

AI-301: ChatGPT/GPT API Prompt Engineering for Developers (preliminary version)

Planned Course Length: 8 training hours

Course Description:

Artificial intelligence has become an extremely important area for IT professionals and engineers in the past 10-20 years with the scientific breakthroughs and practical applications of deep learning and more recently of generative AI systems, especially with its Large Language Model (LLM) variant such as OpenAI's ChatGPT and Google's Bard. Due to its importance and impact on every aspect of our lives, understanding the concepts, functionalities and practical usage of AI systems is quickly becoming essential for all IT and other technical professionals as well as for managers with technical background.

This training focuses on ChatGPT/GPT API Prompt Engineering and teaches participants the following topics (preliminary version):

- Prompt Engineering fundamentals
- Techniques for effective prompt engineering
- Best practices for prompt engineering
- Advanced prompt engineering strategies
- Code Generation using GPT Prompt Engineering

Besides gaining a basic understanding of the concepts of prompt engineering, students will also make extensive lab exercises using the OpenAI ChatGPT/GPT Python API to see how these concepts work in practice.

This training is part of the AI portfolio of Component Soft which explores essential AI topics, such as ChatGPT and GPT API Prompt Engineering for Developers, Deep Learning Basics, Large Language Models (LLM) Basics, and Generative AI Basics.

Structure: 50% theory, 50% hands on lab exercises

Target audience: Software developers and other IT and technical professionals as well as managers with technical background who want to understand the concepts, techniques and best practices of ChatGPT/GPT prompt engineering with the ChatGPT/OpenAI GPT Python API.

Prerequisites: Basic understanding of IT systems and programming concepts. Basic Python programming skills.

Detailed Course Outline (preliminary version)

Module 1. Prompt Engineering fundamentals

- Large Language Models (LLMs)
- Main types and versions of LLMs (GPT, ChatGPT, Bard)
- What is prompt engineering?
- Understanding and accessing OpenAI GPT 3.5-turbo and GPT4 APIs
- Lab: Your first query and answer session via the OpenAI Python API

Module 2. Techniques for effective prompt engineering

- Prompt selection factors
- Prompt engineering terminology and concepts
- Common challenges
- Using clear and specific instructions
- Making constraints explicit
- Using context and examples
- Receiving more or less verbose answers
- Lab: Practicing effective prompts OpenAI Python API

Module 3. Best practices for prompt engineering

- Iterative testing and refining
- Balancing user intent and model creativity
- Harnessing external resources and APIs
- Ensuring ethical usage and avoiding biases
- Lab: Using best practices of prompt engineering with the OpenAI Python API

Module 4. Advanced prompt engineering strategies

- Temperature and token control
- Prompt chaining and multi-turn conversations
- Adapting prompts for domain-specific applications
- Handling ambiguous or contradictory user inputs
- Lab: Using advanced prompt engineering strategies with the OpenAI Python API