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**30.09.2023**

**Dr. Mihail Mateev, MVP, RD, MCT**

# **Boosting Power Platform with ChatGPT Capabilities** [EN]

## ABOUT THE AUTHOR

### Mihail Mateev

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Technical Consultant, Community enthusiast,  
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# Speaker info

- Regional Director currently living in Sofia, Bulgaria
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- Microsoft Certified Trainer
- PhD in cloud computing
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## **AGENDA**

**Open AI Concept**  
**Call Directly OpenAI API**  
**Using Azure OpenAI API**  
**Using Open AI in Power Automate Flows**  
**Using ChatGPT**  
**Using Image Generation**  
**Using Power Automate Flows for MS Teams Automation**  
**Power Virtual Agents and OpenAI**  
**AI Builder and Open AI**

OpenAI Concept

# OpenAI Concept

- OpenAI is a private research laboratory that aims to develop and direct artificial intelligence (AI) in ways that benefit humanity as a whole.
- In March 2019, OpenAI shifted from nonprofit to for-profit status and became formally known as OpenAI LP, controlled by a parent company, OpenAI Inc
- OpenAI introduced Dall-E, a generative AI model that analyzes natural language text from human users and then generates images based on what is described in the text.
- Perhaps the company's best-known product is ChatGPT, released in November 2022 and heralded as the world's most advanced chatbot for its ability to provide answers to users on a seemingly unlimited range of topics

# OpenAI Concept

- Notable projects and releases
- GPT-3
- DALL-E and DALL-E 2
- CLIP
- ChatGPT
- Codex
- Whisper



# OpenAI and Microsoft

- In July 2019, OpenAI engaged in a multiyear partnership with Microsoft in which Microsoft's cloud platform, Azure, has been enhanced by AI-based computing products.
- Microsoft's latest investment in OpenAI extends to Bing, its search engine. The company is using the same technology developed for ChatGPT to produce an AI-infused version of Bing.
- AI-based features have also been added to Microsoft's Edge browser, and ChatGPT functionality is being added to Microsoft 365 products like Outlook and Teams.



Call Directly  
OpenAI API

# Prerequisites

## API keys

Your secret API keys are listed below. Please note that we do not display your secret API keys again after you generate them.

Do not share your API key with others, or expose it in the browser or other client-side code. In order to protect the security of your account, OpenAI may also automatically rotate any API key that we've found has leaked publicly.

SECRET KEY	CREATED	LAST USED	
sk-...AVaH	Feb 16, 2023	Never	
sk-...MPH0	Feb 16, 2023	Feb 17, 2023	

+ Create new secret key

# OpenAI Rest API

- Open AI Rest API Request via Postman

The image displays two screenshots of the Postman interface, illustrating the setup for an OpenAI REST API request.

**Top Screenshot:** Shows the **Overview** tab for a **POST** request to the endpoint `https://api.openai.com/v1/images/generations`. The **Auth** tab is selected, showing **Basic Auth** configuration. The **Username** field is labeled **API KEY** and the **Password** field contains the API key `sk-GHXI8FqZLY7uTzCsUk69T3BibI...`. A warning message states: "Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. Learn more about [variables](#)".

**Bottom Screenshot:** Shows the **Headers** tab for the same request. The **Content-type** header is set to `application/json`. The **Body** tab is selected, showing the **PROMPT** in JSON format:

```
raw JSON Beautify
{
  "prompt": "A cute puppy playing soccer in the moon, looking at the camera, cartoon style",
  "n": 1,
  "size": "512x512"
}
```

# Call Directly OpenAI API

- C#/.NET SDK for accessing the OpenAI GPT-3 API, ChatGPT, and DALL-E 2
- There are unofficial wrapper libraries around the OpenAI API

## C# / .NET

- [Betalgo.OpenAI](#) by Betalgo
  - [OpenAI-API-dotnet](#) by OkGoDoIt
  - [OpenAI-DotNet](#) by RageAgainstThePixel
- 
- `var api = new OpenAI_API.OpenAIAPI("YOUR_API_KEY");`
  - `var result = await api.Completions.GetCompletion("One Two Three One Two");`
  - `Console.WriteLine(result);`

# Azure OpenAI

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

## Marketplace

### Get Started

Service Providers

### Management

Private Marketplace

Private Offer Management

### My Marketplace

Favorites

Recently created

Private plans

### Categories

AI + Machine Learning (11)

Analytics (2)

Developer Tools (2)


Internet of Things (1)

Security (1)

Web (1)

Search: Azure OpenAI X Pricing: All X Operating System: All X Publisher Type: All X Product Type: X Publisher name: All X

Showing 1 to 14 of 14 results for 'Azure OpenAI'. [Clear search](#)




**Azure OpenAI**

Microsoft

Azure Service

The Azure OpenAI service.

Create ▾



**DeskConnect - Desktop Automation Driver for Azure**


FabSoft

SaaS

Submitting Realtime Documents to Azure OpenAI without having to Re-train or Re-tune the Model

Starts at €15.467/user/month

Subscribe ▾



**FractalGPT - GPT-powered AI chatbot on Azure**


Fractal Analytics Inc.

Azure Application

Open AI, Generative AI, ChatGPT, GPT, LLM

Starts at €4,539.677/month

Create ▾



**Enterprise Chat — powered by GPT-4**


Hitachi Solutions

SaaS

Harness AI and Safeguard Your Privacy with Enterprise Chat — powered by GPT-4

Starts at €929.429/month

Subscribe ▾




**BA Insight for Azure Cognitive Search**

BA-Insight - Global HQ (Boston)

SaaS

Create ▾




**Touchcast CogCache**

Touchcast Inc.

SaaS

Subscribe ▾




**Commerce.AI Platform**

Commerce.AI

SaaS

Create ▾



**Soul Machines | Digital People™**

Soul Machines Inc.

