

# Azure OpenAI Key 밭급

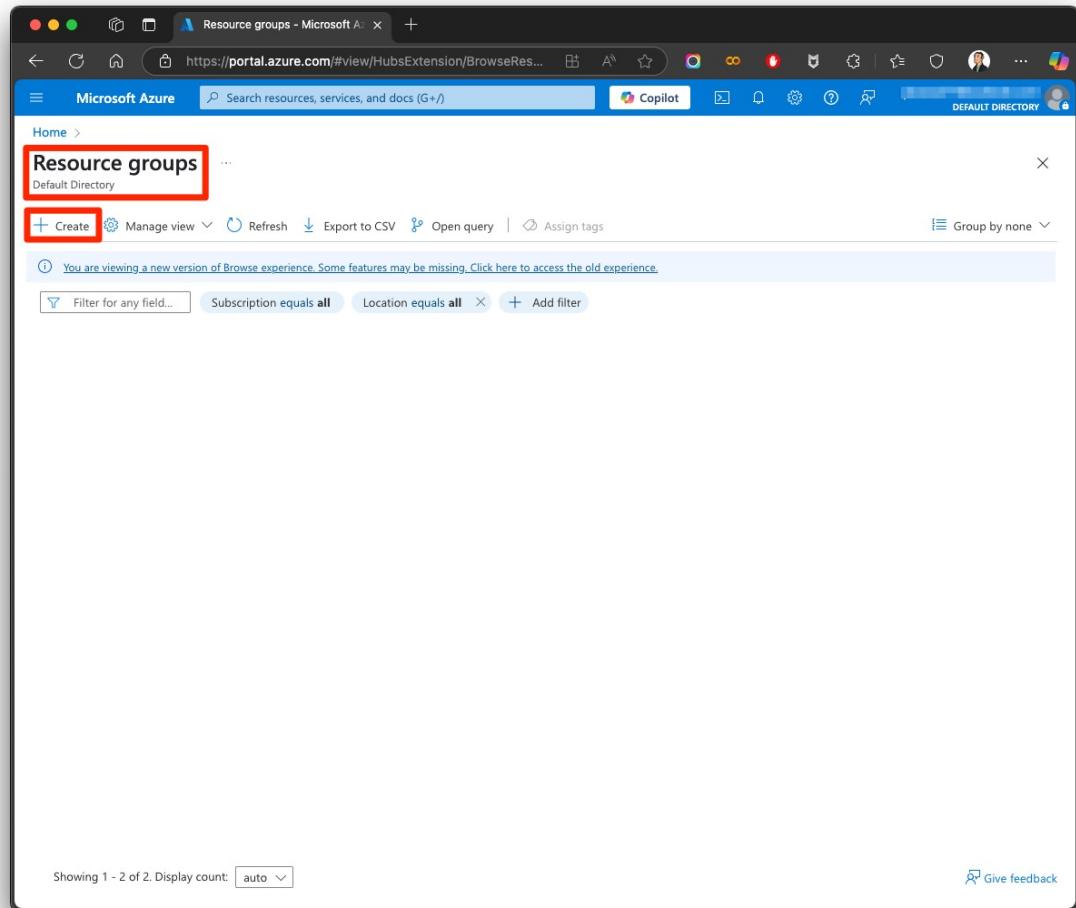
Jaeyoung Chun

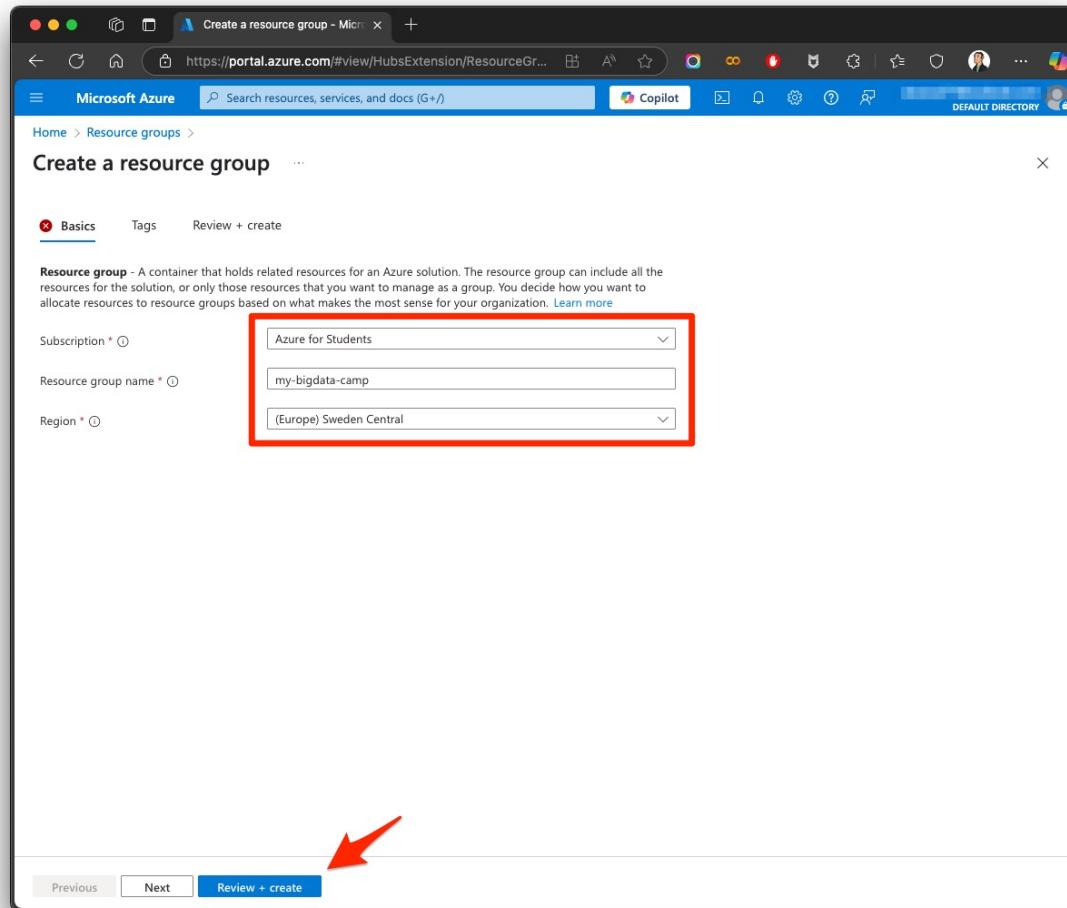


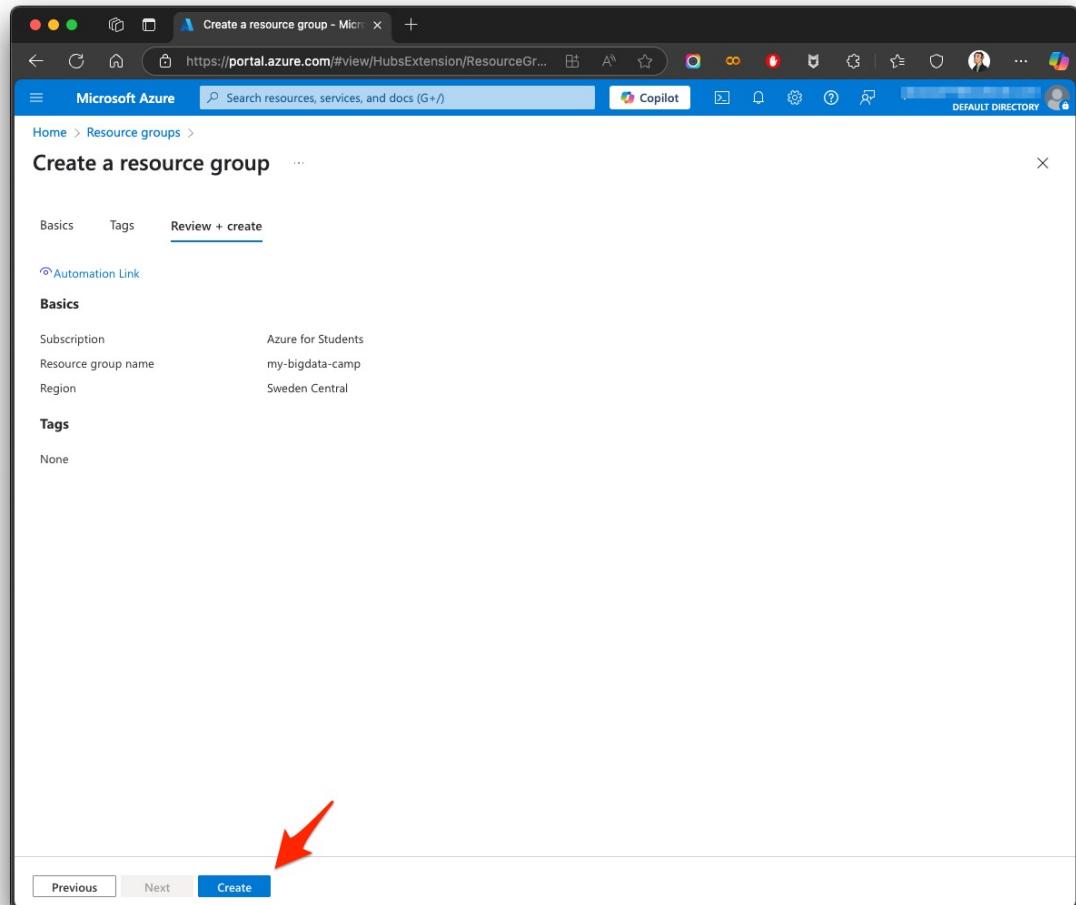


1

## Create a Resource Group







2

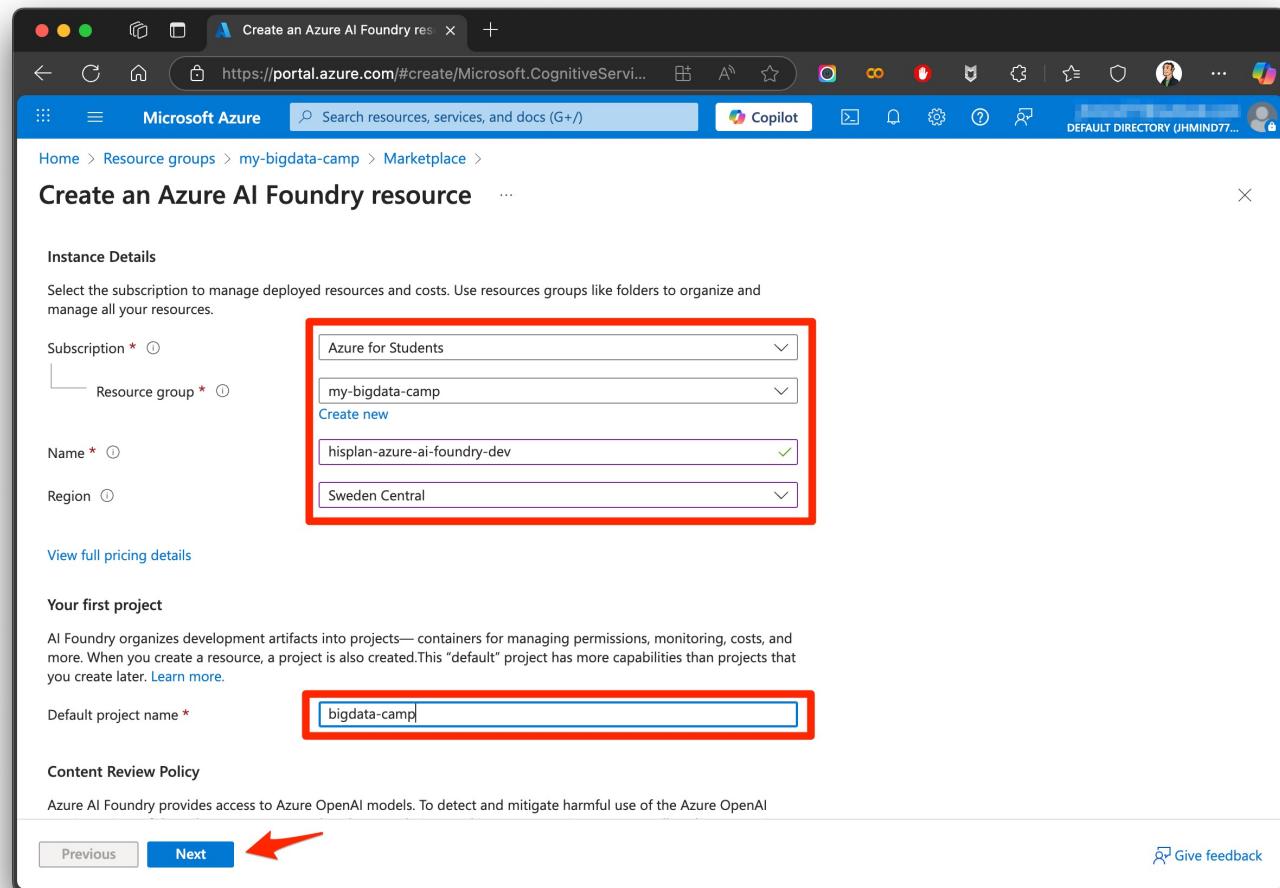
## Azure AI Foundry

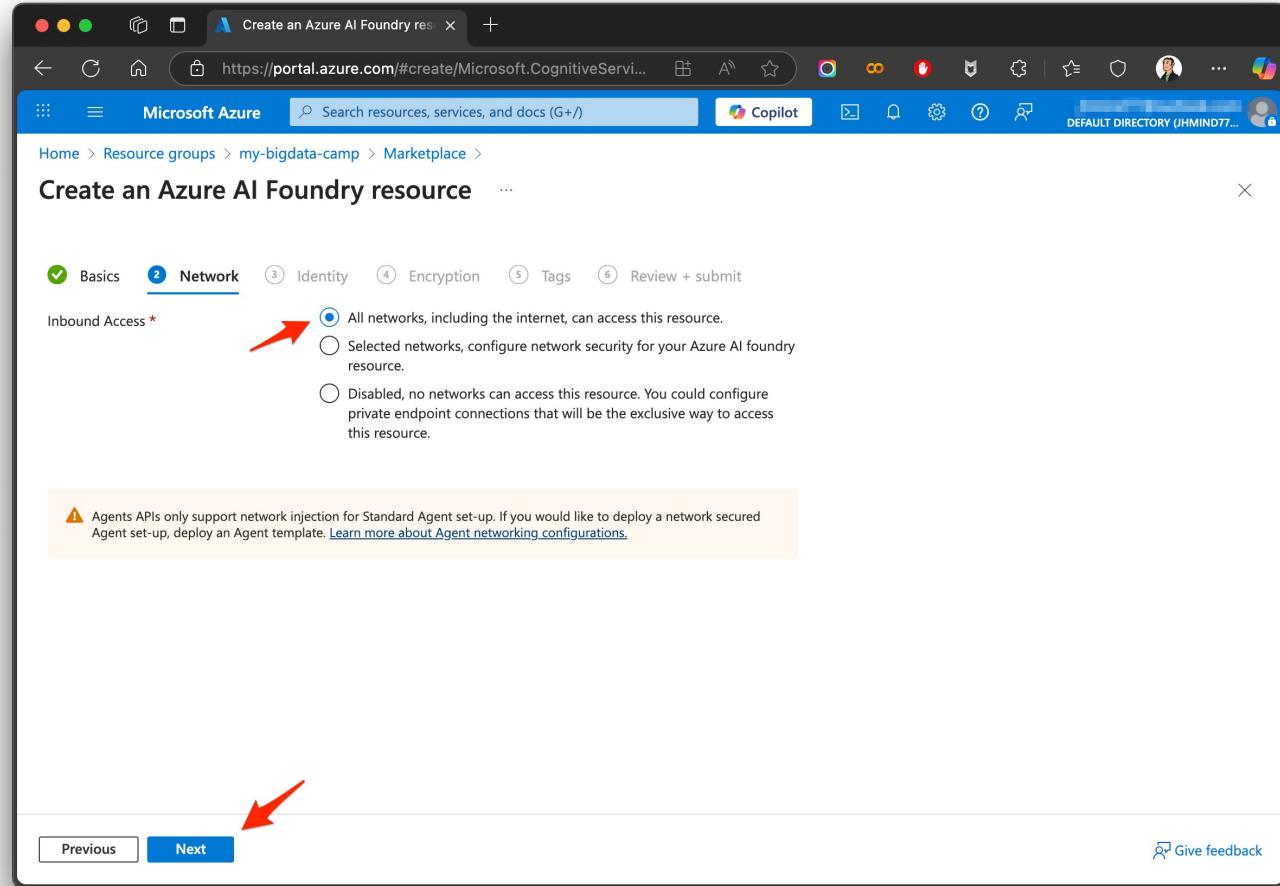
A screenshot of the Microsoft Azure Marketplace search results page. The search bar at the top contains the text "Azure AI Foundry". Below the search bar are several filter options: "Pricing : All", "Operating System : All", "Publisher Type : All", "Product Type : Azure Services (3)", and "Publisher name : All". A checkbox for "Azure services only" is checked. A callout bubble from the search bar says "New! Get AI-generated suggestions for 'azure ai foundry'" with a "View suggestions" button.

