least no of states

- ☐ 1.
- ☑ 2.
- ☐ 3.
- ☑ 4.

You may submit any number of times before the due date. The final submission will be considered for grading.

Submit Answers

Assessment submitted.

X