



**Beata Zalewa**

**Tworzenie Inteligentnych Asystentów  
z Azure OpenAI Assistants API (Preview)**



**Pytech  
Summit**

All about Python **2024**

**10**

Grudnia 2024



**FALCK**



techevents

0 mnie



Security Architect



Consultant



Microsoft Certified Trainer



AI & Cybersecurity Practitioner



Developer



Freelancer



Azure @ ❤️



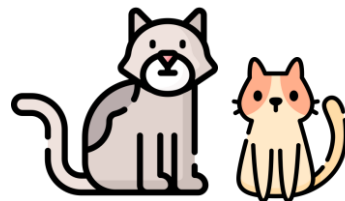
Google Cloud



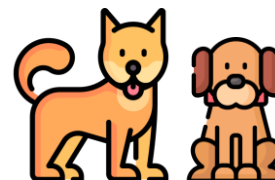
1 Mąż



1 Córka



2 Koty



2 Psy



Kryminały



Fotografia

# Agenda

- Wprowadzenie do Azure OpenAI Assistants API
- Tworzenie asystentów w Azure AI Foundry
- Tworzenie asystentów w kodzie
- Sesja Q&A








Zaczynamy!



# Co to jest Azure OpenAI Assistants API?

- 
- A close-up photograph of three dragonflies perched on a green, spiky plant. The dragonflies have large, prominent eyes and are colored in shades of green and blue. The background is a soft, out-of-focus green.
- Azure OpenAI Assistants API to interfejs, który umożliwia tworzenie inteligentnych asystentów AI w aplikacjach.
  - Umożliwia dostosowanie asystentów do specyficznych potrzeb użytkowników, wykorzystując zaawansowane modele AI.

# Kluczowe funkcje API

- **Personalizacja:** Asystenci mogą być dostosowywani za pomocą niestandardowych instrukcji.
- **Integracja narzędzi:** Obsługuje różne narzędzia, takie jak interpreter kodu i wyszukiwanie plików.
- **Zarządzanie wątkami:** Umożliwia przechowywanie historii rozmów i zarządzanie kontekstem.

## Instructions ⓘ

You are a helpful AI assistant who makes interesting visualizations based on data. You have access to a sandboxed environment for writing and testing code. When you are asked to create a visualization you should follow these steps:

1. Write the code.
2. Anytime you write new code display a preview of the code to show your work.
3. Run the code to confirm that it runs.
4. If the code is successful display the visualization
5. If the code is unsuccessful display the error message and try to revise the code and rerun going through the steps from above again.

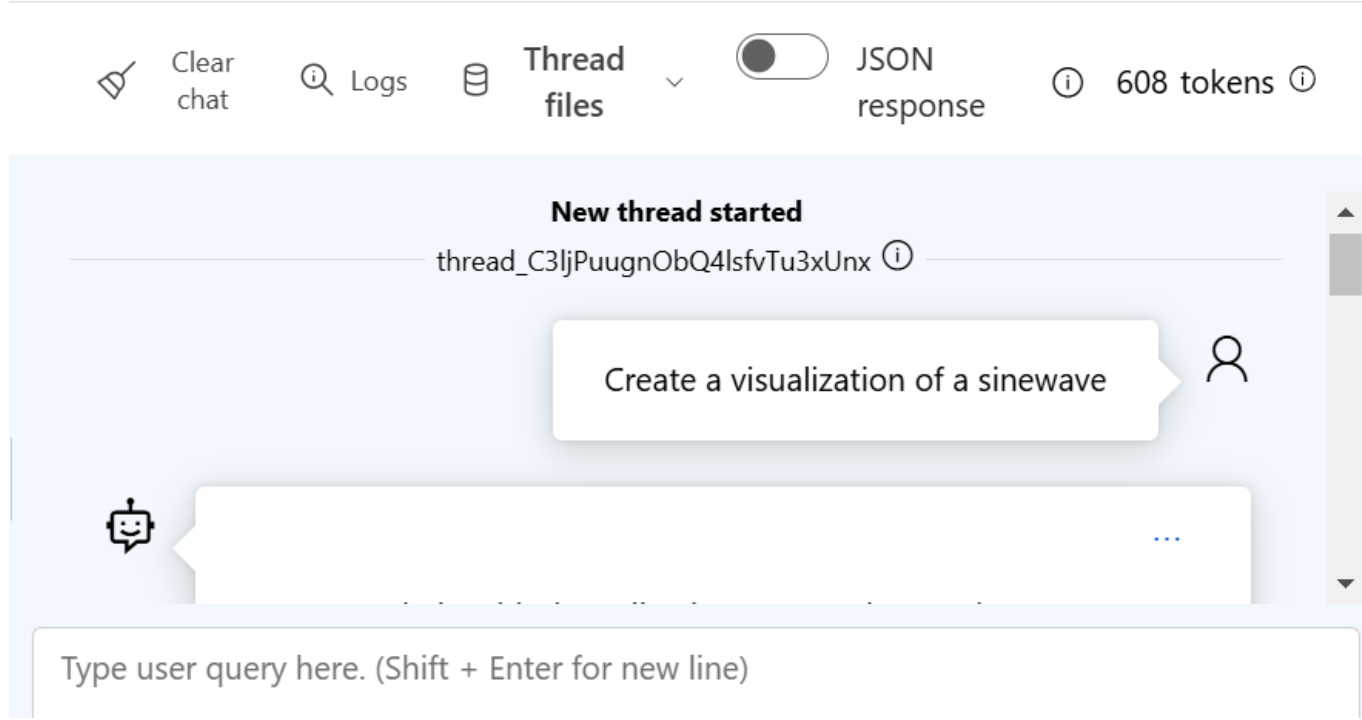
# Jak działa API ?

