Azure OpenAI Boot Camp for Developer - TTAI2335

Hands-on Quick Start! OpenAI and Azure AI platforms, Generative AI, capabilities, AI models, prompt engineering and more

Duration: 2 Days
Skill Level: Intermediate
Available Format: Instructor-Led Online; Instructor-Led, Onsite In Person ; Blended; On Public Schedule

Designed for developers new to Azure OpenAI and OpenAI, offers an exceptional opportunity to harness AI's capabilities using the leading-edge Azure platform. This program is structured to give you a strong foundational understanding of AI and its diverse applications, from language translation to prediction modeling.

What You'll Learn

Overview

Immerse yourself in the transformative world of AI with the **Azure OpenAI Boot Camp for Developers**. This intensive, two-day program, designed for developers new to Azure OpenAI and OpenAI, offers an exceptional opportunity to harness AI's capabilities using the leading-edge Azure platform. This program is structured to give you a strong foundational understanding of AI and its diverse applications, from language translation to prediction modeling.

Guided by our Microsoft Azure-certified AI expert instructor, you'll gain modern hands-on skills using cutting-edge tools to implement innovative AI solutions at your workplace, resulting in smarter applications and improved operational efficiency. Throughout the course you'll explore five main themes: OpenAI and Azure OpenAI platforms, Generative AI, Azure OpenAI's capabilities, exploration of AI models, and

prompt engineering. You'll gain core skills and gain hands-on practice with major AI models including GPT-4, GPT-3, DALL-E, Codex, and Embedding, learning how to apply them on the job or in your projects in a practical way. You'll also become adept at prompt engineering, a skill that is essential to the successful deployment and performance of AI tasks.

You'll engage with a wide array of subjects, from experimenting with Azure OpenAI's features to fine-tuning GPT models, implementing embeddings and indexing, and establishing content filters. In addition, you'll learn about Azure OpenAI's workload management, access procedures, and responsible AI practices. This ensures that all AI applications developed are not only high-performing and efficient but also ethically sound and compliant with regulations.

At the end of this immersive course, you will have gained a deep understanding of the distinctive features of both OpenAI and Azure OpenAI platforms, developed advanced skills in prompt engineering and fine-tuning AI models, and gained hands-on experience with the applications of embeddings and indexing. Moreover, you will have the practical knowledge to apply these skills to improve your organization's AI capabilities, opening the door to a new level of innovative solutions, and preparing you for the AI-focused world of tomorrow.

Objectives

This course combines engaging instructor-led presentations and useful demonstrations with valuable hands-on labs and engaging group activities. Throughout the course you'll:

- Gain a solid comprehension of the OpenAI and Azure OpenAI platforms, their unique features, and their capabilities.
- Develop an in-depth understanding of prominent AI models such as GPT-4, GPT-3, DALL-E, Codex, and Embedding, and their potential applications.
- Learn to manipulate the output of AI models effectively using the principles of prompt engineering.
- Gain the ability to fine-tune AI models efficiently, enhancing their performance for specific tasks.

- Obtain practical knowledge in implementing embeddings and indexing, integral parts of machine learning tasks.
- Understand Azure OpenAI's responsible AI practices, access policies, and security measures, fostering ethical and compliant AI applications within your organization.
- Grasp the principles and best practices of creating a private Business GPT, a critical skill in leveraging AI technology for business-specific applications.
- Develop proficiency in setting up and configuring content filters within Azure OpenAI Studio, enhancing the relevance and appropriateness of AI output.

If your team requires different topics, additional skills or a custom approach, our team will collaborate with you to adjust the course to focus on your specific learning objectives and goals.

Audience

This Intermediate level course is geared for experienced technical professionals eager to deepen their understanding of AI and apply it in their work. Roles that would particularly benefit from attending include data scientists, machine learning engineers, AI researchers, and IT managers involved in AI strategy and deployment. This course is also well-suited for advanced tech enthusiasts who wish to get a comprehensive, hands-on introduction to the applications of OpenAI and Azure OpenAI technologies.

Pre-Requisites

To ensure a smooth learning experience and maximize the benefits of attending this course, you should have the following prerequisite skills:

- A basic understanding of artificial intelligence and its applications would help to quickly grasp the course content.
- A working knowledge of Python basics helpful but not required. Lab code will be supplied so you can simply run it for labs that require it.
- Basic Understanding of Data Structures
- Prior exposure to any cloud services platform (such as Azure, AWS, or Google Cloud) would be beneficial.

Next Steps / Follow-on Courses: We offer a wide varietyof follow-on courses and learning paths for Generative AI, AI for Business, GPT, Applied AI, Azure OpenAI, Google BARD, AI for

developers, testers, data analytics, machine learning, deep learning, programming, intelligent automation and many other related topics. Please see our catalog for the current **AI & Machine Learning Courses, Learning Journeys& Skills Roadmaps**, list courses and programs.

