Updated 04/26/2024

Sign up

LLM training

3 days (21 hours)

Presentation

These transformer-based language models are powerful tools for a variety of linguistic tasks. Our LLM training course will teach you how to use this language model.

During this course, you'll use a variety of techniques, practices and playbooks to create products that harness the power of language templates.

You'll gain an in-depth understanding of Transformer architecture and all its variants. What's more, you'll develop an intuition for the architecture and its impact on your decisions.

The course will teach you how to create advanced LLM pipelines to group text documents and explore the subjects to which they belong.

As with all our courses, our LLM course will be presented to you with its latest features (at the time of writing).

Objectives

- Understand the architecture of underlying Transformer models such as BERT and GPT
- Learn how to select a language template for your needs
- Understanding how LLMs work
- Optimize LLMs for specific applications

Target audience

- Developers
- IT professionals

Prerequisites

- Basic knowledge of natural language processing (NLP) and linguistic modeling
- Basic computer and programming skills
- Understanding tokenization

OUR LLM TRAINING PROGRAM

Training data

- Ingredients of an LLM
- Pre-training data requirements
- Popular pre-training data sets
- Pre-processing of training data
- Exploiting the characteristics of pre-training data sets
- Bias and fairness issues in pre-training datasets Tokenization, learning

objectives and architectures

- Vocabulary and tokenization
- Learning objectives
- The architecture
  - Encoder-only architectures
  - Encoder-decoder architectures
  - Decoder-only architectures
- Summary

Adapting LLMs to your use case

- Navigating the LLM landscape
  - Who are LLM's suppliers?
  - Model flavors
- How do you choose an LLM for your job?
- LLM access and loading
- Decoding strategies

Text generation with GPT templates

- Using text generation templates
- Introduction to prompt engineering
- Advanced prompt engineering
- Reasoning with generative models
- Checking results

Extended language multimodal models

- Vision transformers
- Multimodal integration models
  - BLIP 1: Connecting text and images
- Make text generation models multimodal
  - BLIP-2: Bridging the gap between modalities
  - Multimodal data pre-processing
  - Use case 1: image subtitling
  - Use case 2: multimodal chat-based messages Creation of

text integration templates

- Integrating models
- What is contrastive learning?
- SBERT
- Creating an integration model
- Refining an integration model
- Unsupervised learning

Recovery Enhanced Generation (RAG)

- The need for RAG
- Typical scenarios
- The RAG pipeline
- RAG for memory management
- RAG for the selection of training examples in context
- RAG for model learning
- RAG limits
- RAG vs. long context
- RAG vs fine-tuning

Companies concerned

This 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 enabling 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 with regard to 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 training: 60% Practical, 40% Theory. Training material distributed in

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 verifies the correct acquisition of skills.

Sanction

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