Quiz

Product education quiz [watsonx.ai PoX L4]

Congratulations, you passed!

Your score	Passing score	Date
80% (8 of 10) answered correctly	**75%**	**08 Dec 2023**

Review quiz results

2 incorrect answers

Question 2

There are a number of challenges with the publicly available data repositories that are being used to train many of the open source foundation models. Which of the below are examples of concerns that IBM has when building trustworthy and efficient foundation models aimed at business use?

- ○ Secondary survey analysis data, absence of informed consent-waivers, and censorship.
- ✓ ○ Pirated content, copywrited materials, and issues with fairness in biased datasets.
- ○ Acquisition, curation and provenance.
- ✗ ◉ Undocumented data collection methods, personally identifiable information (PII), and the cost of sustainability.

are the advantages of this approach?

- ✓ ○ This approach is computationally more cost effective (requiring less labeled data for increased efficiency), and only requires a single model with an interchangable adapter.
- ○ This approach allows for the pinpointing of entities, which enhances the LLM's precision and accuracy in recognizing and classifying language pairs.
- ○ This approach allows for customization of models by re-training on billions of parameters (based on labeled data) to meet the specific needs and objectives of a single task.
- ✗ ◉ This approach of tuning allows for full control and interpretability of prompts, which reduces potential biases and provides generated text that can be interpreted in a meaningful way.

✓ 8 correct answers

Question 1

When whiteboarding a large language model (LLM) strategy session with a client, which one of the following best describes the benefits of a semantic search over a syntactic search?

- ○ Semantic search systems perform very well with complex queries, taking less time to process and return requests, leading to an improved user experience.
- ✓ ◉ Semantic search systems look beyond literal keywords in order to retrieve information. The result may not match the query word-for-word, but would still be highly relevant without necessitating business jargon.
- ○ Semantic search systems have minimal complexity which are simple to implement, requiring insignificant effort and resources to configure and maintain.
- ○ Semantic search systems come at a lower cost in terms of both hardware and labor which means decreased implementation time.

Question 3

You are discussing the value proposition of a retrieval-augmented generation (RAG) PoX to a Line of Business (LoB) executive who is keen to understand the concerns with LLMs from other

- [x] Source of truth
- [ ] Information currency
- [ ] Business relevance
- [ ] Hallucination

Question 4

Most traditional application programming frameworks and machine learning (ML) algorithms are deterministic, which means they will yield the same output each time they are given identical input. There are many scenarios where large language models (LLMs) are not deterministic. What is a scenario where a LLM would NOT exhibit deterministic behavior?

- [ ] For scenarios involving classification.
- [ ] When inferencing prompts against a model with less than 1 billion parameters.
- [ ] When performing named-entity recognition (NER).
- [x] If the model interface's Decoding parameter is set to the Sampling parameter.

Question 5

How does the retrieval-augmentation generation (RAG) overcome complications from natural language processing (NLP) which arise when the user asks a question or makes a request, but the keywords they enter contain multiple meanings?

- [x] Embeddings created by LLMs are based on a transformer architecture which understands context and word positioning which drives semantic search.
- [ ] Using the LangChain framework to create a sequence of calls called grammatical tagging which determines the portion of user input based on its use and context.
- [ ] Vector databases are used to extract subjective qualities like attitudes, emotions, and suspicion from user input.
- [ ] Large language models perform semi-supervised deep learning to reduce the reliance on annotated data in order to tune the algorithm.

Retrieval-augmented generation (RAG) is an AI framework that improves LLM-generated responses by grounding the model on external sources of knowledge. In order to provide domain-informed responses in an economical way, what additional components does a system incorporating RAG require?

- ◯ Prompt templates, parsing and sequencing calls, and maintaining session states between calls.
- ◯ Chatbots, generative question answering, and interaction with APIs.
- ◯ Standard tuning hardware, supported WML APIs, and call sequencing.
- ✓ ◉ A knowledge base, a method of searching and retrieve user-requested information, and an LLM.

Question 7

Vector databases are systems which store, index and retrieve high-dimensional numerical vectors that can be used as the back-end knowledge base for the retrieval-augmented generation (RAG) framework. Which of the below are used as inputs to model the creation of vector embeddings, that can be as small as a character or as large as a sentence?

- ◯ Relics
- ◯ Summaries
- ✓ ◉ Tokens
- ◯ Generators

Question 8

IBM LLM architectures are quantization-friendly without compromising on accuracy. What are the benefits of this technique?

- ✓ ◉ Quantization-friendly architectures can be compressed down to a lower bit-rate in order to run on smaller Graphics Processing Units (GPUs) more efficiently at a lower cost.
- ◯ Quantization-friendly architectures are based on modern Hopfield networks which result in 20x smaller parameter footprints and require no transformers.

- ◯ Quantization-friendly architectures have advantages with model tuning and adaptation which addresses many use cases.

Question 10

When operationalizing prompts against large language models (LLMs), application developers need to understand how to interact with the LLM endpoints and exchange information with them. Manually issuing prompts and retrieving the information from LLMs can be complex. What is the name of the open source framework that simplifies many of the application development tasks involved in integration LLMs?

- ◯ DevGPT
- ✓ ◉ LangChain
- ◯ OpenLLM
- ◯ PyLLM

Done