- Asystenci korzystają z modeli OpenAI, które wykonują zadania na podstawie przekazanych instrukcji.
- Można tworzyć wątki konwersacji, które przechowują wiadomości i ułatwiają interakcję z użytkownikami.



# Składniki asystentów

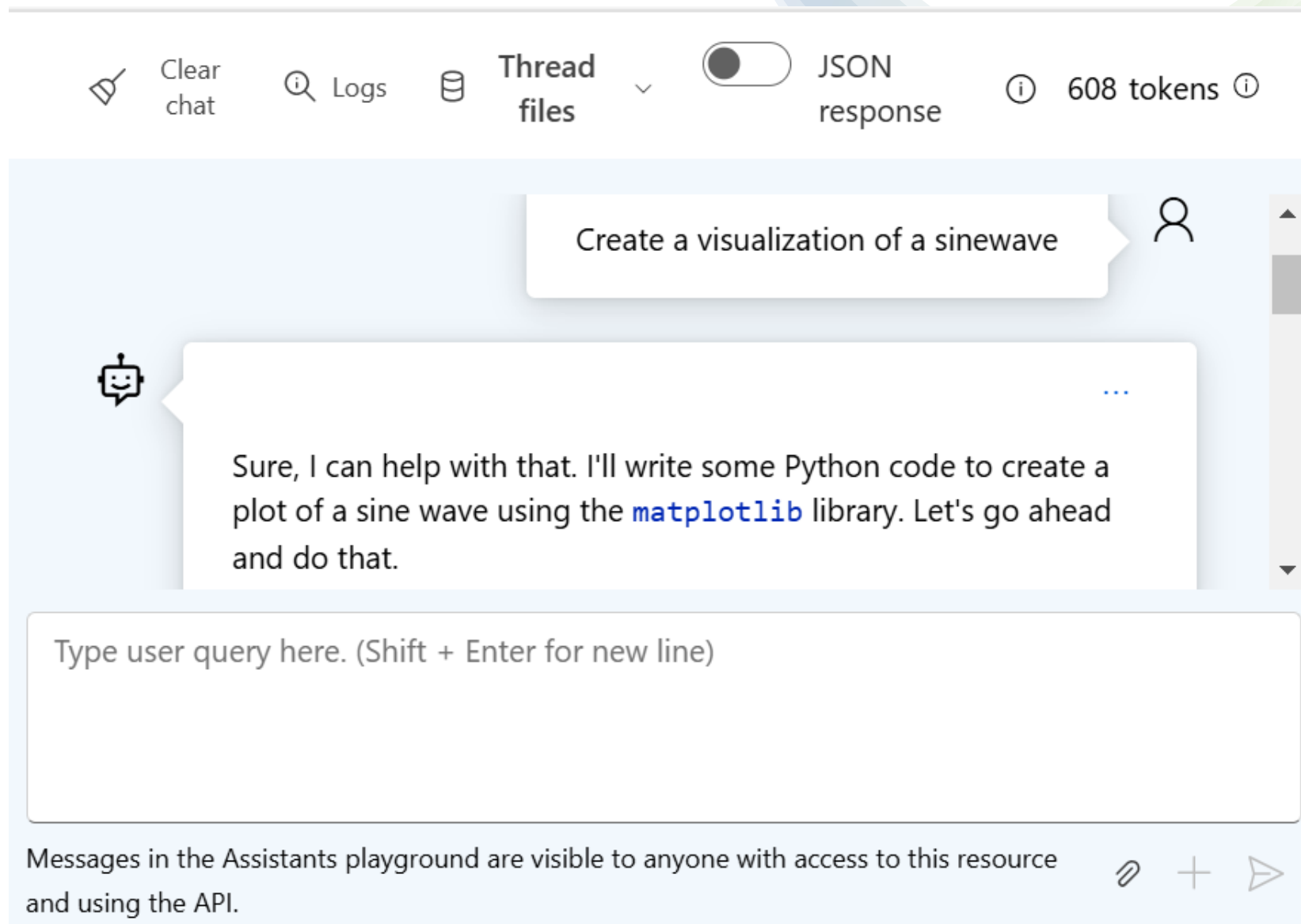
- **Asystent:** Niestandardowy projekt AI korzystający z modeli usługi Azure OpenAI w połączeniu z narzędziami.
- **Wątek (Thread):** Sesja konwersacji między asystentem a użytkownikiem. Wątki przechowują komunikaty i automatycznie obsługują obcinanie w celu dopasowania zawartości do kontekstu modelu.





