Quick Start to Prompt Engineering for Software Developers Training

Duration: **1 Day**

BILGINC IT Academy
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Become a Prompt Engineering Pro: Supercharge Your Coding Skills, Development Efforts and Processes with AI

Prompt Engineering offers coders and software developers a competitive edge by empowering them to develop more effective and efficient AI-driven solutions in their projects. By harnessing the capabilities of cutting-edge AI models like GPT-4, coders can automate repetitive tasks, enhance natural language understanding, and even generate code suggestions, boosting productivity and creativity. In addition, mastering prompt engineering can contribute to improved job security, as professionals with these in-demand skills are highly sought after in the rapidly evolving tech landscape.

Quick Start to Prompt Engineering for Coders and Software Developers is a one day course designed to get you quickly up and running with the prompting skills required to out AI to work for you in your development efforts. Guided by our AI expert, you'll explore key topics such as text preprocessing, data cleansing, GPT-4 tokenization, input formatting, prompt design, and optimization, as well as ethical considerations in prompt engineering.

In the hands-on labs you'll explore tasks such as formatting inputs for GPT-4, designing and optimizing prompts for business applications, and implementing multi-turn conversations with AI. You'll work with innovative tools like the OpenAI API, OpenAI Codex, and OpenAI Playground, enhancing your learning experience while preparing you for integrating prompt engineering into your professional toolkit.

By the end of this immersive course, you'll have the skills necessary to effectively use prompt engineering in your software development projects. You'll be able to design, optimize, and test prompts for various business tasks, integrate GPT-4 with other software platforms, and address ethical concerns in AI deployment.

Prerequisites

You should have incoming skills aligned with the topics in the course(s) below, or should attend as a pre-requisite:

- Building Intelligent Applications with AI and ML – Level 1
- Python Foundations

Who Should Attend

To gain the most from attending this course you should possess the following incoming skills:

- Basic knowledge of programming concepts and syntax in Python.
- Familiarity with common data formats such as CSV, JSON, and XML.
- Experience using command-line interfaces and basic text editing tools.
- Understanding of basic machine learning concepts and algorithms.

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What You Will Learn

Working in an interactive learning environment, led by our engaging expert, you will:

- Gain a solid understanding of prompt engineering concepts and their applications in software development and AI-driven solutions.
- Master the techniques for preprocessing and cleaning text data to ensure high-quality inputs for AI models like GPT-4.
- Develop expertise in GPT-4 tokenization, input formatting, and controlling model behavior for various tasks and requirements.
- Acquire the ability to design, optimize, and test prompts effectively, catering to diverse business applications and use cases.
- Learn advanced prompt engineering techniques, such as conditional text generation and multi-turn conversations, to create more sophisticated AI solutions.
- Practice creating prompts to generate, run, and test code in a chosen programming language using GPT-4 and OpenAI Codex.
- Understand the ethical implications and best practices in responsible AI deployment, ensuring fair and unbiased AI applications in software development.

Training Outline

1. **Introduction to Prompt Engineering**
   - Overview of prompt engineering and its importance in AI applications
   - Major applications of prompt engineering in business
   - Common challenges faced in prompt engineering
   - Overview of GPT-4 and its role in prompt engineering
   - Key terminology and concepts in prompt engineering
2. **Getting Things Ready: Text Preprocessing and Data Cleansing**
   - Importance of data preprocessing in prompt engineering
   - Techniques for text cleaning and normalization
   - Tokenization and n-grams
   - Stop word removal and stemming
   - Regular expressions and pattern matching
   - Lab: Hands-on exercise using Python and the NLTK library to preprocess and clean a sample dataset.
3. **GPT-4 Tokenization and Input Formatting**
   - GPT-4 tokenization and its role in prompt engineering
   - Understanding and formatting GPT-4 inputs
   - Context windows and token limits
   - Controlling response length and quality
   - Techniques for handling out-of-vocabulary tokens
   - Lab: Practice tokenizing text and formatting inputs using the GPT-4 Python API.
4. **Prompt Design and Optimization**
   - Master the skills to design, optimize, and test prompts for various business tasks.
   - Designing effective prompts for different tasks
   - Techniques for prompt optimization
   - GPT-4 system and user parameters for controlling behavior
   - Importance of prompt testing and iteration
   - Best practices for prompt engineering in business applications
   - Lab: Create and optimize prompts for a sample business task using the GPT-4 Python API.

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5. **Advanced Techniques and Tools in Prompt Engineering**
    - Learn advanced techniques and tools for prompt engineering and their integration in business applications.
    - Conditional text generation with GPT-4
    - Techniques for handling multi-turn conversations
    - Overview of tools for prompt engineering: OpenAI API, OpenAI Codex, and OpenAI Playground
    - Integration of GPT-4 with other software platforms and tools
    - Monitoring and maintaining prompt performance
    - Lab: Implement a multi-turn conversation with GPT-4 using OpenAI Codex and OpenAI Playground.
6. **Code Generation and Testing with Prompt Engineering**
    - Develop the skills to generate, integrate, and test AI-generated code effectively, enhancing productivity and creativity in software development projects.
    - Introduction to code generation with AI models like GPT-4
    - Designing prompts for code generation across programming languages
    - Techniques for specifying requirements and constraints in prompts
    - Generating and interpreting code snippets using AI-driven solutions
    - Integrating generated code into existing projects and codebases
    - Best practices for testing and validating AI-generated code
    - Lab: Practice creating prompts to generate, run, and test code in a chosen programming language using GPT-4 and OpenAI Codex.
7. **Ethics and Responsible AI**
    - Understand the ethical implications of prompt engineering and the importance of responsible AI deployment in business.
    - Ethical considerations in prompt engineering
    - Bias in AI systems and its impact on prompt engineering
    - Techniques to minimize bias and ensure fairness
    - Best practices for responsible AI deployment in business applications
    - Monitoring and addressing ethical concerns in prompt engineering