

CIS 620, Advanced Topics in Deep Learning, Spring 2024

Post-Quiz Week 5

Due: Sunday, February 25, 11:59pm

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This 'quiz' should take less than 10 minutes; the goal is just to get you to remember what you read or discussed in class. (but look up things you don't know) Answers can each be a couple of sentences.

1. What is the difference between decoding, filtering and smoothing?

Ans: Decoding is the process of generating text from a model, filtering involves deciding which data improves model performance, and smoothing is the process of creating an approximating function to capture patterns in data while reducing noise.

2. Does ChatGPT store the new information it gets after querying for the latest sources based on RAG? Or what does it do with it?

Ans: ChatGPT does not store new information it retrieves. In the context of RAG, new information obtained from querying is used temporarily to generate responses and is not permanently stored or used to update the model's knowledge base.

3. Can ChatGPT choose between a bad and a good source of information? Are there a specific set of sources that are used?

Ans: ChatGPT, as part of the RAG framework, can differentiate between more and less useful sources to some extent by evaluating the relevance of the retrieved documents to the query. It does not choose sources based on "good" or "bad" but relies on the relevance scores from the retrieval component

4. Now that LLMs can query to update their current knowledge, read and write intermediate results, and be called through API, what are the remaining limitations that need to be addressed? And how might one address them?

Ans: Current limitations include the models' inability to understand context deeply, memory limitations, bias in training data, lack of commonsense reasoning, and the challenges in verifying factual accuracy. Addressing these could involve developing better context understanding mechanisms, reducing biases through more diverse training datasets, improving commonsense reasoning abilities, and enhancing fact-checking capabilities