# Składniki asystentów

- **Wiadomość (Message):**  
Komunikat utworzony przez Asystenta lub użytkownika. Wiadomości mogą zawierać tekst, obrazy i inne pliki. Komunikaty są przechowywane jako lista w wątku.



# Składniki asystentów

- **Uruchomienie (Run):** Aktywacja asystenta w celu rozpoczęcia działania na podstawie zawartości wątku. Asystent używa konfiguracji i komunikatów wątku do wykonywania zadań przez wywoływanie modeli i narzędzi. W ramach przebiegu Asystent dołącza komunikaty do wątku.
- **Krok uruchamiania (Run step):** Szczegółowa lista kroków, które asystent wykonał w ramach przebiegu. Asystent może wywoływać narzędzia lub tworzyć komunikaty podczas jego uruchamiania. Badanie kroków uruchamiania pozwala zrozumieć, jak asystent uzyskuje wyniki końcowe.

# Create Azure OpenAI ...

[Learn more](#)

## Project Details

Subscription \*

ZALNET-PAYG

Resource group \*

(New) PytechSummit2024RG

[Create new](#)

## Instance Details

Region

East US

Name \*

pytechsummit2024demo

Pricing tier \*

Standard S0

[View full pricing details](#)





[Home](#) > [Create a resource](#) > [Marketplace](#) >

# Create Azure OpenAI ...

 Basics  **Network**  Tags  Review + submit



Configure network security for your Azure AI services resource.



Type \*

- ☒ All networks, including the internet, can access this resource.
- ☐ Selected networks, configure network security for your Azure AI services resource.
- ☐ Disabled, no networks can access this resource. You could configure private endpoint connections that will be the exclusive way to access this resource.

Previous

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# Create Azure OpenAI ...

-  Basics
-  Network
-  Tags
-  **Review + submit**

 [View automation template](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

## Basics

Subscription	ZALNET-PAYG
Resource group	PytechSummit2024RG
Region	East US



**pytechsummit2024demo**



Azure OpenAI

Search



Go to Azure AI Foundry portal



Delete

Overview

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Resource Management
  - Keys and Endpoint
  - Encryption
  - Pricing tier
  - Networking
  - Identity
  - Cost analysis

Get Started Develop Monitor

Build your own secure copilot and generative AI applications with Azure OpenAI Service

Deploy an Azure OpenAI model and start making API calls. Connect your own data, call functions, and improve workflow with Azure OpenAI language, image and speech models. You can access the service through REST APIs, Python SDK, or our web-based interface in the Azure AI Foundry portal.

[Learn More](#)



Explore and deploy

Explore and deploy the generative AI models, craft unique prompts for your use cases, and fine-tune select models.