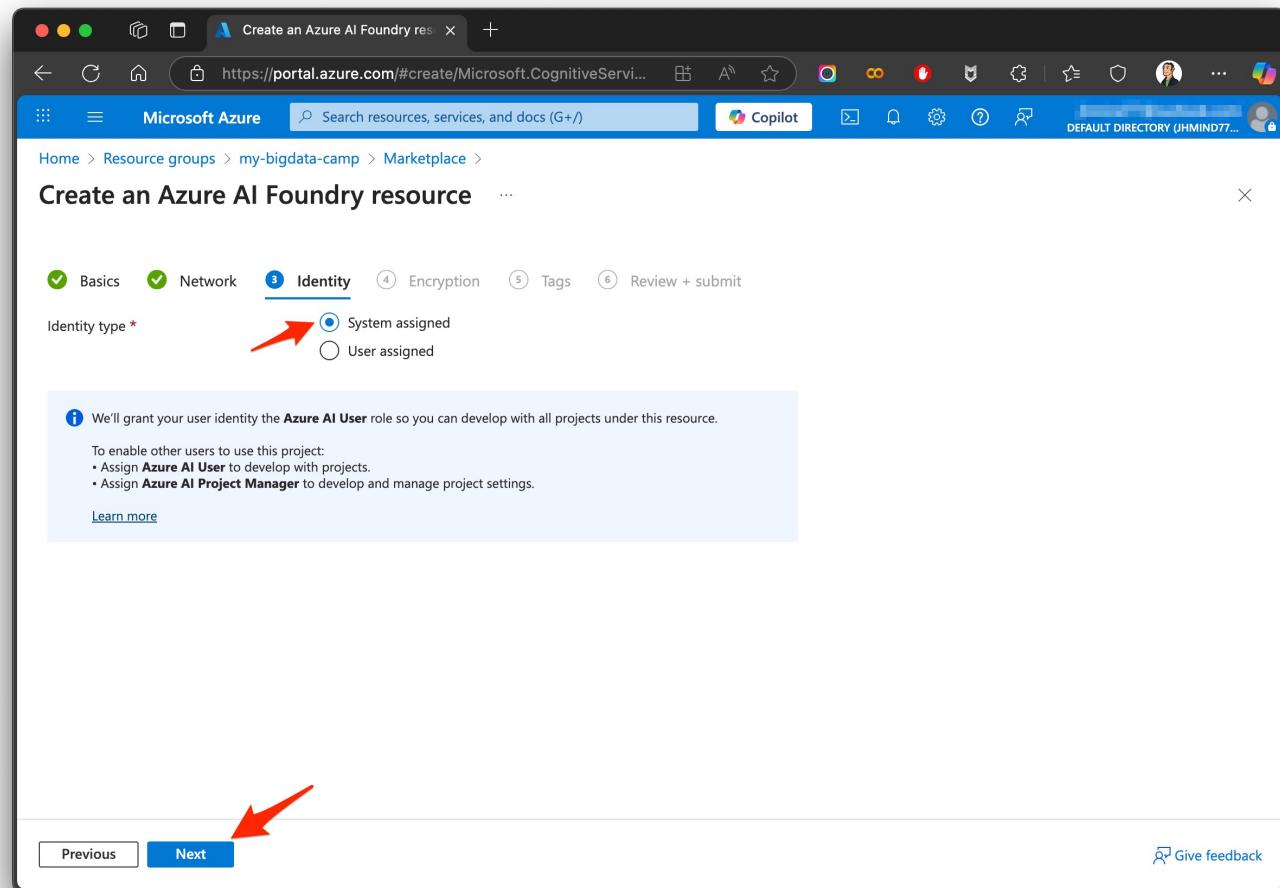
The main content area shows three search results:

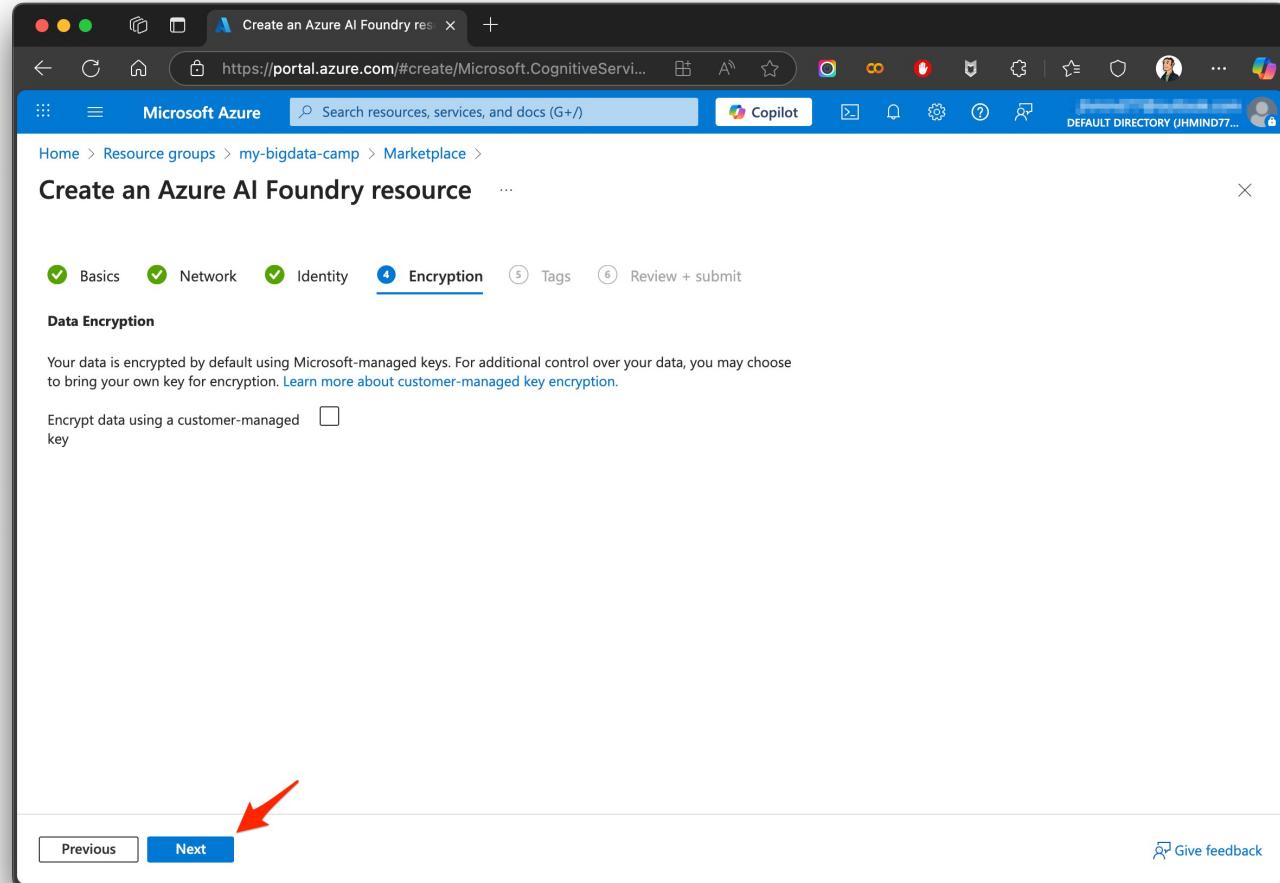
- Azure AI Foundry** (highlighted with a red box and a red arrow pointing to the "Create" button)
  - Provider: Microsoft
  - Type: Azure Service
  - Description: Design, customize, and manage AI apps and agents at scale.
- Grounding with Bing Search**
  - Provider: Microsoft
  - Type: Azure Service
  - Description: Enhance your AI solution with real-time web search results. To be used as a knowledge tool for Azure AI Agent Service.
- Grounding with Bing Custom Search**
  - Provider: Microsoft
  - Type: Azure Service
  - Description: Create custom domain spaces for AI grounding. To be used as a knowledge tool.