SaaS

Subscribe ▾

Azure OpenAI

Playground

Chat

Completions

DALL-E (Preview)

Management

Deployments

Models

Data files

Quotas

Content filters (Preview)



## MMateevOpenAI | Keys and Endpoint

Search

Regenerate Key1

Regenerate Key2

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource Management

Keys and Endpoint

Model deployments

Pricing tier

Networking

Identity

Cost analysis

Properties

Locks

These keys are used to access your Azure AI service API. Do not share your keys. Store them securely—for example, using Azure Key Vault. We also recommend regenerating these keys regularly. Only one key is necessary to make an API call. When regenerating the first key, you can use the second key for continued access to the service.

Show Keys

KEY 1  
KEY 2  
Location/Region  
westeurope  
Endpoint  
https://mmateevopenai.openai.azure.com/

Azure AI Studio > Deployments

## Deployments

Deployments provide endpoints to the Azure OpenAI base models, or your fine-tuned models, configured with settings to meet your needs, including the content moderation model, version handling, and deployment size. From this page, you can view your deployments, edit them, and create new deployments.

Create new deployment Edit deployment Delete deployment Search

Deployment name	Model name	M...	De...	Capac...	Sta...	Model dep...	Content Fil...
✓ Mambo	gpt-35-turbo	0301	Standard	179K TPN	✓ Succ	7/5/2024	Default

# Azure OpenAI Chat

The screenshot displays the Azure OpenAI Chat playground interface. On the left, a sidebar lists navigation options: 'Playground' (selected), 'Chat' (highlighted with a red box), 'Completions', 'DALL·E (Preview)', 'Management', 'Deployments', 'Models', 'Data files', 'Quotas', and 'Content filters (Preview)'. The main area is titled 'Chat playground' and includes a 'Deploy to' button (highlighted with a red box) and links for 'Import setup', 'Export setup', and 'Show panels'. The interface is divided into three panels: 'Assistant setup', 'Chat session', and 'Configuration'. The 'Assistant setup' panel allows for configuring the system message and includes a 'System message' text area with the text 'You are an AI assistant that helps people find information.' The 'Chat session' panel (highlighted with a red box) shows a chat history with a user message 'When Bulgaria is founded' and an assistant response 'Bulgaria is generally considered to have been founded in 681 AD, when the Bulgar Khan Asparukh established the state of Great Bulgaria in the Balkan region. This is regarded as the beginning of the First Bulgarian Empire, which lasted until the late 10th century.' The 'Configuration' panel on the right shows deployment settings, including a dropdown for 'Deployment' set to 'Mambo', and session settings for 'Past messages included' (set to 10) and 'Current token count' (96/4000).

Azure AI Studio > Chat playground

Chat playground

Privacy & cookies

Deploy to

Import setup Export setup Show panels

Assistant setup

System message Add your data (preview)

Save changes

Specify how the chat should act

Use a template to get started, or just start writing your own system message below. Want some tips? [Learn more](#)

Use a system message template

Select a template

System message

You are an AI assistant that helps people find information.

Examples

Add examples to show the chat what responses you want. It will try to mimic any responses you add here or make sure

Chat session

Clear chat View code Show raw JSON

When Bulgaria is founded

Bulgaria is generally considered to have been founded in 681 AD, when the Bulgar Khan Asparukh established the state of Great Bulgaria in the Balkan region. This is regarded as the beginning of the First Bulgarian Empire, which lasted until the late 10th century.

User message

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

Configuration

Deployment Parameters

Deployment \*

Mambo

Session settings

Past messages included 10

Current token count 96/4000

Input tokens progress indicator



# Azure OpenAI Chat

## Deploy to a web app

ⓘ Your web app will be configured with Azure Active Directory authentication enabled. It may take a few minutes to apply a deployment completes, during which time you will not be able to chat in the app. Please wait 10 minutes, then reload the app and log in to begin chatting.

Pick your configurations to deploy a web app. [Learn more about deployment](#)

☐ Create a new web app ☒ Update an existing web app

Subscription ⓘ \*

Pay-As-You-Go

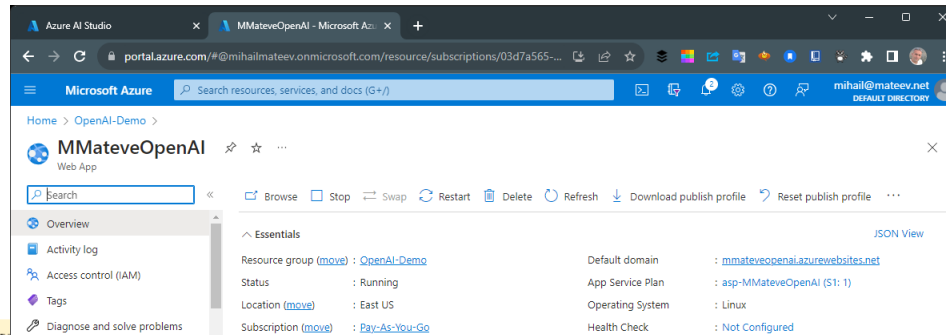
Select an existing web app ⓘ \*

MMateveOpenAI

☐ Enable chat history in the web app

Deploy

Cancel



mihail@mateev.net

## Permissions requested

MMateveOpenAI

[App info](#)

**This application is not published by Microsoft.**

This app would like to:

✓ Maintain access to data you have given it access to

Share ☐ Sign in and read your profile

users' basic profiles

on behalf of your organization

se permissions means that you allow this app to use specified in their terms of service and privacy u can change these permissions at ys.microsoft.com. [Show details](#)

look suspicious? [Report it here](#)