Explore Azure AI Foundry portal





## Assistants playground

🔍 Help

🏠 Home

Get started

📦 Model catalog

Playgrounds ^

💬 Chat

🤖 Assistants PREVIEW

🎙️ Real-time audio PREVIEW

🖼️ Images

🗨️ Completions

Tools ^

🧪 Fine-tuning

🌐 Azure

🔍 OpenAI PREVIEW

Evaluation



### Create an assistant

to get started with the [Assistants API](#)

📘 Note: In order to use the Assistants playground you need to deploy a model that supports Assistants. [Learn more about supported models](#) 🔗

Create new deployment

+ Create an assistant

## Select a chat completion model

Choose a model to create a new deployment. For flows and other resources, create a deployment from their respective list. [Go to model catalog.](#)

Models: 4

Inference tasks: Chat completion



Show description

Search



**gpt-4o**

Chat completion



**gpt-4o-mini**

Chat completion



**gpt-4**

Chat completion



**gpt-35-turbo**

Chat completion



Task: Chat completion

GPT-4o offers a shift in how AI models interact with multimodal inputs. By seamlessly combining text, images, and audio, GPT-4o provides a richer, more engaging user experience.

Matching the intelligence of GPT-4 Turbo, it is remarkably more efficient, delivering text at twice the speed and at half the cost. Additionally, GPT-4o exhibits the highest vision performance and excels in non-English languages compared to previous OpenAI models.

GPT-4o is engineered for speed and efficiency. Its advanced ability to handle complex queries with minimal resources can translate into cost savings and performance.

The introduction of GPT-4o opens numerous possibilities for businesses in various

Confirm

Cancel

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- Azure OpenAI PREVIEW
- Evaluation
- Batch jobs

## Deploy model gpt-4o

Deployment name \*

gpt-4o

Deployment type

Standard

Standard: Pay per API call with lower rate limits. Adheres to Azure data residency promises. Best for intermittent workloads with low to medium volume. Learn more about [Standard deployments](#).

Deployment details

Collapse

Model version

2024-05-13 (Default)

AI resource

pytechsummit2024demo

150K tokens per minute quota available for your deployment

Tokens per Minute Rate Limit



pytechsummit2024demo

(eastus, S0)













Help


s. [Learn more about](#)


new deployment





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- Azure
-  OpenAI PREVIEW
- Evaluation
-  Batch jobs
- Shared resources ^


# Assistants playground

 Help

 New assistant


 Select assistant


 Delete


 View code

## Setup

 Hide



Assistant id: 


asst\_tiRaX141e9CiEnX0emuGBbs 


Assistant name 

Assistant560


Assistant id: asst\_tiRaX141e9CiEnX0emuGBbs

Deployment \*  [Create new deployment](#) 

gpt-4o (version:2024-05-13) 

Instructions 

You are a helpful AI assistant who makes interesting visualizations based on data. You have access to a sandboxed environment for writing and testing code. When you are asked to create a

 Last saved: today 7:07 AM

 Clear chat


 Logs

 Thread files 




 JSON response

 0 tokens 

**New thread started**

thread\_XP8W8pMbGFrLy7WHbh1Kbfnw 

Type user query here. (Shift + Enter for new line)

Messages in the Assistants playground are visible to anyone with access to this resource and using the API.   



# Assistants playground

🔍 Help

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- 🤖 Assistants** PREVIEW
- 🎧 Real-time audio PREVIEW
- 🖼️ Images
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- Azure
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- Evaluation




## Create an assistant


to get started with the [Assistants API](#)

Deployment


gpt-4o ▾


+ Create an assistant





 Home


Get started


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Tools 

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 Azure





 OpenAI PREVIEW





 Evaluation

 Batch jobs

# Assistants playground

 Help




 New assistant  Select assistant  Delete  View code


 Clear chat  Logs  Thread files  JSON response ⓘ 0 tokens ⓘ

**New thread started**














thread\_XoSL0ypZ2oyAK76JcqygZMHQ ⓘ

Type user query here. (Shift + Enter for new line)


Messages in the Assistants playground are visible to anyone with access to this resource and using the API.   


 Tools ✓ Last saved: today 6:59 AM





- 
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
# Assistants playground


 Help


 New assistant


 Select assistant


 Delete


 View code


 Tools





File search 


 Add vector store




Code interpreter 


 Add files


Functions 



 Add function



 Model settings


✓ Last saved: today 7:00 AM

 Clear chat


 Logs

 Thread files 




 JSON response 














0 tokens 

New thread started

thread\_tgUP3x9aftiHvNhjVOWWIDXY 

Type user query here. (Shift + Enter for new line)








Messages in the Assistants playground are visible to anyone with access to this resource and using the API.   