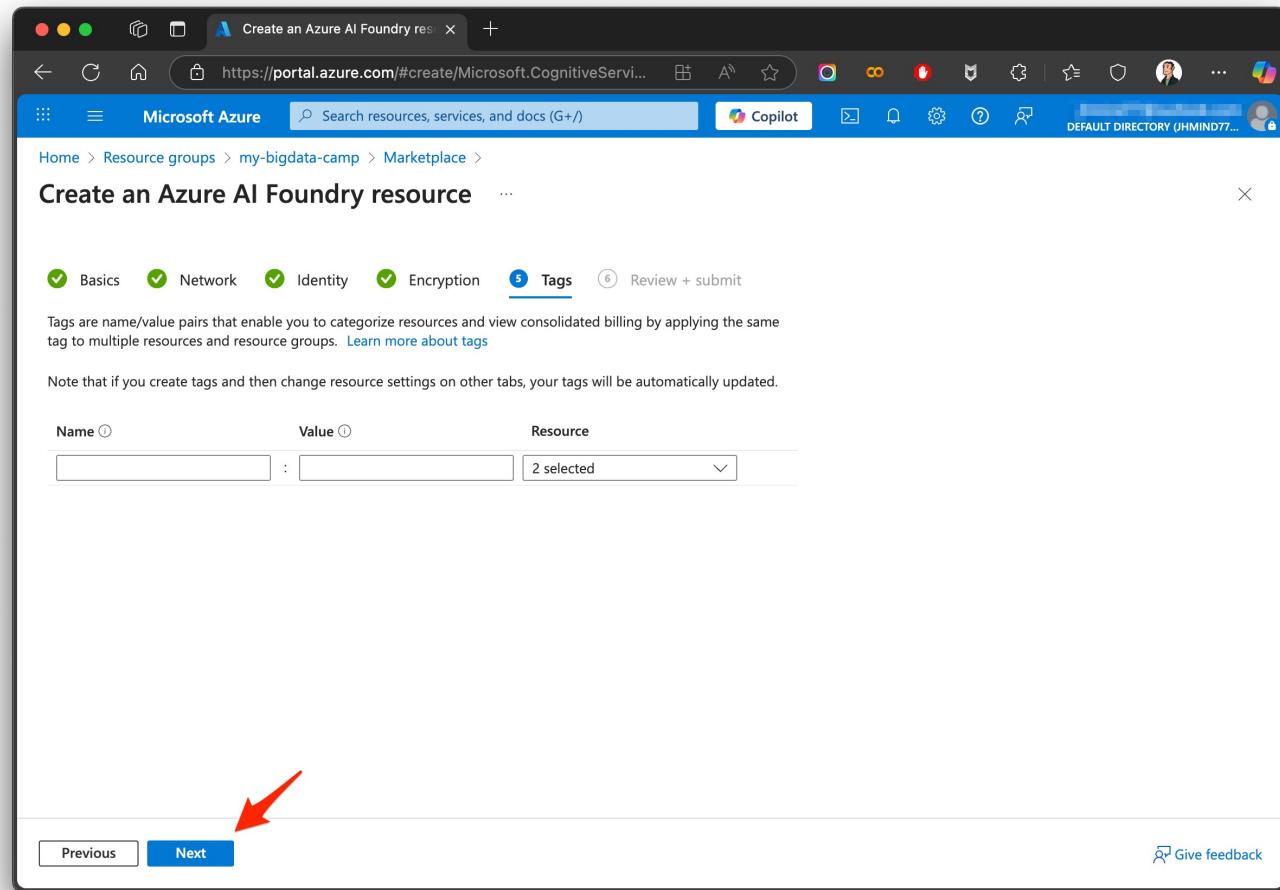
On the left sidebar, there are sections for "Get Started", "Management", and "My Marketplace". Under "My Marketplace", there are links for "Favorites", "My solutions", "Recently created", and "Private plans". Under "Categories", there are links for "AI + Machine Learning (1)", "Analytics (0)", "Blockchain (0)", and "Compute (0)".

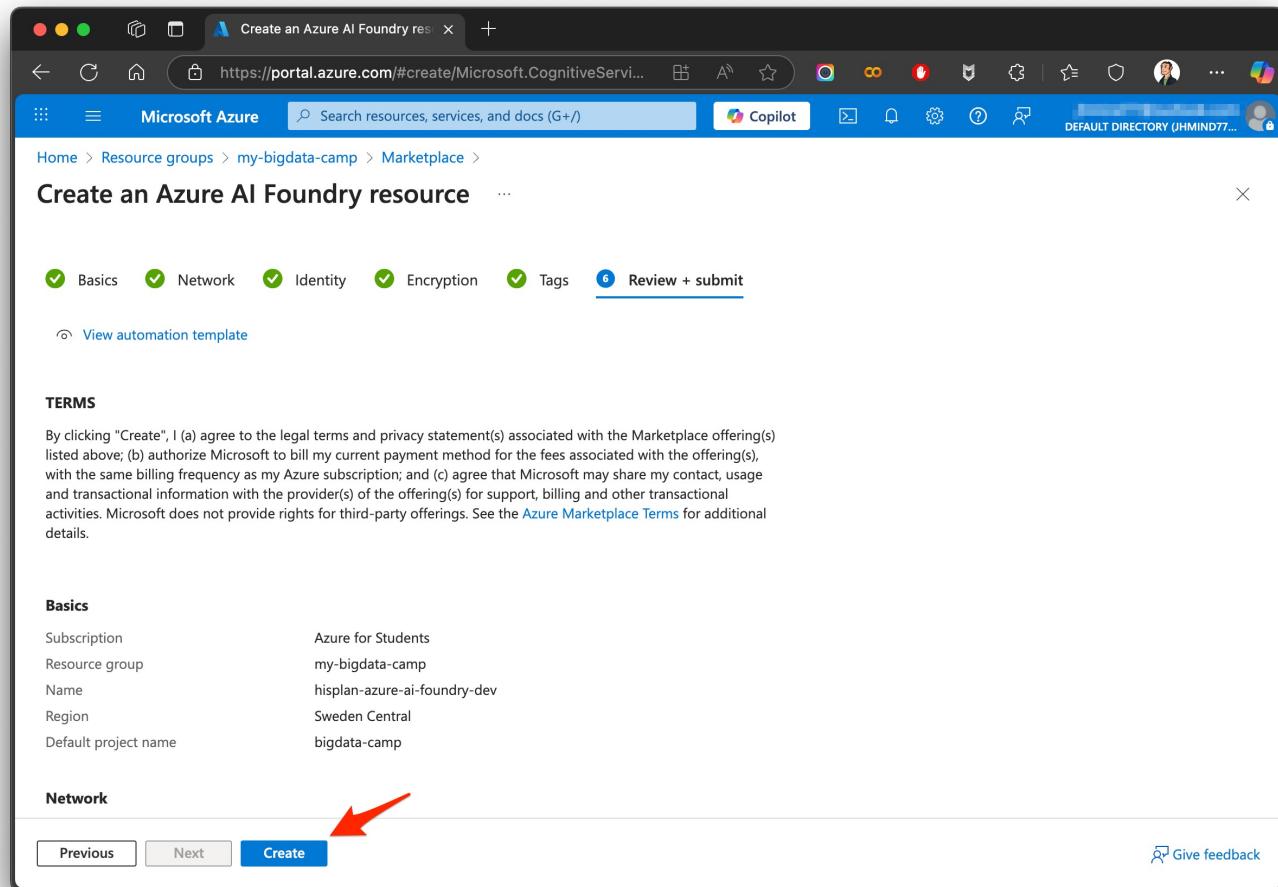












The screenshot shows the Microsoft Azure portal interface. The main window displays a deployment blade for "Microsoft.CognitiveServicesAIFoundry-20250709170026". The "Overview" tab is selected, showing the status "Deployment is in progress" highlighted with a red box. Below it, deployment details are listed:

- Deployment name : Microsoft.CognitiveServicesAIFoundry-20250709170026
- Subscription : Azure for Students
- Resource group : my-bigdata-camp
- Start time : 7/9/2025, 5:05:37 PM
- Correlation ID : 41ed1964-06fd-4687-add5-ded0f1b29514

Below the details, under "Deployment details", there is a table with columns: Resource, Type, and Status. A note states "There are no resources to display."