Cancel

Accept

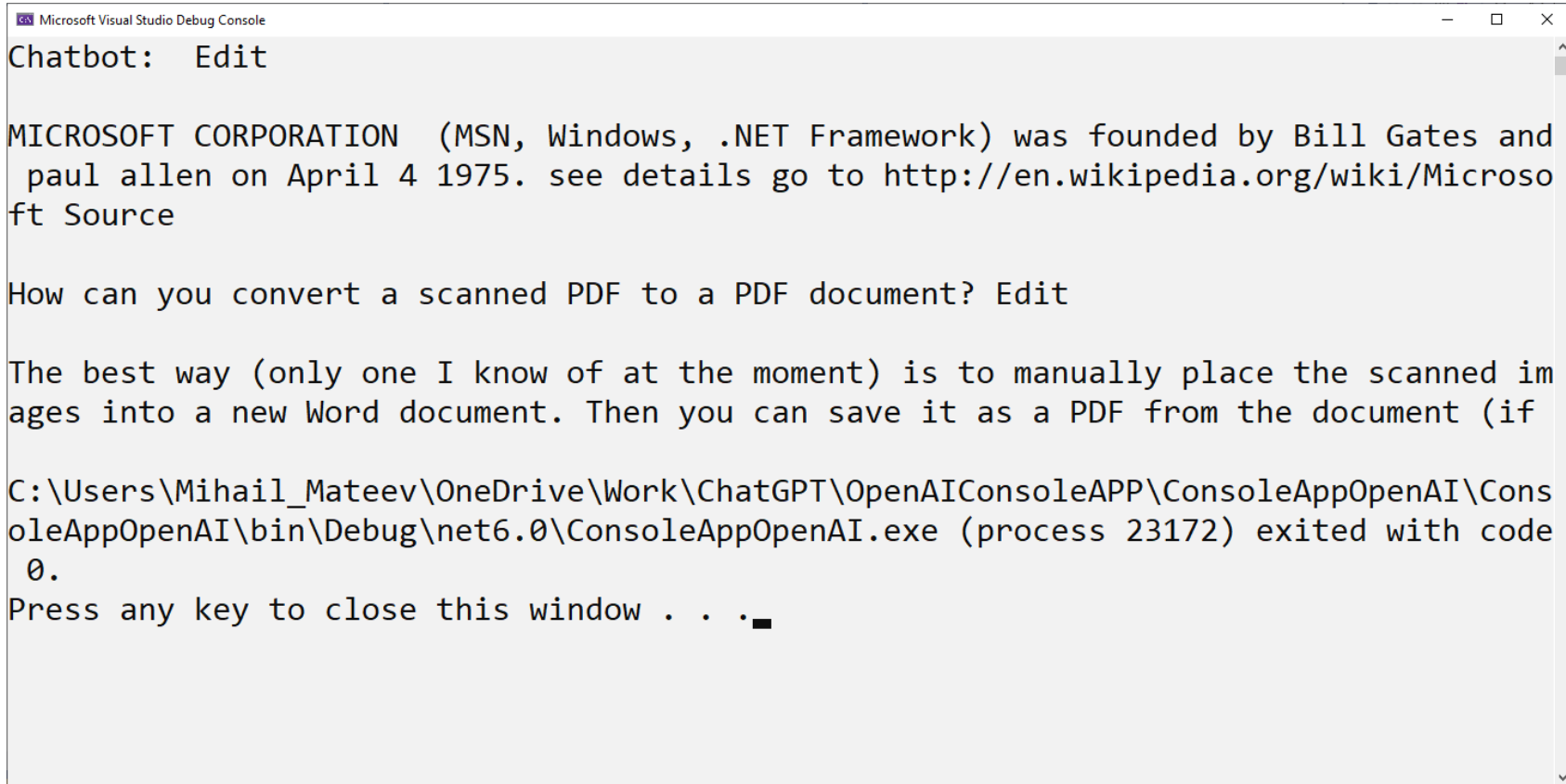
# Call Azure OpenAI API

- Azure OpenAI client library for .NET
- It can connect to Azure OpenAI resources or to the non-Azure OpenAI inference endpoint, making it a great choice for even non-Azure OpenAI development.
- Install the package
- `dotnet add package Azure.AI.OpenAI --prerelease`
- Authenticate the client
- `OpenAIClient client = useAzureOpenAI`
- `? new OpenAIClient(`
- `new Uri("https://your-azure-openai-resource.com/"),`
- `new AzureKeyCredential("your-azure-openai-resource-api-key"))`
- `: new OpenAIClient("your-api-key-from-platform.openai.com");`

# Call Azure OpenAI API

- Create OpenAIClient with an Azure Active Directory Credential
- dotnet add package Azure.Identity
- `string endpoint = "https://myaccount.openai.azure.com/";`
- `var client = new OpenAIClient(new Uri(endpoint), new DefaultAzureCredential());`
- Chat completions sample
- `Response<Completions> response = await client.GetCompletionsAsync(`
- `"text-davinci-003", "Hello, world!");`
- `foreach (Choice choice in response.Value.Choices){`  
`Console.WriteLine(choice.Text); }`

# Call Azure OpenAI API



```
Microsoft Visual Studio Debug Console
Chatbot:  Edit

MICROSOFT CORPORATION (MSN, Windows, .NET Framework) was founded by Bill Gates and
paul allen on April 4 1975. see details go to http://en.wikipedia.org/wiki/Microsoft
Source

How can you convert a scanned PDF to a PDF document? Edit

The best way (only one I know of at the moment) is to manually place the scanned im
ages into a new Word document. Then you can save it as a PDF from the document (if

C:\Users\Mihail_Mateev\OneDrive\Work\ChatGPT\OpenAIConsoleAPP\ConsoleAppOpenAI\Cons
oleAppOpenAI\bin\Debug\net6.0\ConsoleAppOpenAI.exe (process 23172) exited with code
0.
Press any key to close this window . . .
```