-  Chat
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-  Images
-  Completions
- Tools
  -  Fine-tuning
  -  Azure OpenAI Evaluation PREVIEW
  -  Batch jobs
- Shared resources
  -  Deployments
  -  Quota
  -  Safety + security
  -  Data files
  -  Vector stores PREVIEW


# Assistants playground


 Help

 New assistant  Select assistant  Delete  View code

 Show setup  Clear chat  Logs  Thread files  JSON response  608 tokens 

## New thread started

thread\_C3ljPuugnObQ4lsfvTu3xUnx 

Create a visualization of a sinewave 



Sure, I can help with that. I'll write some Python code to create a plot of a sine wave using the `matplotlib` library. Let's go ahead and do that.

Type user query here. (Shift + Enter for new line)



Chat

Assistants PREVIEW

Real-time audio PREVIEW

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Azure OpenAI Evaluation PREVIEW

Batch jobs

Shared resources

Deployments

Quota

Safety + security

Data files

Vector stores PREVIEW

## Assistants playground

Help

+ New assistant   ↑ Select assistant   🗑 Delete   </> View code

Show setup

Clear chat

Logs

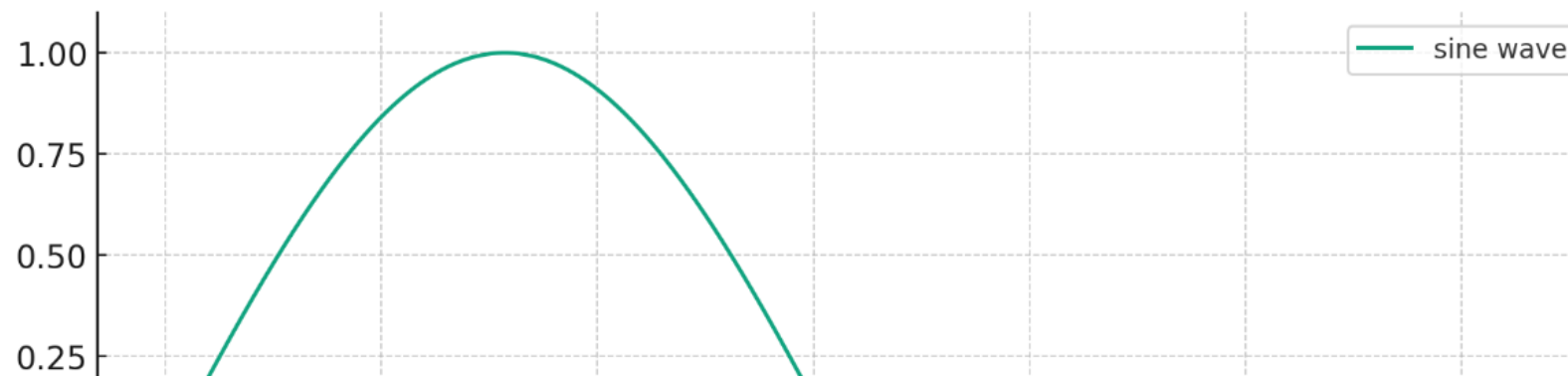
Thread files



JSON response ⓘ

608 tokens ⓘ

### Plot of a Sine Wave



Type user query here. (Shift + Enter for new line)

Messages in the Assistants playground are visible to anyone with access to this resource and using the API.



Azure AI Foundry | Azure OpenAI Service

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Assistants

+ New

Show

Type use

## Sample Code

You can use the following code to start integrating your current prompt and settings into your application.

<https://pytechsummit2024demo.openai.azure.com/>

python ▼

Entra ID authentication

Key authentication

### Assistant setup

```
1 import os
2 import json
3 import requests
4 import time
5 from openai import AzureOpenAI
6
7 client = AzureOpenAI(
8     azure_endpoint = os.getenv("AZURE_OPENAI_ENDPOINT"),
9     api_key= os.getenv("AZURE_OPENAI_API_KEY"),
10     api_version="2024-05-01-preview"
11 )
12
13 assistant = client.beta.assistants.create(
```

Close

pytechsummit2024demo (eastus, S0) ▼

Help

sine wave

to this resource and using the API. 🔗 + ▶



EXPLORER

DEMO

math-tutor

assistant-math\_tutor.ipynb

README.md

.env

requirements.txt

assistant-math\_tutor.ipynb X

math-tutor > assistant-math\_tutor.ipynb > ...

