

AI & Machine Learning Journey

Azure OpenAI Boot Camp for Developers (TTAI2335)

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

Course Snapshot

- **Course: Azure OpenAI Boot Camp for Developers (TTAI2335)**
- **Duration:** 2 days
- **Audience & Skill Level:** This Intermediate level course is geared for experienced technical professionals new to Azure and OpenAI who are eager to deepen their understanding of AI and apply it in their work. Roles might include data scientists, machine learning engineers, AI researchers, and IT managers involved in AI strategy and deployment.
- **Format / Hands-on:** This course combines engaging instructor-led presentations and practical demonstrations with hands-on programming exercises, challenge labs, use case exploration and engaging group activities. Student machines are required.
- **Flexible Delivery Options:** This course can be delivered for your team or organization **online-live (virtual), onsite in-person, self-paced** or across our immersive **blended learning experience platform (LXP)**.
- **Public Schedule:** This course is currently available on our Public Open Enrollment Schedule.
- **Customizable:** We're flexible! This course agenda, topics, labs, hours and delivery modalities can be adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

Description

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.

Learning 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 variety of 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.

Setup Made Simple! Learning Experience Platform (LXP)

All applicable course software, digital courseware files or course notes, labs, data sets and solutions, live coaching support channels and rich extended learning and post training resources are provided for you in our “easy access, 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.

Course Topics / 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	objectives of OpenAI and Azure OpenAI	OpenAI and Azure OpenAI
1. Introduction and Overview	<ul style="list-style-type: none"> • Distinctive features of both platforms • Comparative evaluation of 	<ul style="list-style-type: none"> • Hands-on Lab: Comparison of OpenAI and Azure OpenAI • Discussion and debrief
<ul style="list-style-type: none"> • Introduction to OpenAI and Azure OpenAI • Core competencies and 		

2. Unfolding Generative AI

- Definition of generative AI
- Evolution and historical context of generative AI
- Use-cases of generative AI in various industries
- Overview of generative AI algorithms and frameworks
- Hands-on Lab: Investigating real-world applications of generative AI
- Review and analysis of findings

3. Deep Dive into Azure OpenAI

- Detailed overview of Azure OpenAI
- In-depth analysis of Azure OpenAI's architecture and infrastructure
- Key features and benefits of Azure OpenAI
- Overview of Azure OpenAI applications and success stories
- Hands-on Lab: Exploring Azure OpenAI capabilities through practical exercises
- Discussion on insights and challenges

4. AI Models Exploration

- Introduction to GPT-4, GPT-3, DALL-E, Codex, and Embedding
- Overview of model development and evolution
- Comparison of features and use-cases of each model
- Exploration of the potential future advancements and applications of these models
- Activity: Practical demonstration of different model uses
- Analysis and review

5. The Art of Prompt Engineering: The Basics

- Introduction to the concept of prompt engineering
- Understanding the core principles of prompt engineering
- Importance and role of prompt

engineering in AI model performance

- Analysis of common challenges and solutions in prompt engineering
- Hands-on Lab: Basic of prompt engineering tasks
- Discuss and review findings and strategies

Day 2

6. Mastering Prompt Engineering: Advanced Topics

- Deep dive into advanced topics like space efficiency, few-shot learning, and non-chat scenarios
- Exploration of key strategies like clear instructions, prime the output, and clear syntax
- Review of real-world examples of advanced prompt engineering
- Analysis of common mistakes and pitfalls in advanced prompt engineering
- Hands-on Lab: Advanced prompt engineering activities
- Review outcomes and insights

7. Azure OpenAI Workloads and Access

- Overview of different Azure OpenAI workloads
- Analysis of workload performance and scalability
- Procedures for accessing the Azure OpenAI Service
- Review of Azure OpenAI Service's reliability and maintenance
- Hands-on Lab: Accessing and using Azure OpenAI
- Discuss challenges and solutions

8. Fine-Tuning Mastery: GPT Model

- Introduction to the concept of fine-tuning a GPT model
- Understanding the mathematical principles behind fine-tuning

- Steps and tips for efficient fine-tuning
- Analysis of common challenges in fine-tuning and potential solutions
- Hands-on Lab: Exercise to fine-tune a GPT model
- Review outcomes and insights

9. Essentials of Embeddings and Indexing

- Understanding embeddings and indexing
- Introduction to the mathematical theories behind embeddings and indexing
- Importance and real-world applications of embeddings and indexing
- Discussion on the challenges and potential advancements in embeddings and indexing
- Hands-on Lab: Practical activity on implementing embeddings and indexing
- Discuss the application and challenges

10. Content Filtering Made Simple

- Introduction to content filtering in Azure OpenAI Studio
- Understanding the mathematical models behind content filtering
- Key best practices for effective content filtering
- Discussion on ethical and legal considerations in content filtering
- Hands-on Lab: Set up and configure content filters
- Discuss and review outcomes

11. Building a Private Business GPT

- Concepts of LangChain and Llama Index
- Introduction to the principles and best practices in GPT business application
- Guidelines for creating a private business GPT
- Discussion on the challenges

- and future of business GPTs
- Hands-on Lab: Create a private business GPT
- Discuss and review project

12. Ensuring Security and Effective Monitoring

- Introduction to Azure Tooling for security
- Overview of the principles of secure AI deployment
- Best practices for monitoring Azure OpenAI applications
- Discuss future challenges and advancements in AI security and monitoring

- Hands-on Lab: Practical activities on security setup and monitoring
- Discuss outcomes and insights

13. Azure OpenAI Responsible AI Practices and Limited Access Policies

- Overview of Azure OpenAI's responsible AI practices
- Understanding the ethical considerations in AI application
- Understanding Azure OpenAI's limited access policies
- Discussion on the legal framework and potential

- challenges in AI access policies
- Hands-on Lab: Implementing responsible AI practices
- Discuss outcomes, analysis and insights

14. Capstone Project

- FINAL LAB: Comprehensive project that integrates learning from all modules
- Final project review and feedback session

15. Wrap-up, Q&A

For More Information

For more information about our training services (instructor-led, self-paced or blended), collaborative coaching services, robust Learning Experience Platform (LXP), Career Experiences, public course schedule, partner programs, courseware licensing options or to see our complete list of course offerings, solutions and special offers, please visit us at www.triveratech.com, email Info@triveratech.com or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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