

START OF QUIZ

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Question 1

Topic: Lecture 4

Source: Lecture 4

Iterative algorithms often require a stopping condition. Briefly explain why this is necessary, and why perplexity is a metric to use for stopping HMMs. (2)

Question 2

Topic: Lecture 3

Source: Lecture 3

Explain why HMMs are a generative model, and how that differs from a discriminative model. (1)

Question 3

Topic: Lecture 2

Source: Lecture 2

When is it more appropriate to use hierarchical clustering than k-means? (1)

Question 4

Topic: Lecture 2

Source: Lecture 2

Why do outliers cause problems for clustering algorithms like k-means? How can we deal with them? (1)

Question 5

Topic: Lecture 3

Source: Lecture 3

Imagine that we are doing machine translation instead of POS-tagging. What would be the equivalent of emission probabilities and transition probabilities? Explain. (2)

Question 6

Topic: Lecture 4

Source: Lecture 4

What is the main difference between the Viterbi algorithm and the Forward algorithm, and why does it allow us to find the optimal path through a sequence? (1)

Question 7

Topic: Lecture 1

Source: Lecture 1

When is dynamic programming more efficient than brute force programming? (ie, what assumptions do we make about a problem when we use dynamic programming?) (1)

Question 8

Topic: Lecture 1

Source: Lecture 1

Do you think cosine similarity is more similar to Hamming distance or Levenshtein distance? Explain. Also briefly explain how it differs from your choice. (2)

Question 9

Topic: Long

Source: Lecture 3

In class, we built a collocation matrix for a bigram language model. Modify the function so that it can handle a trigram language model and implements "add-alpha" smoothing, instead of "add-one" smoothing. (3)

END OF QUIZ