Course : Artificial intelligence for developers

Practical course - 3d - 21h00 - Ref. GIA
Price : 2320 CHF E.T.

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NEW

Artificial intelligence (AI) does not replace web developers. It complements them and helps them to develop tomorrow's web applications more rapidly. In this hands-on training course, you'll learn the methods and tools you need to make the most of this new form of machine control, and boost your productivity while controlling the various costs of AI tools.

Teaching objectives

At the end of the training, the participant will be able to:

- Master the basics of AI computing architectures
- IA tools for full-stack web developers
- Prepare upstream prompts to create or modify a web application
- Develop a web application with AI prompts and little casual development
- Implementing fully local AI
- Applying good development practices for AI

Intended audience

Web developers, integrators, software architects.

Prerequisites

Basic knowledge of HTML, CSS and JavaScript.

Practical details

Hands-on work

Des exercices et travaux pratiques permettront de mettre en œuvre les concepts abordés.

Teaching methods

Each new theoretical concept is immediately applied in practice.

Course schedule

PARTICIPANTS

Web developers, integrators, software architects.

PREREQUISITES

Basic knowledge of HTML, CSS and JavaScript.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

1 Introduction to artificial intelligence

- AI overview.
- AI, machine learning, deep learning, symbolic versus statistical.
- Large Language Model, text embeddings, transformers.
- Natural Language Processing, GPT, Tokens.
- Exploring the Vector Database and the GPT-Generated Unified Format (GGUF).
- The main AI tools in SaaS mode.
- LLM querying (prompt engineering).
- Web architecture and AI.

Hands-on work

Avec l'aide d'un Large Language Model (LLM), écrire une application JavaScript qui relève un challenge d'IA symbolique comme la génération de grille de sudoku.

2 Visual Studio Code (VSCode) and GitHub Copilot

- VSCode, GitHub Copilot, prerequisites for use.
- GitHub Copilot chat.
- Use Copilot directly from a file.
- Define a function and its implementation.
- Use a function.

Hands-on work

Write an application that generates web pages from a prompt sent to an LLM.

3 Programming by prompt

- Why make full, detailed prompts?
- Prompt writing techniques.
- Role prompting, Few-Shot Prompting, Chain-of-thought (CoT).
- Iteration, output format, Self-Consistency.
- Negation, modularity, clarity and conciseness.
- Strong and weak LLM coupling.
- Transform your prompt into a web application.
- Prompt for modification.
- Prompt for all stages of a project.
- Prompt ideation, specification, design, coding, testing, deployment.

Hands-on work

Make a web application specification prompt that gives the positive news of the day.

4 Cloud tools

- Various cloud services (OpenAI, Claude, etc.).
- API key management.
- Tariff typology.
- Development assistance : Lovable, Bolt.
- GitHub Copilot, Windsurf, Continue.dev.

Hands-on work

Develop and deploy a web application using only an AI development assistant.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

5 LLM

- LLM architecture.
- Use the concepts of temperature and top_p.
- Features: summarization, classification, information extraction.
- Structured JSON output format.
- Study of the GGUP file.
- LLMs on the market.
- LLM on the Internet (SaaS).
- Install LLM locally.
- Introducing LM Studio and Hugging Faces.
- Text embedding, cosine similarity, dimension reduction.
- RAG architecture.

Hands-on work
Write a RAG (retrieval augmented generation) technical architecture specification for LLM exploring a local and confidential document database.

6 Tools for developing with AI

- The OpenAI API.
- Hugging Face: the GitHub of AI.
- LLM, transformers, datasets.
- LangChain: API for AI.
- LM Studio: running AI components locally.
- Best practices in tool use.

Hands-on work
Make a local "ChatGPT" that explores a confidential document base with a RAG architecture.

Dates and locations

REMOTE CLASS
2026 : 11 Feb., 1 July, 9 Sep., 21 Oct.