On the right side of the portal, a "Notifications" pane is open, also featuring a red box around its top section. It lists activity log events:

- "Deployment in progress... Running" - Deployment to resource group 'my-bigdata-camp' is in progress. (a few seconds ago)
- "Resource group created" - Creating resource group 'my-bigdata-camp' in subscription 'Azure for Students' succeeded. (21 hours ago)
- "Resource group created" - Creating resource group 'my-bigdata-camp' in subscription 'Azure for Students' succeeded. (21 hours ago)

At the bottom of the main blade, the URL is visible: [https://portal.azure.com/#blade/Microsoft\\_Azure\\_ActivityLog/ActivityLogBlade/queryInputs/%7B"user%3A%40me%7D](https://portal.azure.com/#blade/Microsoft_Azure_ActivityLog/ActivityLogBlade/queryInputs/%7B)

The screenshot shows the Microsoft Azure portal interface. The main window displays a deployment status for "Microsoft.CognitiveServicesAIFoundry-20250709170026". A prominent message box states "Your deployment is complete" with a green checkmark icon. Below this, deployment details are listed: Deployment name: Microsoft.CognitiveServicesAIFoundry-20250709170026; Subscription: Azure for Students; Resource group: my-bigdata-camp; Start time: 7/9/2025, 5:05:39 PM; Correlation ID: 41ed1964-06fd-4687-add5-ded0f1b29514. A red arrow points from the "Go to resource" button at the bottom left of the main window towards the notifications panel.

Microsoft.CognitiveServicesAIFoundry-20250709170026 | Overview

Your deployment is complete

Deployment name : Microsoft.CognitiveServicesAIFoundry-20250709170026

Subscription : Azure for Students

Resource group : my-bigdata-camp

Start time : 7/9/2025, 5:05:39 PM

Correlation ID : 41ed1964-06fd-4687-add5-ded0f1b29514

Deployment details

Next steps

Go to resource

Give feedback

Tell us about your experience with deployment

Cost management

Get notified to stay within your budget and prevent unexpected charges on your bill.

Set up cost alerts >

Notifications

More events in the activity log → Dismiss all

Deployment succeeded

Deployment 'Microsoft.CognitiveServicesAIFoundry-20250709170026' to resource group 'my-bigdata-camp' was successful.

Go to res... Pin to dash...

a few seconds ago

Resource group created

Creating resource group 'my-bigdata-camp' in subscription 'Azure for Students' succeeded.

Go to res... Pin to dash...

21 hours ago

Resource group created

Creating resource group 'my-bigdata-camp' in subscription 'Azure for Students' succeeded.

Go to res... Pin to dash...

21 hours ago

hisplan-azure-ai-foundry-dev

Azure AI Foundry

Search

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource visualizer

> Resource Management

> Security

> Monitoring

> Automation

> Help

Resource group (move)  
my-bigdata-camp

Subscription (move)  
Azure for Students

Subscription ID  
8c974387-f409-40fa-955e-488b06c76cf3

API Kind  
AI Services

Location  
swedencentral

Status  
Succeeded

Endpoints  
[Click here to view endpoints](#)

Tags (edit)  
[Add tags](#)

JSON View

Build apps and agents in Azure AI Foundry

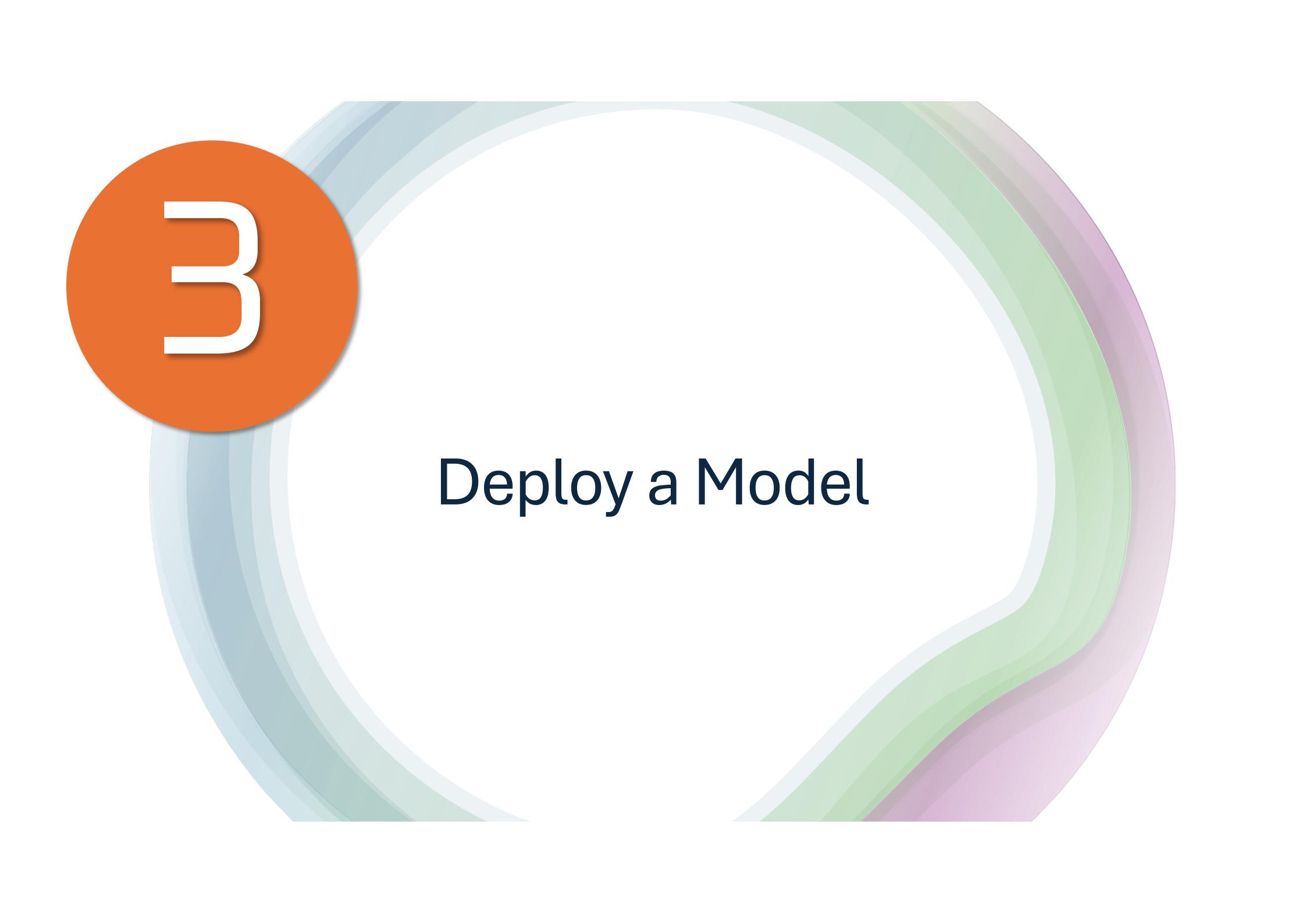
Unlock advanced AI capabilities, seamlessly integrate with your systems, and accelerate AI application development with Azure AI Foundry.

Go to Azure AI Foundry portal

Add or remove favorites by pressing Cmd+Shift+F

A screenshot of a web browser showing the Azure AI Foundry Overview page for a project named "bigdata-camp". The URL is <https://ai.azure.com/foundryProject/overview?wsid=/subscriptions/8c9...>. The page displays various project details, including endpoints and keys, and lists libraries like Azure AI Foundry, Azure OpenAI, and Azure AI Services. A prominent red arrow points to a "Fix me" button located in the top right corner of the main content area.

만약에 권한 오류가 발생하면...



3

## Deploy a Model

The screenshot shows the Azure AI Foundry interface with the URL <https://ai.azure.com/resource/deployments?wsid=/subscriptions/8c974...>. The left sidebar is collapsed, and the main content area is titled "Model deployments".

