Day 1: Foundations and practical integrations

Registration (8.30 – 9.00)
Welcome and overview (9.00 – 9.30)

- Introduction to AI, LLMs, and their relevance to Delphi applications.
- Course objectives and structure.
- Envisioning the future: exploring potential AI-driven solutions in Delphi applications.

Module 1: Understanding LLMs and embeddings (9.30 – 11.00)

- Quick overview of LLMs, embeddings, and their use cases.
- Hands-on: Setting up a Delphi project with API integration for embeddings.

Break (15 minutes)

Module 2: Connecting to AI APIs with Delphi (11.15 – 12.00)

- Making REST API calls to access LLM services.
- Handling responses and integrating output into Delphi applications.
- Hands-on: Building a chatbot in Delphi using LLM APIs and custom data.

Module 3: Introduction to Vector Databases (12.00 – 12.30)

- Overview of vector databases and their role in AI-driven applications
- Integrating vector databases into Delphi applications for efficient data retrieval.
- Hands-on demo: Connecting and querying a vector database.

Lunch Break (1 Hour)

Module 4: Advanced application with Retrieval-Augmented Generation (13.30 – 15.00)

- What is a RAG, and how it improves LLM responses.
- Hands-on: Creating an intelligent assistant using RAG in Delphi.

Break (15 minutes)

Module 5: Agents and their applications (15.15 – 16.45)

- What are agents? Automating workflows and tasks using LLMs and agents.
- Integrating simple agent behaviors in Delphi applications.
- Hands-on: Building a basic agent-driven application using an LLM.

Wrap-up and Q&A (30 Minutes)

Day 2: Customization, security, and deployment

Module 6: Fine-Tuning LLMs (8.30 – 10.30)

- Overview of fine-tuning: why and how it works.
- Preparing a dataset for fine-tuning.
- Hands-on: Walkthrough of fine-tuning a small LLM and integrating the model output into Delphi.

Break (30 Minutes)

Module 7: Embedding and advanced data applications (11.00 – 12.30)

- More complex use of embeddings (e.g., semantic search, clustering).
- Optimizing embedding-based AI interactions in Delphi applications.

Lunch Break (1 Hour)

Module 8: Code generation (13.30 – 14.00)

- Working with your source code to analyse, find bugs and generate new code.
- Use smart solutions to help you code faster and better.

Module 9: Security, ethics, and optimisation (14.00 – 15.00)

- Ethical considerations and security best practices for AI applications.
- Optimizing API calls, reducing latency, and ensuring secure data handling.

Break (15 minutes)

Module 10: Wrap-up (15.15 – 16.45)

- Review of what you have learned
- Discussion on applicability in your own environment

Closing session and Q&A (30 Minutes)