# Call Directly OpenAI API

```
switch (userSelection)
{
    case "1":
    {
        Console.WriteLine("Ask a Question:");
        var question = Console.ReadLine();

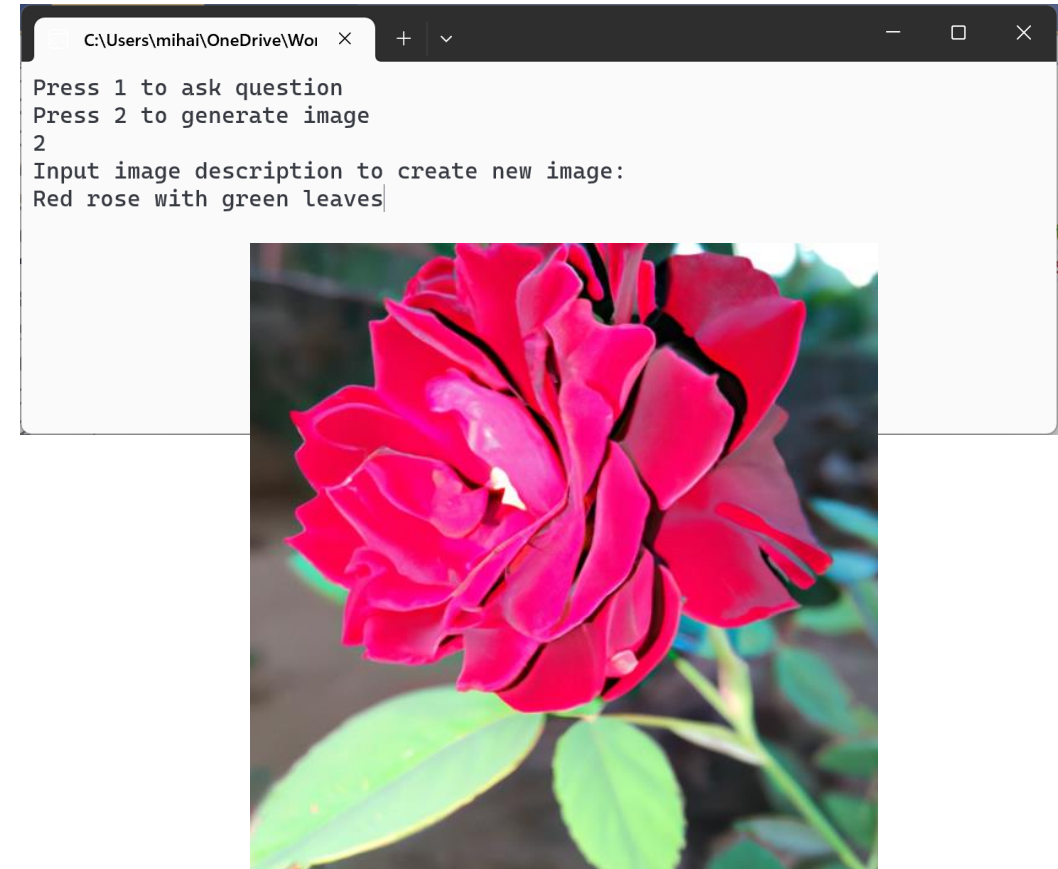
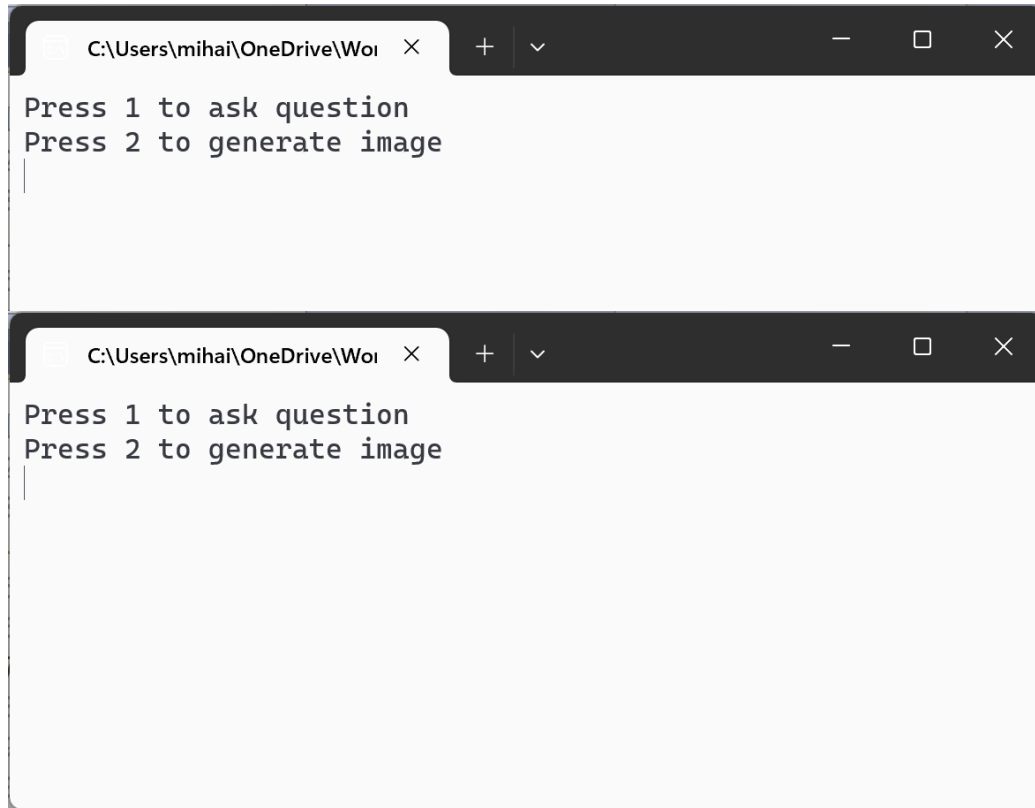
        var answer = OpenAI.AskQuestion(250, question, "text-davinci-002", 0.7, 1, 0, 0, configuration);
        Console.WriteLine(answer);
        break;
    }
    case "2":
    {
        Console.WriteLine("Input image description to create new image:");
        var prompt = Console.ReadLine();
        var imagesNumber = 5; // hardcoded

        var urls = OpenAI.CreateImage(prompt, imagesNumber, "512x512", configuration);

        foreach (var url in urls)
        {
            Process.Start(new ProcessStartInfo
            {
                FileName = url,
                UseShellExecute = true
            });

            Console.WriteLine(url);
        }
        break;
    }
}
```