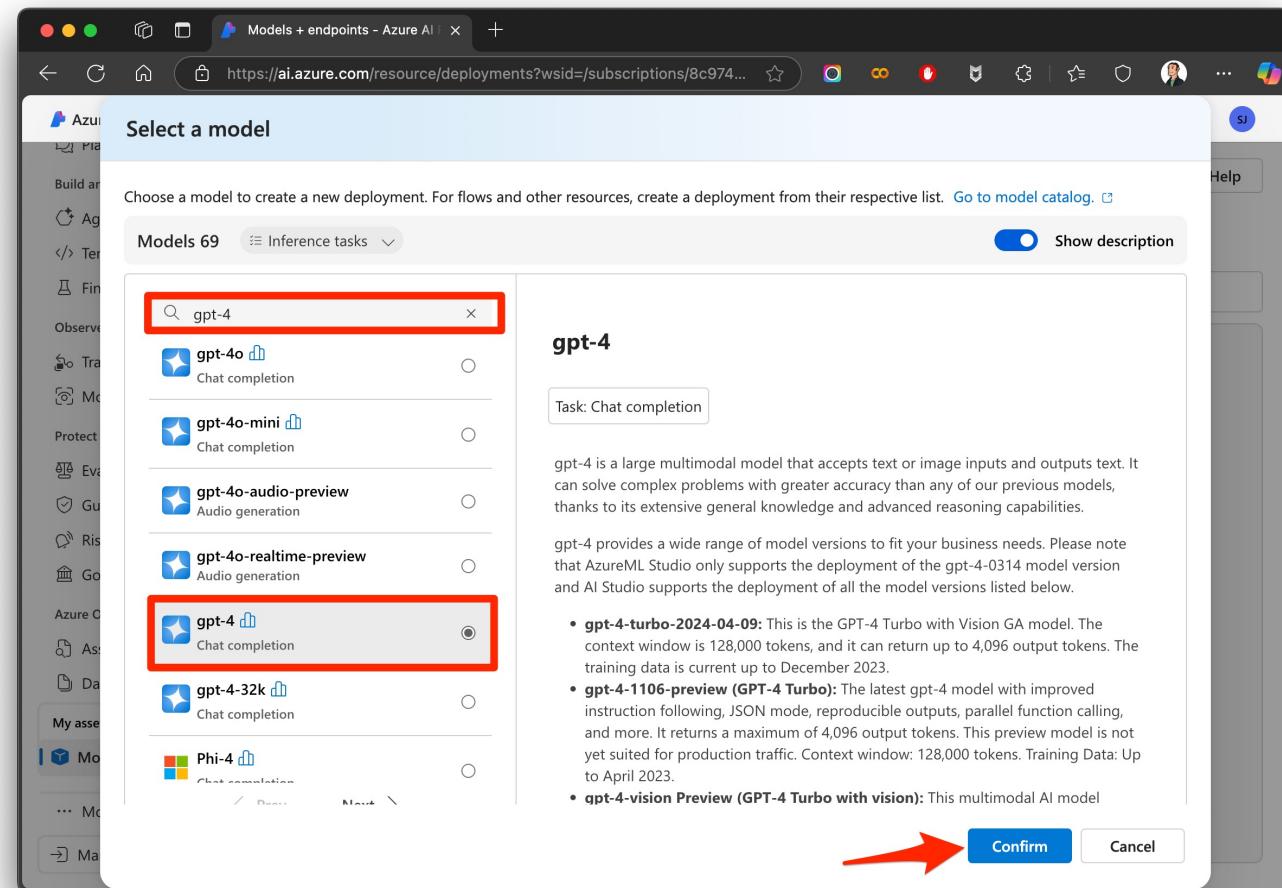
The "Model deployments" tab is selected, showing two options:

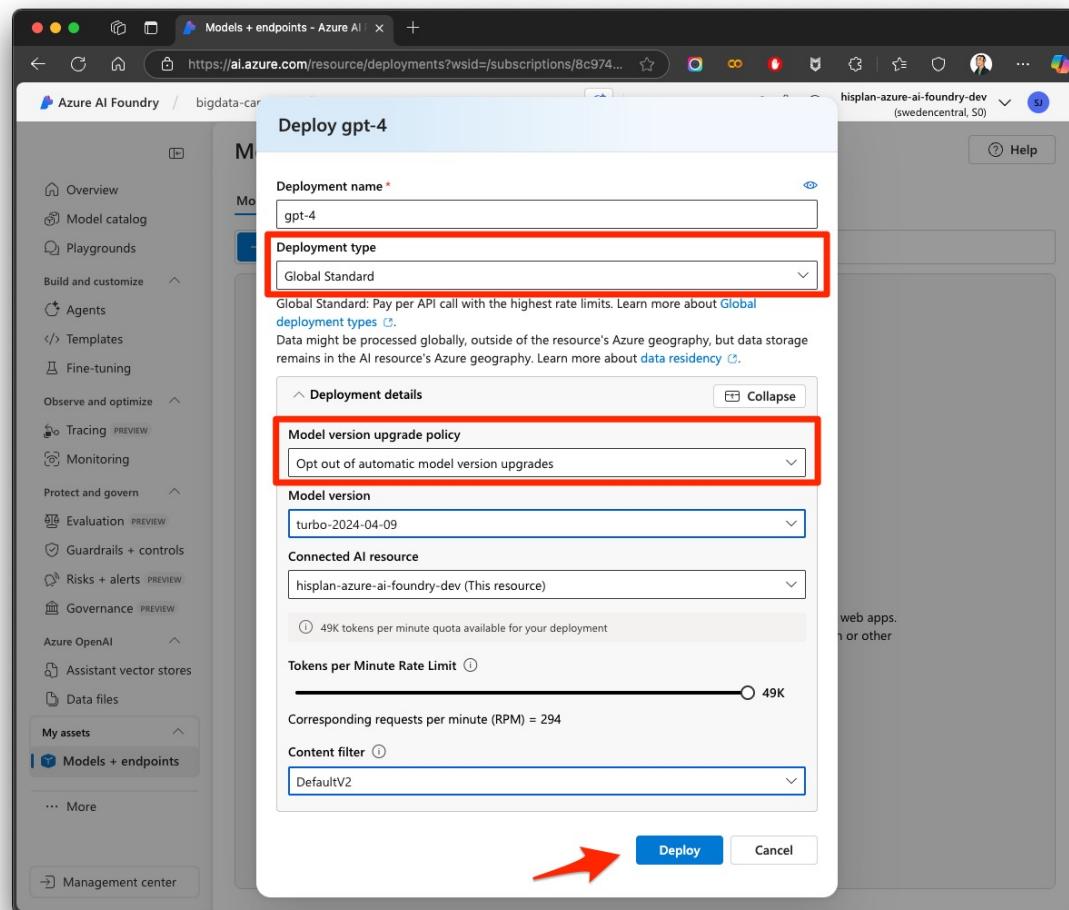
- Deploy base model** (highlighted with a red arrow)
- Deploy fine-tuned model**

Below these options is a large "Create a new deployment" button featuring a magnifying glass icon inside a cloud shape.

A descriptive text block states: "Azure AI Foundry supports deploying large language models (LLMs), flows, and web apps. Deploying an LLM or flow makes it available for use in a website, an application or other production environments."

At the bottom right, there is a link "Need help? [View documentation](#)".





The screenshot shows the Azure AI Foundry interface for a deployment named "gpt-4". The left sidebar includes sections like Overview, Model catalog, Playgrounds, Build and customize, Agents, Templates, Fine-tuning, Observe and optimize, Tracing, Monitoring, Protect and govern, Evaluation, Guardrails + controls, Risks + alerts, and Governance. The main content area has tabs for Details, Metrics, Risks & Safety, and "Open in playground". The "Details" tab is active, showing the "Endpoint" section with a red box around the "Target URI" field containing "https://hisplan-azure-ai-foundry-dev...." and the "Key" field containing ".....". Another red box highlights the "Deployment info" section, which lists the Name "gpt-4", Provisioning state "Succeeded", Deployment type "Global Standard", Created on "2025-07-09T08:21:01.551Z", Modified by (redacted), Modified on "Jul 9, 2025 5:21 PM", Version upgrade policy "Model version will not be automatically upgraded", Rate limit (Tokens per minute) "49,000", and Rate limit (Requests per minute) "294". A yellow banner at the top states: "Legacy model version: This deployment is using legacy model gpt-4 version turbo-2024-04-09 which will be retired on 9/01/2025 local time. When the version retires, inferencing will return error responses and all deployments for this version will not be supported. To avoid disruptions, you can edit the deployment now to update the deployment to a supported version, if a new version is available." The right side features a "Get Started" section with code snippets for Python using the Azure OpenAI SDK.

Legacy model version: This deployment is using legacy model gpt-4 version turbo-2024-04-09 which will be retired on 9/01/2025 local time. When the version retires, inferencing will return error responses and all deployments for this version will not be supported. To avoid disruptions, you can [edit the deployment now](#) to update the deployment to a supported version, if a new version is available.