+ Code + Markdown | Run All Restart Clear All Outputs Variables Outline ...

```

process_message(
    """x=r*cos(u)sin(v)
y=r*sin(u)sin(v)
r=2+sin(7*u+5*v)

for 0<u<2π and 0<v<π.

Create a graph of the equation z=r*cos(v)."""
)

```

[8] ✓ 12.8s

... processing ...

Run completed successfully.

user:

```

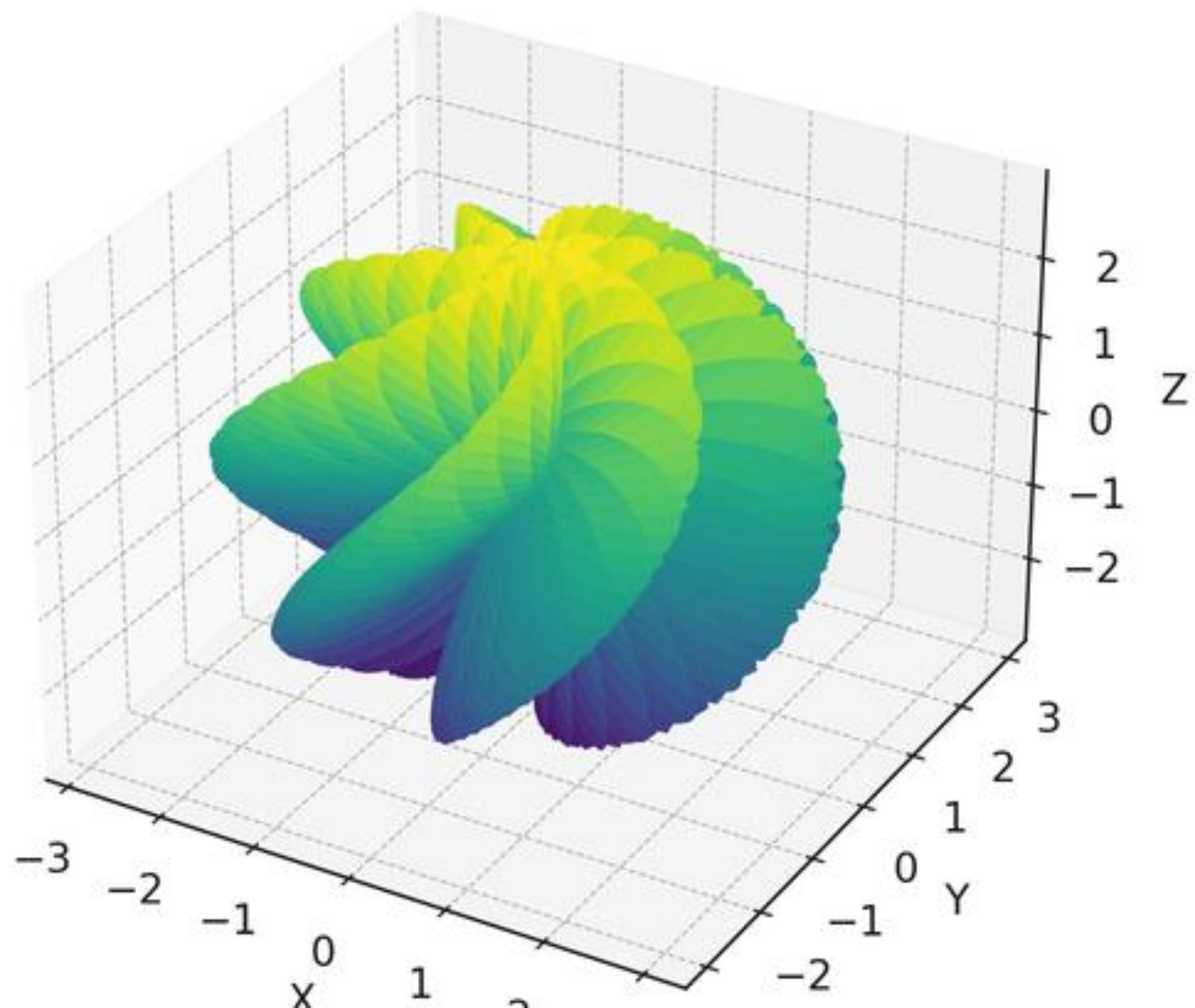
x=r*cos(u)sin(v)
y=r*sin(u)sin(v)
r=2+sin(7*u+5*v)

for 0<u<2π and 0<v<π.