# Call Directly OpenAI API



# OpenAI and Power Platform



# OpenAI and Power Automate Flows

# OpenAI API and Power Automate

The image displays a Power Automate workflow and the configuration for an HTTP action to interact with the OpenAI API.

**Workflow Overview:**

- HTTP:** The initial step, highlighted with a red box.
- Parse JSON from HTTP Response:** A step that receives input from the HTTP step.
- Apply to each 2:** A loop step that receives input from the Parse JSON step.

**HTTP Action Configuration:**

- Method:** POST (highlighted with a red box and a blue checkmark).
- URI:** `https://api.openai.com/v1/images/generations` (highlighted with a red box).
- Headers:**
  - Content-type:** application/json (highlighted with a red box).
- Body:**

```
{  "prompt": "A cute puppy playing soccer in the moon, looking at the camera, cartoon style",  "n": 1,  "size": "512x512"}
```

 (highlighted with a red box).
- Authentication:** Basic (highlighted with a red box).
- Username:** SPACE FOR USER NAME (highlighted with a red box).
- Password:** [Redacted] (highlighted with a red box).

**OpenAI API Request Body:**

```
{  "prompt": "A cute puppy playing soccer in the moon, looking at the camera, cartoon style",  "n": 1,  "size": "512x512"}
```

# OpenAI API and Power Automate

This diagram shows the first three steps of a Power Automate flow:

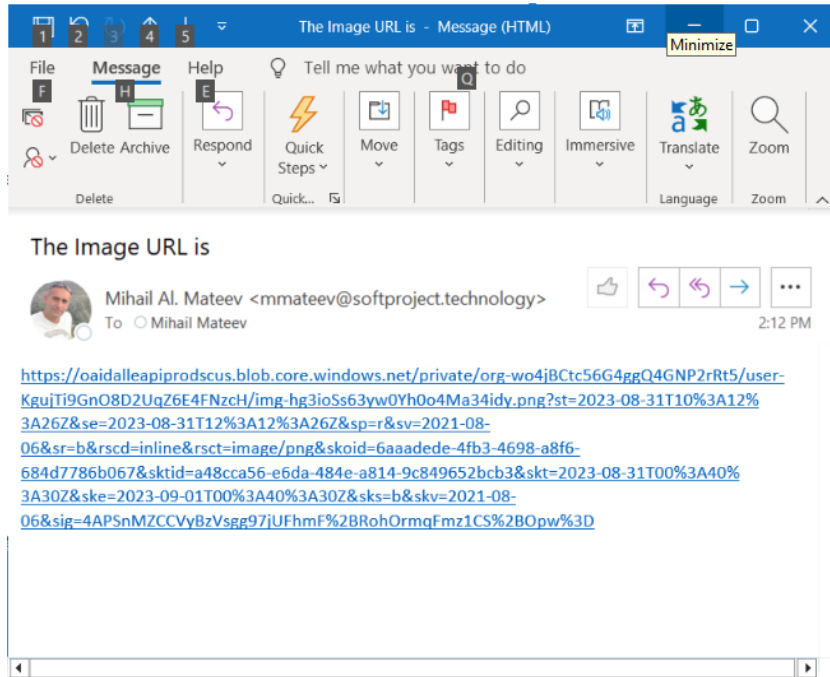
- HTTP**: Method is POST, URI is `https://api.openai.com/v1/images/generations`, Content-type is `application/json`. The body is a JSON object with a prompt, n, and size, highlighted with a red box.
- Parse JSON from HTTP Response**: The content is selected from the previous step's body. The schema is shown, and the 'Generate from sample' button is visible. This step is also highlighted with a red box.
- Apply to each 2**: The output selected is 'data'.

This image provides a detailed view of the 'Parse JSON from HTTP Response' step:

- Content**: Displays the raw JSON response from the OpenAI API, including a 'created' timestamp and a 'data' array.
- Schema**: Shows the JSON Schema for the response, defining the structure of the data.
- OUTPUTS**: The 'Body' output is highlighted with a red box, showing the parsed JSON structure.

This screenshot shows an email client window titled 'The Image URL is - Message (HTML)'. The body of the email contains the generated image URL, which is highlighted with a red box. The email is from Mihail Al. Mateev and includes a 'Show more' link.

# OpenAI API and Power Automate



# Azure OpenAI API and Power Automate

The screenshot shows the configuration for an HTTP action in Power Automate. The action is a POST request to the Azure OpenAI API. The configuration is as follows:

- Method:** POST
- URI:** `https://mmateevopenai.openai.azure.com/openai/deployments/Mambo/chat/completions?api-version=2023-07-01-preview`
- Headers:**
  - Content-type:** application/json
  - api-key:** c35e3939dd2a48c3bb0bbeffd8914152
- Queries:** (Empty)
- Body:**

```
{  "model": "gpt-3.5-turbo",  "messages": [    {      "role": "system",      "content": ""    },    {      "role": "user",      "content": "When was Microsoft founded?"    }  ]}
```
- Cookie:** (Empty)
- Authentication:** None

At the bottom, there is a link to "Hide advanced options" with an upward arrow.