**Details** Metrics Risks & Safety

Open in playground Request quota Edit Delete

**Endpoint**

Target URI  
https://hisplan-azure-ai-foundry-dev....

Key  
.....

**Deployment info**

Name	Provisioning state
gpt-4	Succeeded

Deployment type: Global Standard  
Created on: 2025-07-09T08:21:01.551Z  
Modified by: (redacted)  
Modified on: Jul 9, 2025 5:21 PM  
Version upgrade policy: Model version will not be automatically upgraded  
Rate limit (Tokens per minute): 49,000  
Rate limit (Requests per minute): 294

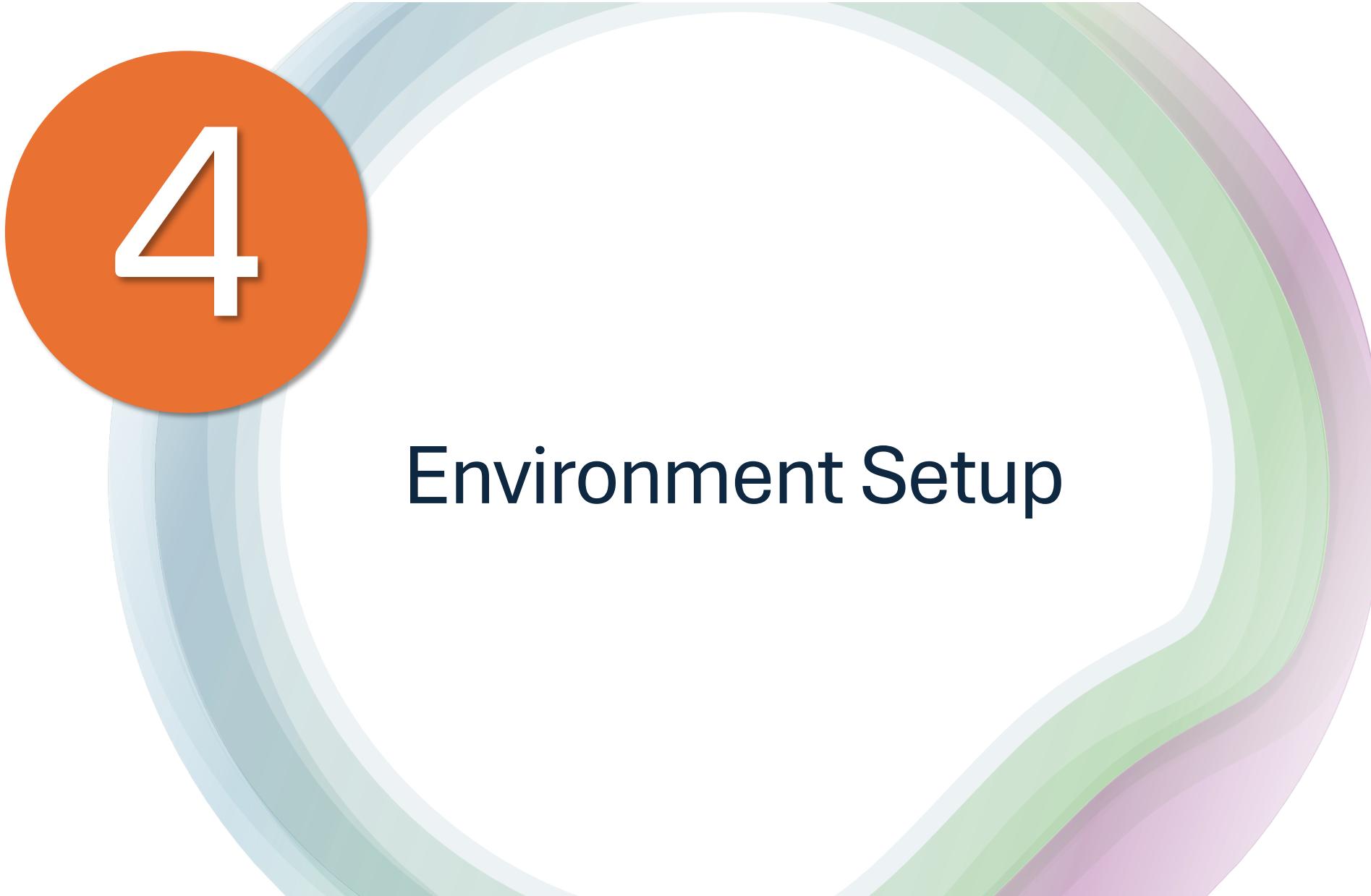
**Get Started**

Below are example code snippets for a few use cases. For additional information about Azure OpenAI SDK, see full [documentation](#) and [samples](#).

### 1. Authentication using API Key

For OpenAI API Endpoints, deploy the Model to generate the endpoint URL and an API key to authenticate against the service. In this sample endpoint and key are strings holding the endpoint URL and the API Key.

```
import os
from openai import AzureOpenAI
```



4

## Environment Setup

# .env 파일의 환경변수 이름

AZURE\_OPENAI\_ENDPOINT

AZURE\_OPENAI\_API\_KEY

AZURE\_DEPLOYMENT\_NAME

The screenshot shows the Azure AI Foundry interface with a deployment named "gpt-4". The "Endpoint" section is highlighted with a red box, showing the "Target URI" as <https://hisplan-azure-ai-foundry-dev...> and the "Key" field as a redacted string. The "Deployment info" section is also highlighted with a red box, showing the "Name" as "gpt-4", "Provisioning state" as "Succeeded", "Deployment type" as "Global Standard", and "Created on" as "2025-07-09T08:21:01.5518015Z". Arrows from the labels "AZURE\_OPENAI\_ENDPOINT", "AZURE\_OPENAI\_API\_KEY", and "AZURE\_DEPLOYMENT\_NAME" point to the corresponding fields in the deployment details.

Legacy model version: This deployment is using legacy model gpt-4 version turbo-2024-04-09 which will be retired on 9/01/2025 local time. Version retires, inferencing will return error responses and all deployments for this version will not be supported. To avoid disruptions, you edit the deployment now to update the deployment to a supported version, if a new version is available.

Details Metrics Risks & Safety

Open in playground Request quota Edit Delete

Language: Python SDK: Azure OpenAI SDK

Authentication type: Key Authentication

Get Started

Below are example code snippets for a few use cases. For additional Azure OpenAI SDK, see full documentation and samples.

### 1. Authentication using API Key

For OpenAI API Endpoints, deploy the Model to generate the endpoint key to authenticate against the service. In this sample endpoint and holding the endpoint URL and the API Key.

The API endpoint URL and API key can be found on the Deployment once the model is deployed.

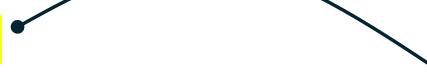
Endpoint	
Target URI	<a href="https://hisplan-azure-ai-foundry-dev...">https://hisplan-azure-ai-foundry-dev...</a>
Key	.....

Deployment info	
Name	gpt-4
Provisioning state	Succeeded
Deployment type	Global Standard
Created on	2025-07-09T08:21:01.5518015Z
Created by	[Redacted]
Modified on	Jul 9, 2025 5:21 PM
Modified by	[Redacted]
Version upgrade policy	[Redacted]

# Directory Structure

<https://github.com/hisplan/bigdata-camp-2025-summer>

```
.  
├── .env.template  
├── .gitignore  
└── README.md  
└── code  
    └── session-00  
        ├── test-azure-openai.ipynb  
        └── test-env.ipynb  
└── requirements.txt
```

