Updated on 11/10/2024

Sign up

Pinecone training: Vector database

2 days (14 hours)

Presentation

With our Pinecone training course, you'll learn how to manage the reference vector database for your Artificial Intelligence needs.

Our comprehensive program will teach you the fundamentals of vector databases (how they work, their importance in the AI era, embedding, index management...).

During our training session, we'll introduce you to Pinecone's complete architecture, and show you how to manipulate data, whether for insertion, filtering or searching.

You'll learn how to convert text to vectors and orchestrate your LangChain pipelines efficiently to benefit from the power of LLMs.

Finally, our Pinecone training course will teach you optimization methods and strategies to reduce your operating costs.

Objectives

- Mastering index creation and management on Pinecone
- Know how to perform queries
- Efficiently integrating language models in Pinecone
- Optimize performance and manage associated costs

Target audience

- Data Engineers

- Cloud engineers
- AI Engineers
- Database administrators

Prerequisites

- Basic knowledge of Python
- Basic knowledge of databases

PINECONE TRAINING PROGRAM

INTRODUCTION TO PINECONE

- Introducing Pinecone
- Pinecone's role in the use of AI
- Vector database use cases
- Architectural overview of Pinecone
- Installation
- Initial setup and getting started

VECTOR DATABASES

- What is a vector database?
- Understanding how a vector database works
- Understanding the importance of vector research
- Traditional databases vs. vector databases
- Presentation of embeddings
- The distance metrics commonly used in Pinecone
- Creating and managing your index

INDEXING AND QUERIES ON PINECONE

- Insert data
- Queries to find similar vectors
- Using metadata to filter search results
- Updating and deleting data
- Managing datasets
- Managing RAG documents
- Hybrid research
  - Understanding hybrid research
  - Encoding sparse vectors
  - Extracting sparse vectors
  - Interrogating sparse vectors
- Best practices for maintaining index quality

LLM INTEGRATION

- Introduction to language models and their application to Pinecone
- Convert text to vectors
- Creating processing chains with LangChain
- Practical examples of using language templates with Pinecone
- How to manage large language models
- How to solve common problems?

OPTIMIZATION

- Tips for optimizing Pinecone performance
- Strategies for updating models on proprietary data
- Best practices for managing costs
- Keeping track of your consumption
- Integration
  - Amazon Bedrock
  - Amazon SageMaker
  - ElasticSearch
  - Monitoring with Datadog

Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire is used to check correct acquisition.

skills.

Sanction

A certificate will be issued to each trainee who completes the course.