# OpenAI GPT Completions Action

The screenshot displays the Microsoft Power Automate interface. On the left is a navigation pane with the following items: Home, Approvals, My flows, Create, Templates, Connectors, Data, Monitor, AI Builder, Process mining, Solutions, and Learn. The main workspace shows a flow starting with a 'Manually trigger a flow' action. This is followed by a 'GPT3 Completes your prompt (Preview)' action, which is highlighted with a red border. The configuration for this action includes: Engine (DaVinci - most expensive), prompt (When was Microsoft founded?), n (1), best\_of (1), temperature (1), max\_tokens (100), top\_p (An alternative to sampling with temperature, called nucleus sampling, where th), frequency\_penalty (0), and presence\_penalty (0). Below these fields is a 'stop item - 1' section with an 'Add new item' button. An arrow points from the 'GPT3' action to an 'Apply to each 2' action. Inside the 'Apply to each' loop, there is a 'Send an email (V2)' action, also highlighted with a red border. The 'Send an email' action has the following configuration: To (michael@mateev.net), Subject (The answer of the question is:), and Body (The answer of the question is:). The 'Body' field contains a 'Text' placeholder, which is also highlighted with a red border. The 'Send an email' action is part of a loop that applies to each item in the 'choices' array from the previous step.

# OpenAI Create Image Action

The screenshot displays the Microsoft Power Automate interface. On the left is a sidebar with navigation options: Home, Approvals, My flows (selected), Create, Templates, Connectors, Data, Monitor, AI Builder, Process mining, Solutions, and Learn.

The main workspace shows a flow with three steps:

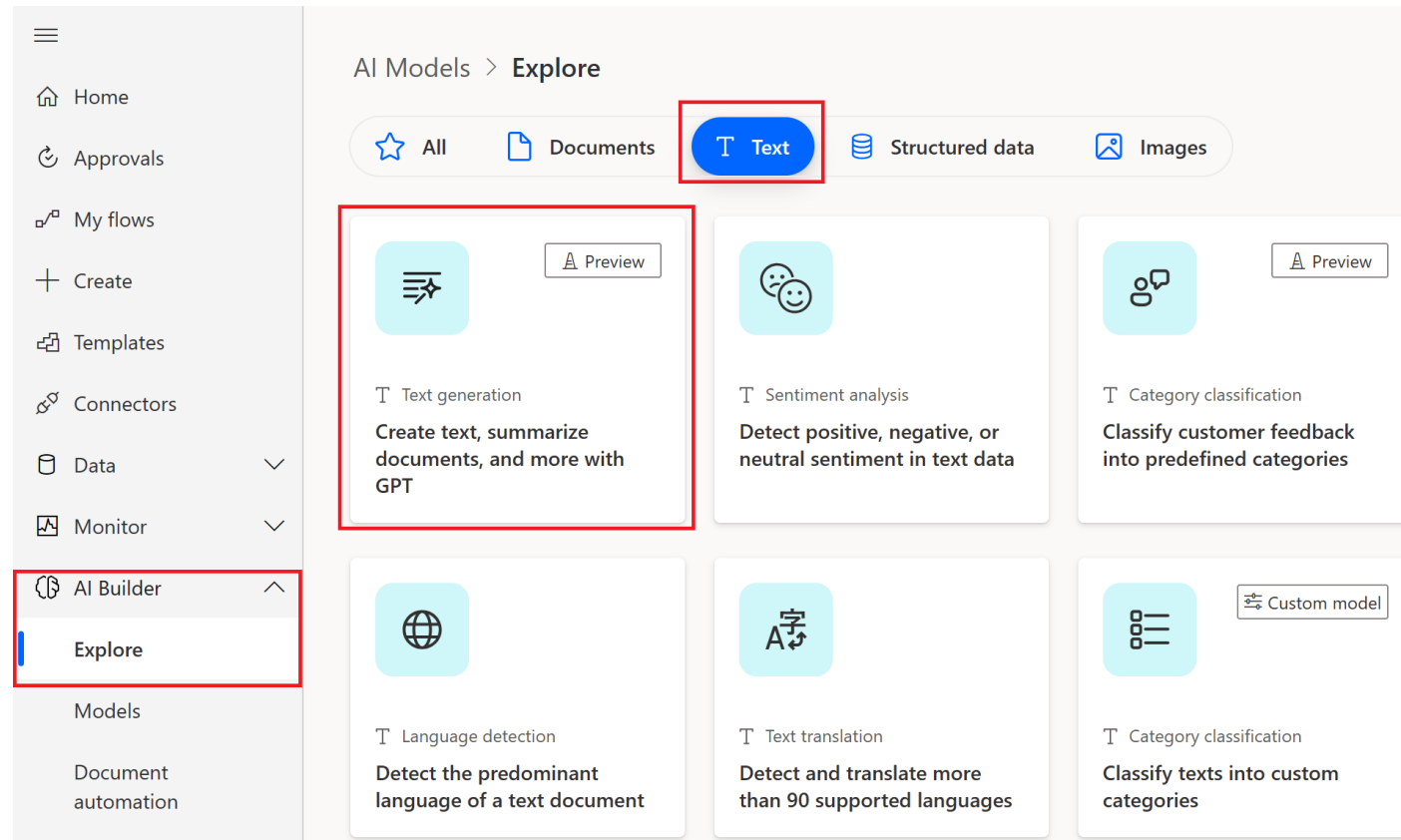
- Manually trigger a flow**: The first step in the flow.
- Create an Image 2 (Preview)**: The second step, highlighted with a red box. It contains the following configuration:
  - prompt**: A cute puppy playing soccer in the moon, looking at the camera, cartoon style
  - Number of images**: 1
  - size**: 512x512
  - format**: url
- Apply to each 3**: A loop action that applies the following step to each item from the previous step.
- Send an email (V2)**: The third step, highlighted with a red box. It contains the following configuration:
  - \*To**: michael@mateev.net
  - \*Subject**: The image URL is:
  - \*Body**: The image URL is: url x

The url x in the email body is also highlighted with a red box, indicating it is a data connection from the 'Create an Image 2' step.