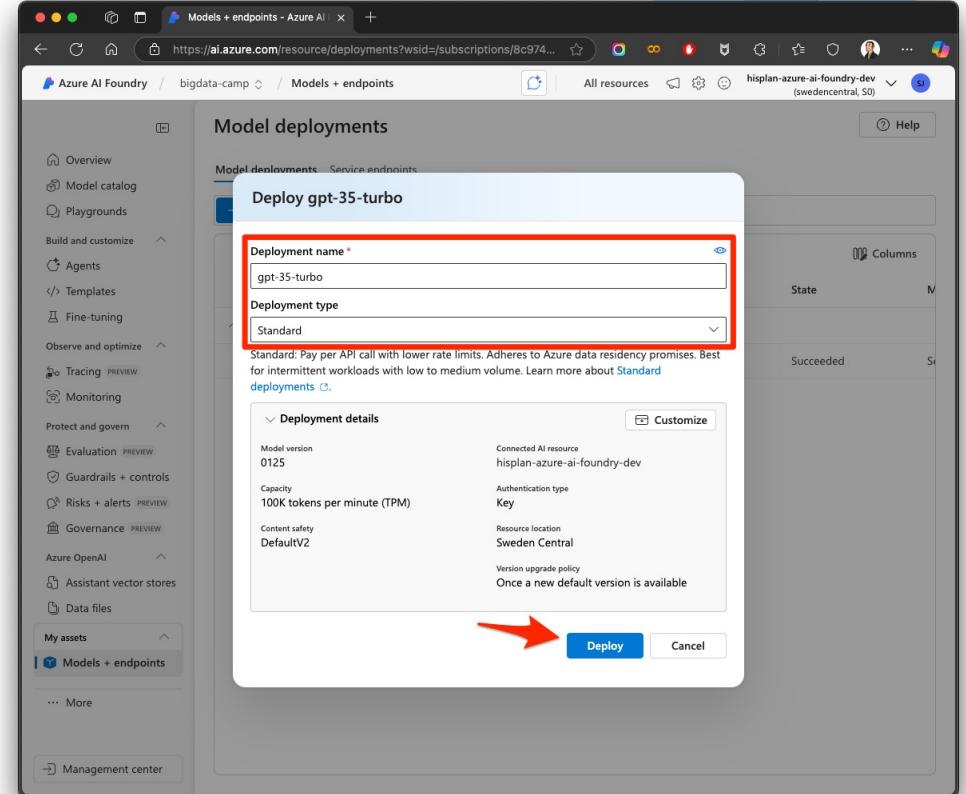
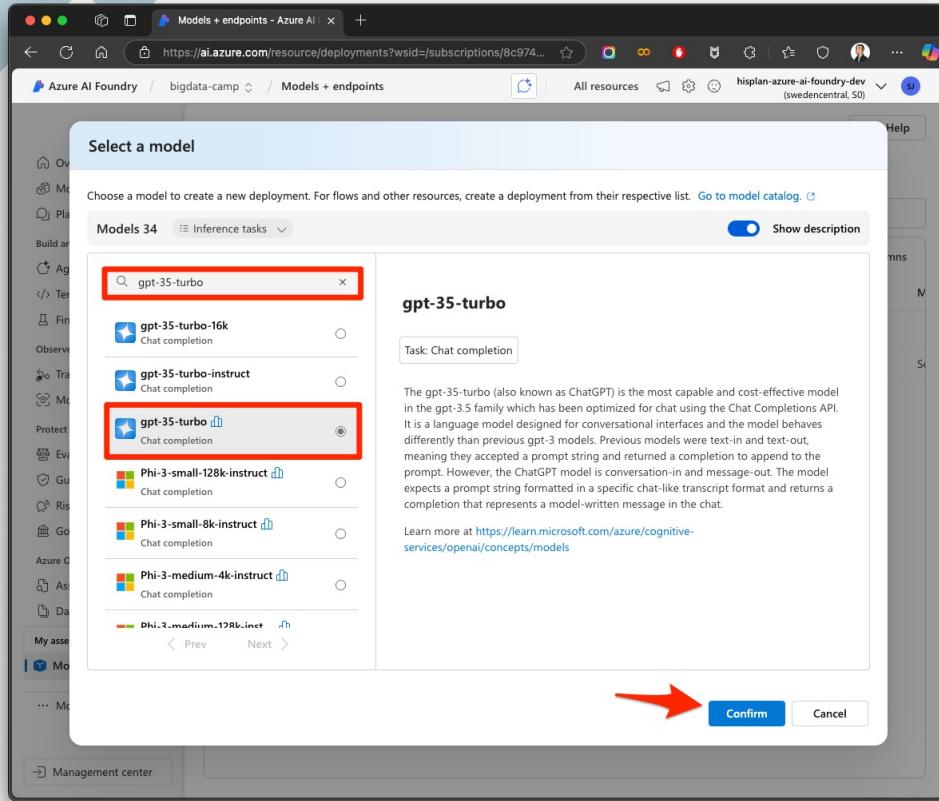


.env.template 파일을  
.env 로 변경해서 수정

# Create .env file

```
AZURE_OPENAI_ENDPOINT="https://.../chat/completions?api-version=2025-01-01-preview"  
AZURE_OPENAI_API_KEY="...81mRUWSW71ehk84L..."  
AZURE_DEPLOYMENT_NAME="gpt-4"  
OPENAI_API_VERSION="2025-01-01-preview"
```





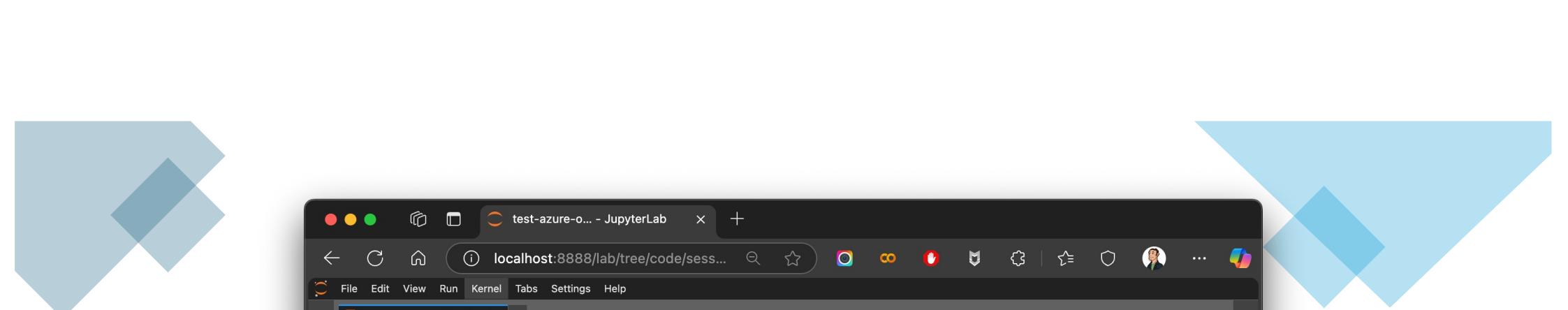
# GPT-3.5 Turbo 만들어보기



5

# Code Test

<https://github.com/hisplan/bigdata-camp-2025-summer>



localhost:8888/lab/tree/code/sess... +

File Edit View Run Kernel Tabs Settings Help

test-azure-openai.ipynb + Markdown Python 3 (ipykernel) ⚙️

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## Azure OpenAI

```
[1]: from dotenv import load_dotenv
      from langchain_openai import AzureChatOpenAI
      from langchain.schema import HumanMessage
[2]: load_dotenv()
[2]: True
[3]: model = AzureChatOpenAI()
[4]: response = model.invoke(input="홍길동으로 삼행시를 지어주세요.")
[5]: response
[5]: AIMessage(content='홍 - 홍길동이 세상을 나서며\n길 - 길을 걷다 만난 부당함에\n통 - 통분서주하며 바로 잡았네.', additional_kwargs={'refusal': None}, response_metadata={'token_usage': {'completion_tokens': 54, 'prompt_tokens': 24, 'total_tokens': 78, 'completion_tokens_details': None, 'prompt_tokens_details': None}, 'model_name': 'gpt-4-turbo-2024-04-09', 'system_fingerprint': 'fp_5603ee5e2e', 'id': 'chatcmp-l-BrLYmBezJLFz73n1MdKn7Y65na4S', 'service_tier': None, 'prompt_filter_results': [{'prompt_index': 0, 'content_filter_results': {'hate': {'filtered': False, 'severity': 'safe'}, 'jailbreak': {'filtered': False, 'detected': False}, 'self_harm': {'filtered': False, 'severity': 'safe'}}, 'finish_reason': 'stop', 'logprobs': None, 'content_filter_results': {'hate': {'filtered': False, 'severity': 'safe'}, 'self_harm': {'filtered': False, 'severity': 'safe'}, 'sexual': {'filtered': False, 'severity': 'safe'}}, 'violence': {'filtered': False, 'severity': 'safe'}}], id='run--745088a4-2b4a-4d5a-a5f0-a082a6e65f53-0', usage_metadata={'input_tokens': 24, 'output_tokens': 54, 'total_tokens': 78, 'input_token_details': {}, 'output_token_details': {}})
[6]: print(response.response_metadata["model_name"])
gpt-4-turbo-2024-04-09
[7]: print(response.content)
홍 - 홍길동이 세상을 나서며
길 - 길을 걷다 만난 부당함에
통 - 통분서주하며 바로 잡았네.
```