Effective Prompting

AI in Business Course Series

Course Level:- Introduction

Course Duration:- 1 Day

Course Overview:

The course "Effective Prompting" is a comprehensive one-day program designed to provide students with a solid foundation in generative artificial intelligence. It is organised into eight modules, each focusing on different aspects of generative AI and its applications.

Module 1: Generative AI Basics

Module 2: LLM Capabilities

Module 3: Text Prompts

Module 4: Plug-ins & Extensions

Module 5: Image Prompts

Module 6: Code Prompts

Module 7: Potential Issues

Module 8: Prompt Uses

Throughout the course, the emphasis is on hands-on learning, with plenty of examples and practical exercises. By the end of the day, participants should feel confident in their understanding of generative AI and be able to apply their knowledge to a range of tasks, from automating mundane office work to crafting engaging content and even aiding in software development. The goal is to demystify AI and make it an accessible and useful tool for all.

Prerequisites:

Before coming on this course, it is highly recommended that participants have a good knowledge of AI tools and terminologies, particularly Large Language Models as implemented by either Open AI or Microsoft. An abbreviated version of this course is included as part of the AB02, AB03 and AB04 courses.

Participants will have access to a Teams version of Open AI and ChatGPT for completion of examples and practical exercises. Participants will additionally have access to an Office 365 lab environment fully licensed for Microsoft's 365 Copilot with sample data pre-provisioned.

There will be continued access to the lab environments for 30 days after your course (subject to availability)

Module 1 Generative AI Basics

In Module 1 participants will delve into the foundational aspects of artificial intelligence, starting with a general introduction to Data AI and Search AI, which cover data processing and retrieval technologies. The module then progresses to explain the core principles of Machine Learning and Deep Learning, emphasizing how these technologies underpin the broader field of AI by enabling systems to learn from data and make decisions.

Finally, the focus shifts to Generative AI, where students will explore how AI can generate text, images, and other forms of media, illustrating the practical and transformative applications of AI technologies. This module aims to provide a robust understanding of key AI concepts and their implications in various industries.

Approx duration:- 30 minutes

Module 2 LLM Capabilities

In Module 2 students will delve into the capabilities and functionalities of Large Language Models (LLMs) like ChatGPT. This module offers a comprehensive look at how these models can be utilised for various tasks, highlighting practical applications and technical details. Here's a summary of what will be covered:

  - Completions and Chat Conversations: Understanding how LLMs generate text completions and facilitate interactive chat conversations, providing insight into their conversational abilities.

  - Assistants and System Messages: Exploring how LLMs can act as digital assistants, including how system messages can be used to control and guide the behavior of these models in interactive settings.

  - Understanding Prompt Components: Learning about the different parts of a prompt, including how historical context can influence model responses and the strategic use of prompt components to enhance output quality.

  - Privacy, Security, and Data Residency: Discussing the importance of data privacy and security when working with LLMs, including how data residency considerations impact model deployment.

  - Memories: Exploring the capability of LLMs to maintain contextual memories across sessions, enhancing their ability to provide consistent and relevant responses over time.

  - GPT Models and Answer Temperatures: Examining the different versions and configurations of GPT models, including how answer temperatures can be adjusted to vary the creativity and certainty of responses.

  - Prompt Optimisation: Delving into techniques for optimising prompt size and token usage to maximise model performance within the constraints of specific applications.

  - Retrieval Augmented AI: Learning about augmentation techniques that enable LLMs to retrieve and integrate external information to enhance the accuracy and relevance of their outputs.

This module aims to equip students with a deep understanding of how to leverage the full range of capabilities offered by LLMs, enabling them to effectively implement these powerful tools in various contexts.

Approx duration:- 60 minutes

Module 3 Text Prompts

In Module 3 students will explore the art and science of crafting effective prompts for interacting with Large Language Models (LLMs). This module is designed to enhance students' ability to elicit precise and useful responses from AI through strategic prompt design. Here's a summary of what will be covered:

   - Prompt Roles: Understanding the function of roles within prompts, and how assigning specific roles to the AI can shape its responses and interactions.

   - Prompt Instructions: Learning how to formulate clear and direct instructions in prompts to guide the AI towards producing the desired outcome.

   - Real-Time Information: Discussing the use of prompts that require real-time information, and how to manage expectations and limitations of AI in such scenarios.

   - Importance of Context: Delving into the significance of context in prompt formulation, ensuring that prompts provide sufficient background to generate relevant and accurate responses.

   - Use of Examples: Exploring how incorporating examples within prompts can guide the model's output style, tone, and format, making it more aligned with user needs.

   - Output Formats: Understanding how to specify output formats in prompts to receive information in a structured and easily digestible format, such as lists, tables, or summaries.

   - The Question: Examining how the structure and clarity of the question within a prompt impact the effectiveness and precision of the AI's response.

This module aims to provide students with practical skills and knowledge to craft well-structured prompts that maximise the efficiency and relevance of responses from LLMs, enhancing the overall interaction quality with AI systems.

Approx duration:- 60 minutes

Module 4 Plug-ins & Extensions

In Module 4 students will learn about enhancing the functionality of Large Language Models (LLMs) through the integration of plug-ins and extensions. This module focuses on practical applications that expand the capabilities of LLMs beyond basic text generation. Here's a summary of what will be covered:

   - Internet Connectivity: Understanding how LLMs can be augmented with internet connectivity to fetch real-time data and provide more accurate and current responses.