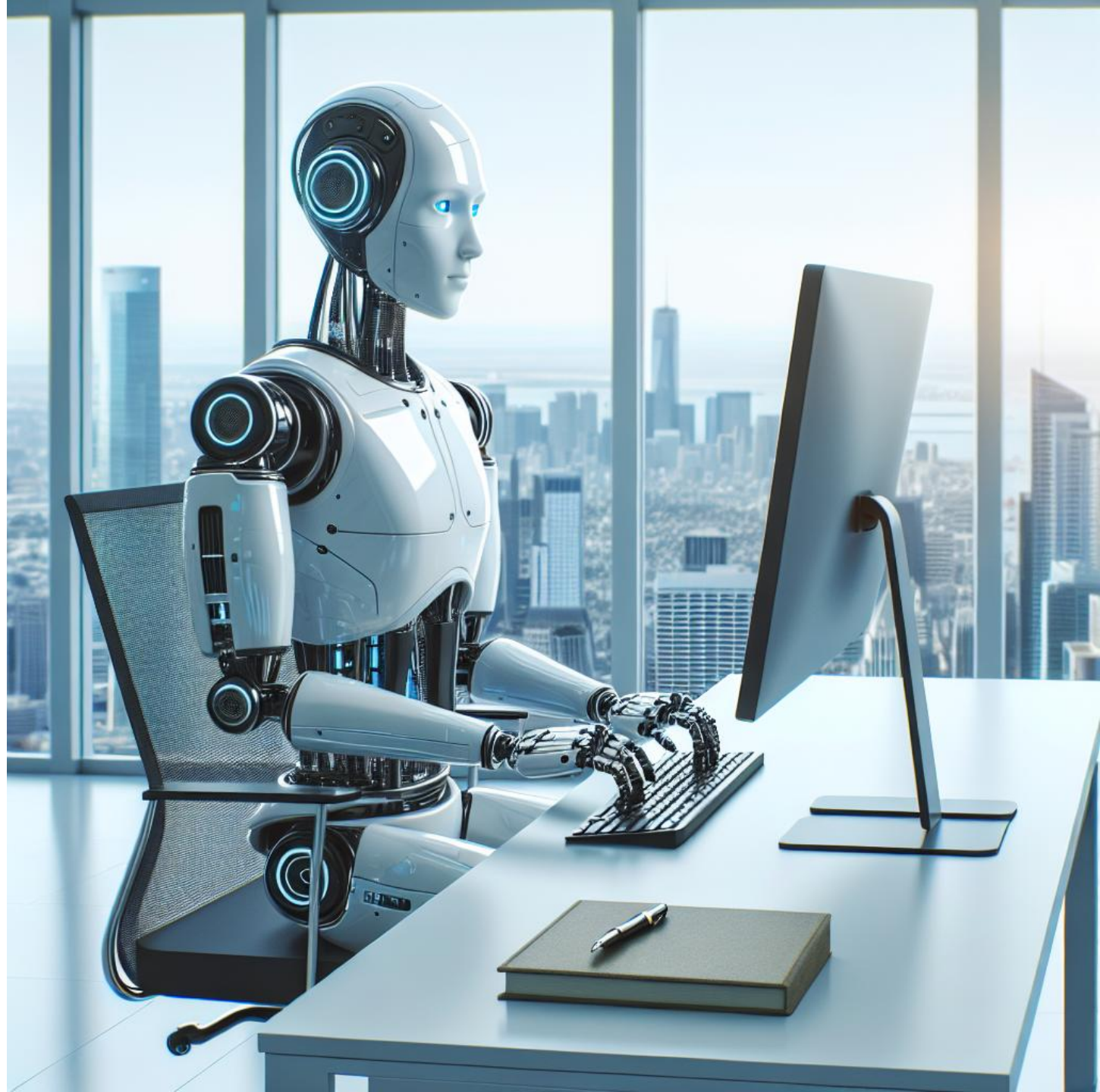
Create a graph of the equation z=r*cos(v).

assistant:
Let's create a 3D graph of the parametric surface defined by the equations:

```



# Demo







Google Meet -  
<https://meet.google.com/ffj-pdrc-bta>



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Blog: <https://zalnet.pl/blog>

X: <https://x.com/beatazalewa>

GitHub: <https://github.com/beatazalewa/>