TTML5503 Introduction to AI & Machine Learning JumpStart

Agenda

Please note that this topics, agenda and labs are subject to change to cover the most recent technical trends or tools, and may adjust during live delivery based on audience skill level, interests and participation.

Day 1

Introduction to Azure & OpenAI

- Introduction to OpenAI and Azure OpenAI
- Core competencies and objectives of OpenAI and Azure OpenAI
- Distinctive features of both platforms
- Comparative evaluation of OpenAI and Azure OpenAI
- Comparison of OpenAI and Azure OpenAI

The Evolution of Generative AI

- What is Generative AI? A Primer
- Tracing the Historical Context of Generative AI
- Generative AI Across Industries: Case Studies
- The Building Blocks of Generative AI
- Overcoming Challenges in Generative AI
- Activity: Real-world Applications of Generative AI Explored

Navigating Through Azure OpenAI

- An In-Depth Look at Azure OpenAI
- Architecture and Infrastructure of Azure OpenAI
- Highlighting Key Features and Benefits

- Success Stories: Azure OpenAI in Action

Touring AI Models

- Meet the Models: GPT-4, GPT-3, DALL-E, Codex, and Embedding
- How AI Models Have Evolved Over Time
- A Comparative Study of Model Features
- Future-Forward: Upcoming Advancements
- Activity: Using Models in Real-world Applications

Prompt Engineering: Starting Out

- Decoding Prompt Engineering Basics
- Core Principles that Drive Prompt Engineering
- Why is Prompt Engineering Crucial?
- Addressing Common Challenges
- Activity: Hands-on Prompt Engineering Exercises

Day 2

Advanced Prompt Engineering: A Deep Dive

- Exploring Complex Topics in Prompt Engineering
- Key Strategies for Effective Prompting
- Real-world Examples for Advanced Prompt Engineering
- Pitfalls to Avoid
- Activity: Tackling Advanced Prompt Engineering Scenarios

Azure OpenAI Workloads and Accessibility

- Azure OpenAI Workload Overview
- Performance and Scalability Metrics
- Gaining Access to Azure OpenAI Services
- Understanding Service Reliability

- Activity: Hands-on Azure OpenAI Use Cases

Mastering Fine-Tuning: GPT Models

- Lesson 8.1: Introduction to GPT Model Fine-Tuning
- Lesson 8.2: The Math Behind Fine-Tuning
- Lesson 8.3: Tips for Effective Fine-Tuning
- Lesson 8.4: Challenges and Solutions in Fine-Tuning
- Lesson 8.5: Lab: Fine-Tuning a GPT Model Hands-on

Embeddings and Indexing: A Closer Look

- What are Embeddings and Indexing?
- The Theoretical Basis of Embeddings
- Practical Uses of Embeddings and Indexing
- Overcoming Challenges in Embeddings
- Activity: Embedding and Indexing Exercises

Content Filtering: The How-To's

- Unpacking Content Filtering in Azure OpenAI
- The Math Models Behind Filtering
- Effective Filtering Best Practices
- Ethical Aspects of Content Filtering
- Setting Up Content Filters in Practice

Crafting a Business-Specific GPT

- The Concepts of LangChain and Llama Index
- Best Practices for Business GPT Applications
- Guidelines for Business GPT Creation
- Anticipating Challenges and Future Trends
- Activity: Developing a Business-Specific GPT

Security and Monitoring: A Practical Guide

- Using Azure Tooling for Enhanced Security
- Secure Deployment Strategies
- Monitoring Best Practices
- Future Challenges and Solutions
- Activity: Setting Up Security Measures and Monitoring

Responsible AI Practices in Azure OpenAI

- An Introduction to Responsible AI
- Navigating Ethical Considerations
- Azure OpenAI's Access Limitations
- Legal Aspects of AI Access Policies
- Activity: Implementing Ethical Practices in AI
- Responsible AI practices

Optional / Time Permitting Capstone Project

- Comprehensive project that integrates learning from all modules
- Project review and feedback session

All applicable course software, digital courseware files or course notes, labs, data sets and solutions, live coaching support channels, CodeCoach.AI anytime tutor access, and rich extended learning and post training resources are provided for you in our “easy access, single source, no install required” online **Learning Experience Platform (LXP),** remote lab and content environment. Access periods vary by course. We’ll collaborate with you to ensure your team is set up and ready to go well in advance of the class. Please inquire about set up details and options for your specific course of interest.

For More Information

Please contact us or call 844-475-4559 toll free for more information about our training services (instructor-led, self-paced or blended), coaching and mentoring services, public course enrollment or questions, partner programs, courseware licensing options and more.