



Training 4 Programmers

To discuss this course and customizations:

Call: +1 434-509-5680 or Email: sales@training4programmers.com

Prompt Engineering for Programmers

Duration

2 days

Description

This comprehensive course on Prompt Engineering is designed for computer programming professionals seeking to enhance their skills in generating effective prompts. The course covers a wide range of topics, from understanding the basics of Prompt Engineering to mastering techniques for improving responses using pretrained models. It also provides a deep dive into text summarization, inference, transformation, and expansion, and their applications in various domains. The course offers hands-on experience with the OpenAI API for various tasks such as document summarization, making recommendations, transforming responses, and providing additional context. Furthermore, learners will explore the world of chatbots, learn to design effective chatbot prompts, and even build a custom chatbot using the OpenAI API. The course concludes with a recap of key concepts and a look at future trends in Prompt Engineering. This course is usually taught with Python, but other programming languages can be used. For the RAG portion of the class, PostgreSQL with vector extension is used. Pinecone or Chroma can be substituted for the vector search.

Objectives

- Understand the concept, importance, and applications of Prompt Engineering.
- Learn strategies for improving responses using pretrained models and various techniques like Zero-shot, Few-shot, Fine-tuning, and RAG.
- Master the iterative process of refining and improving prompts.
- Gain knowledge on text summarization and its applications, and learn to use OpenAI API for document summarization.
- Comprehend the basics of inference, techniques for accurate inference, and its applications, along with using OpenAI API for recommendations.
- Learn about text transformation and its use cases in software development, and use OpenAI to transform the voice and tone of responses.
- Understand the basics of text expansion, its applications, and use OpenAI API to provide additional context.
- Dive into the world of chatbots, learn to design effective chatbot prompts, and build a custom chatbot using OpenAI API.



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Prerequisites

No prompt engineering or generative AI experience is required. For the programming exercises, experience with selected programming language is needed.

Training Materials

All students receive comprehensive courseware covering all topics in the course. Courseware is distributed via GitHub in the form of documentation and extensive code samples. Students practice the topics covered through challenging hands-on lab exercises.

Software Requirements

Students will need a free, personal GitHub account to access the courseware. Student will need permission to install Docker Desktop, Visual Studio Code, and Visual Studio Code Extensions on their computers.

Outline

- Introduction
 - What is Prompt Engineering?
 - Definition and Importance
 - Historical Context and Evolution
 - Applications in Various Domains
- Understanding and Improving Responses
 - Pretrained Models and Prompt Engineering
 - Strategies for Effective Responses
 - Zero-shot
 - Few-shot
 - Fine-tuning
 - RAG (Retrieval-Augmented Generation)
- Iterating to Improve Prompts
 - Prompts are rarely Perfect the First Time
 - Refining and Improving Prompts
 - Zero-shot vs. Few-shot
 - Strategies to Iterate and Improve
 - Programmatically Prompt the OpenAI Conversation API
- Summarizing Text
 - Understanding Summarization
 - Types: Extractive vs. Abstractive



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- Common Use Cases and Applications
- Programmatically Use OpenAI API to Summarize Documents
- Inferring from Text
 - Basics of Inference
 - Techniques for Accurate Inference
 - Applications in Various Fields
 - Use OpenAI API to Make Recommendations
- Transforming Text
 - Understanding Text Transformation
 - Common Strategies and Approaches
 - Use Cases in Software Development
 - Use OpenAI to Transform the Voice and Tone of Responses
- Expanding Text
 - Basics of Text Expansion
 - Key Concepts and Strategies
 - Applications in Various Domains
 - Use OpenAI API to Provide Additional Context
- Chatbot
 - Introduction to Chatbots
 - Designing Effective Chatbot Prompts
 - Historical Context and Evolution
 - ChatGPT, GitHub Copilot, Microsoft Copilot 365
 - Build a custom chat bot using OpenAI API
- RAG (Retrieval-Augmented Generation)
 - Introduction to RAG
 - Key Concepts and Strategies
 - Applications in Various Domains
 - Enhance Prompt Engineering with RAG
 - Use OpenAI API to Implement RAG to Improve Chatbot Responses
- Conclusion
 - Recap of Key Concepts
 - Summary of Prompt Engineering Techniques
 - Applications and Future Trends