OpenAI and AI Builder

# Text generation model overview



# Power Virtual Agents and ChatGPT


# Power Virtual Agents - GPT based conversation booster

## Create a chatbot




**Build for production**

Build production-ready bots using the existing Power Virtual Agents experience





**Try the unified canvas (preview)**


Explore the new authoring features and chatbot capabilities




**Create a chatbot (preview)** ✕

Name your bot\* 

What language will your bot speak?\* 

English (US) 


Creating a chatbot (preview) is currently only available in English

**Boost your conversations with GPT (preview)** 

Let your bot create responses in real time with GPT and information from your website. [Learn more](#)

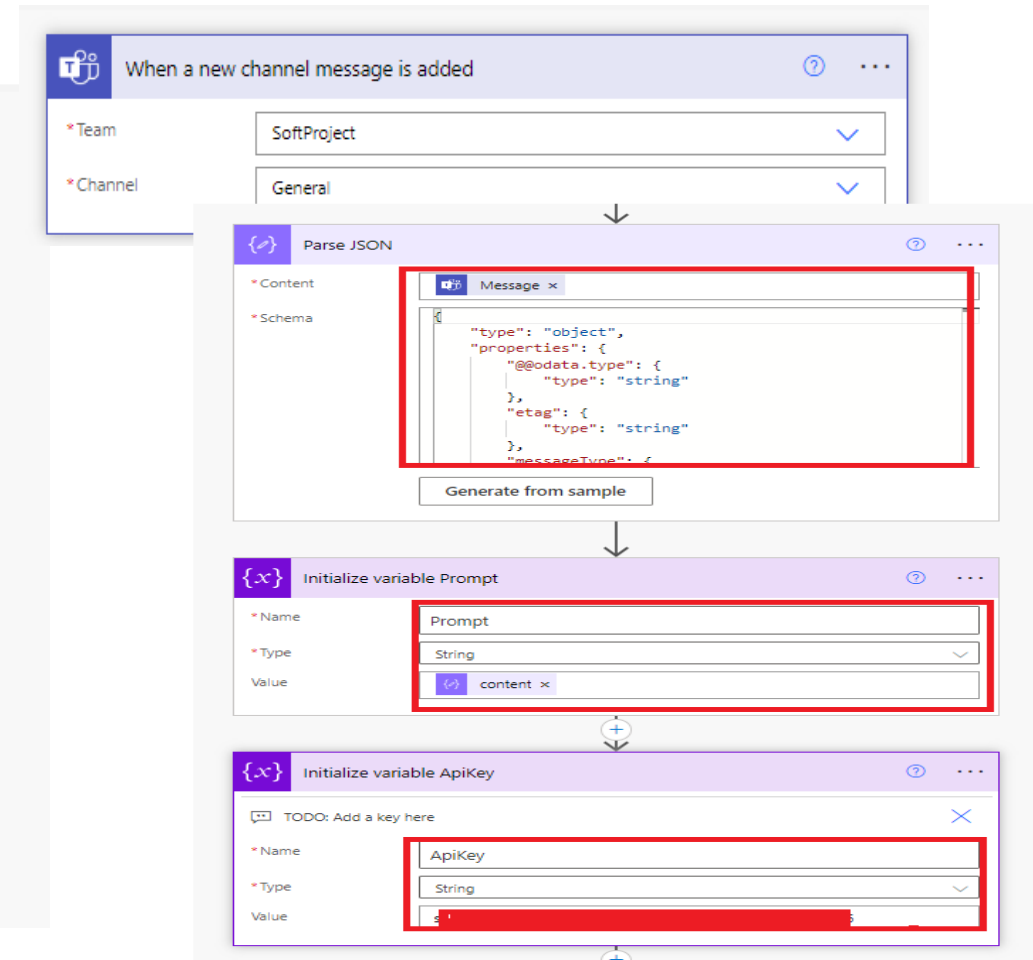
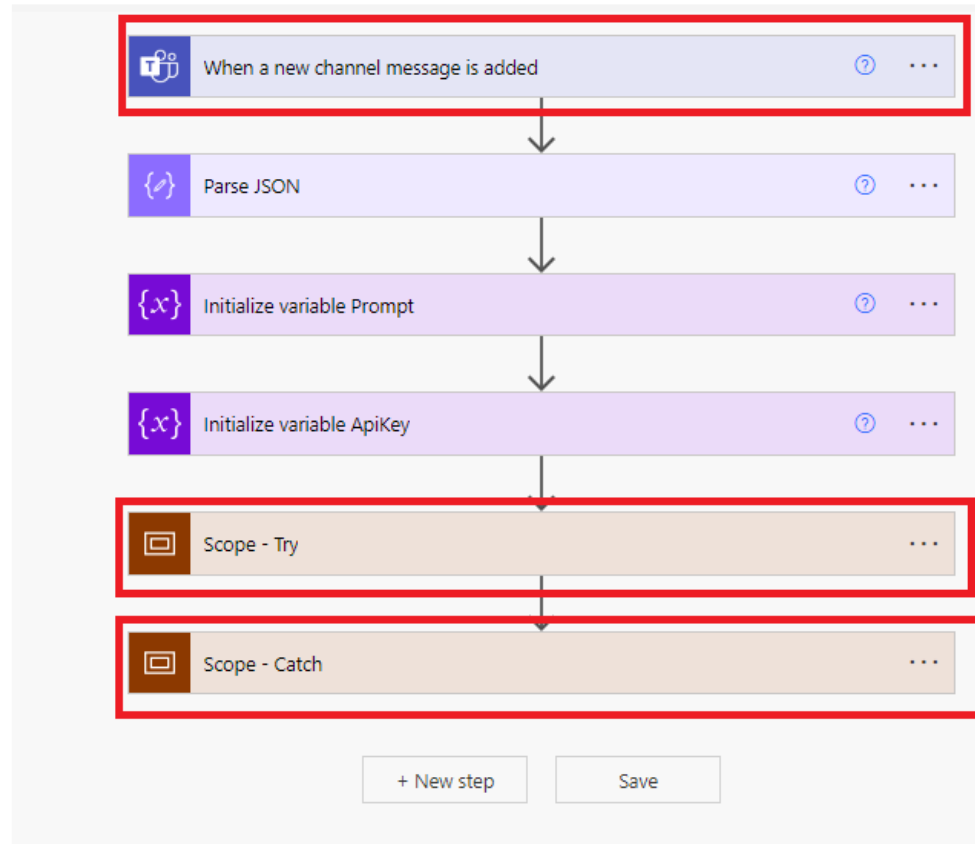
AI-generated content can have mistakes, so don't forget to make sure it's accurate and appropriate. Review the [preview terms](#) to learn more.

