

AI Training on Spring AI: Integration of AI Components in self-developed Software

This AI training course provides a comprehensive insight into the implementation of AI-supported functions with the Retrieval Augmented Generation pattern using the latest Java Spring library. With a mix of theoretical explanations and practical exercises, you will learn to develop and customize advanced AI components such as a chat assistant.

We will learn how the retrieval-augmented generation pattern for AI text generation works. Basic concepts such as models, embeddings and vector-based databases will be introduced. We will delve into the use of prompting techniques and the interplay between retrieval and generation. The pattern uses a two-step approach, first retrieving relevant text fragments from a vector-based database and then using generation models to formulate an answer. Emphasis is placed on both the efficiency of the query and the quality of the generation.

The user interface is developed using Angular as an example in order to learn best practices for handling streamed AI responses.

This AI course is interactive and hands-on. You will have the opportunity to customize content and bring in specific company examples to get the maximum benefit for your own software development.

Course Contents

- Spring AI is a new addition to the Spring Framework that enables us to work with AI chat models in enterprise applications.
- Introduction to the theoretical background of AI models: basic concepts and principles behind the development of AI chat assistants are presented. This includes an overview of various AI techniques such as machine learning, natural language processing, and neural networks.
- Fundamentals of Spring AI: Introduction to the abstract concepts that serve as the basis for developing AI applications.
- Core abstractions: Explanation of the core abstractions of Spring AI, which enable different implementations and allow for easy component replacement with minimal code changes. This covers the ChatClient/StreamingChatClient interfaces and their implementations for OpenAI, Azure OpenAI, Ollama, VertexAI, Huggingface, Bedrock/Llama2, Bedrock/Anthropic, Bedrock/Titan, Bedrock/Cohere, as well as abstractions such as EmbeddingClient and ImageClient and their model implementations.
- Higher-level functionalities: Introduction to Spring AI's higher-level functions for handling common use cases such as "questions and answers about your documentation" or "chatting with your documentation."
- Integration with Spring ecosystem projects: Explanation of how Spring AI can be integrated with other projects in the Spring ecosystem, such as Spring Integration, Spring Batch, Spring Data, Spring Cloud GCP, Spring Cloud, etc.
- Setup simplification: Use of Spring Boot Starters to simplify the setup of essential dependencies and classes, and introduction of sample applications to explore the project's features.
- Using Spring CLI: Introduction to the new Spring CLI project, which allows you to get started quickly by using the "spring boot new ai" command for new projects or "spring boot add ai" to add AI capabilities to an existing application.

Target Group

- Software developers and architects

Course Target

You will learn how to integrate AI components into individual software with Spring AI in a practical way. The focus is on the retrieval augmented generation pattern, the implementation of generative AI functions and the reliable connection of LLMs in Java applications.

This Course in the Web



You can find the up-to-date information and options for ordering under the following link:

www.experteach-training.com/go/EAIC

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Ceresstraat 1 · 4811 CA Breda · Phone: +49 6074 4868-0 · Fax: +49 6074 4868-109 · info@experteach.de · www.experteach-training.com