   - Python/Code Execution: Exploring the capabilities of executing Python or other code directly within LLM environments, enabling complex computations and data analysis tasks.

   - Third-Party Plug-ins: Learning about the integration of third-party plug-ins that provide additional functionalities, such as specialised data processing or enhanced interaction capabilities.

   - Bring Your Own Data: Discussing the possibilities and methodologies for incorporating personal or proprietary data into LLM workflows to create more customised and relevant AI outputs.

This module aims to equip students with the knowledge to effectively use plug-ins and extensions, thereby maximising the utility of LLMs in diverse scenarios ranging from automated data analysis to dynamic content generation.

Approx duration:- 30 minutes

Module 5 Image Prompts

In Module 5, which focuses on advanced techniques for generating visuals using AI, students will delve into a variety of methods to refine the quality and style of images produced by AI tools. Here's a summary of what will be covered:

   - Style Modifiers: Learning how to apply specific stylistic adjustments to AI-generated images, enabling customization to better fit the desired aesthetics or branding requirements.

   - Quality Boosters: Exploring techniques to enhance the resolution, clarity, and overall visual impact of AI-generated images, ensuring they meet professional standards.

   - Understanding Repetition: Examining how repetition within visual elements can be used effectively in design, and how to instruct AI to either incorporate or avoid repetitive patterns based on the project needs.

   - Shot Types: Gaining knowledge about different types of camera shots (e.g., close-up, wide shot) and angles that AI can simulate to achieve varied visual storytelling effects.

This module aims to equip students with the skills to expertly guide AI in producing high-quality, tailored visuals, enhancing their ability to utilize AI in fields such as digital marketing, content creation, and graphic design.

Approx duration:- 30 minutes

Module 6 Code Prompts

In Module 6 students will explore how to effectively use Large Language Models (LLMs) for coding-related tasks. This module focuses on enhancing coding efficiency and accuracy through AI-assisted techniques. Here's a summary of what will be covered:

   - Debugging: Learning how to utilize LLMs to identify and fix bugs in code. This includes understanding how to phrase prompts that help pinpoint errors and suggest corrections.

   - Suggesting: Exploring how LLMs can assist in code completion and suggestion, speeding up the development process by providing accurate coding solutions and alternatives.

   - Documenting: Understanding the importance of clear documentation and how LLMs can help generate comprehensive and understandable documentation for code bases.

   - Clients and IDEs: Examining the integration of LLMs with various development environments and clients to enhance coding workflows. This includes how to set up and use AI tools within popular IDEs (Integrated Development Environments).

   - Power Platform: Discussing the application of LLMs in Microsoft's Power Platform to automate tasks, generate code for custom connectors, and create more efficient workflows.

This module aims to provide students with practical skills to leverage AI for coding purposes, enabling them to improve their programming efficiency, reduce error rates, and enhance overall project management.

Approx duration:- 30 minutes

Module 7 Potential Issues

In Module 7 students will learn about the various challenges and limitations associated with using Large Language Models (LLMs). This module is designed to provide a comprehensive understanding of the common pitfalls and how to mitigate them effectively. Here's a summary of what will be covered:

   - Content Filters: Exploring mechanisms to implement and manage content filters that prevent inappropriate or unwanted content generation by LLMs.

   - Data Bias: Understanding the sources and impacts of data bias in training AI models, and strategies to identify and reduce bias to ensure fairness and accuracy in AI outputs.

   - Hallucinations: Discussing the phenomenon where LLMs generate plausible but incorrect or nonsensical information, and how to recognise and correct such instances.

   - Recency Bias: Learning about the challenges associated with LLMs' tendency to overweight recent data, potentially overlooking important historical context or trends.

   - Tokens/Message Length: Examining the limitations related to the number of tokens or message length that LLMs can handle, and how to effectively manage these constraints in various applications.

This module aims to equip students with critical insights into recognising, addressing, and preventing common issues in the deployment and operation of LLMs, enhancing their effectiveness and reliability in practical applications.

Approx duration:- 30 minutes

Module 8 Prompt Uses

In Module 8 students will explore various practical applications of prompts within Large Language Models (LLMs). This module is designed to showcase how effectively constructed prompts can be leveraged to perform a wide range of tasks that enhance productivity and creativity in different settings. Here's a summary of what will be covered:

   - Summarisation: Learning how to use LLMs to condense large volumes of information into concise summaries, which is crucial for quick comprehension of lengthy documents or data sets.

   - Content Creation: Exploring how prompts can guide LLMs in generating content, such as articles, reports, and marketing materials, tailored to specific audiences and purposes.

   - Brainstorming: Utilising LLMs as brainstorming tools to generate ideas, concepts, and solutions, facilitating creative processes across various disciplines.

   - Fact-Checking: Understanding the use of LLMs to verify facts and data, enhancing the accuracy and reliability of content before publication or presentation.

- Reformatting: Learning how to employ LLMs to reformat text, making it suitable for different formats or platforms, such as converting prose into bullet points or formal reports into informal summaries.

- Intent Recognition: Examining how to craft prompts that help LLMs understand and respond to the underlying intent of queries, improving user interaction and satisfaction.

This module aims to equip students with the skills to utilise LLMs across diverse applications by crafting effective prompts, thereby maximising the utility of AI tools in solving real-world problems and enhancing operational efficiencies.

Approx duration:- 30 minutes