Signed in as admin@MODERNCOMMS467367.on...  
[Sign out](#)

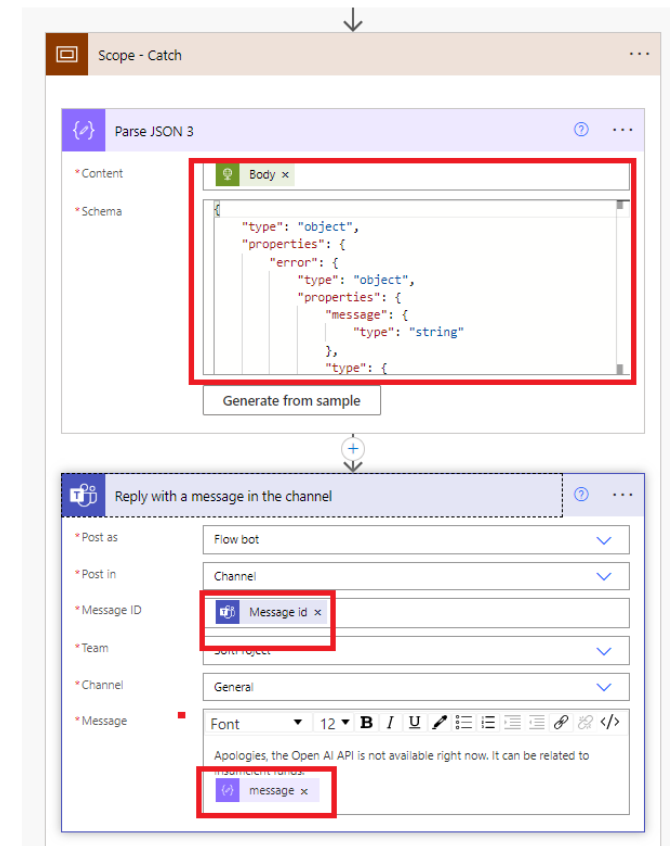
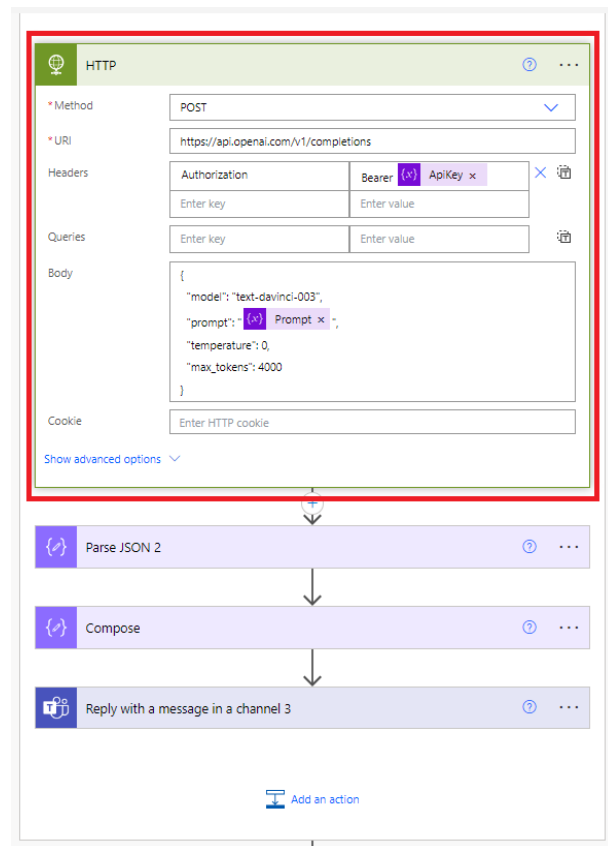
**Create** 

# ChatGPT, MS Teams and Power Automate

# MS Teams and ChatGPT



# MS Teams and ChatGPT





# DEMO

# Demos

- 1. Setup an Azure API and Implement Models Deployment
- 2. Call OpenAI API from C# Application
- 2. Call Azure OpenAI API from C# Application
- 3. Call OpenAI and Azure OpenAI from Postman
- 4. Call Open AI API with HTTP call from Power Automate
- 5. Call Azure OpenAI API with HTTP call from Power Automate
- 6. Use Power Automate as a Business Logic Layer for OpenAI Powered Applications.
- 7. Using OpenAI Actions om Power Automate
- 8. Using AI Powered Flows from Power Apps.
- 9 Using AI Powered Chatbots in MS Teams
- 10. Creating OpenAI powered Chatbots using Azure OpenAI and Deploy it



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