Microsoft

AI-050: Develop Generative AI Solutions with Azure OpenAI Service

Generate images with Azure OpenAI Service

Agenda

- Explore DALL-E in the studio

- Use the REST API for DALL-E models

- Use language specific SDKs for generating images

Learning Objectives

After completing this module, you will be able to:

1 Describe the capabilities of DALL-E in the Azure OpenAI service

2 Use the DALL-E playground in Azure OpenAI Studio

3 Use the Azure OpenAI APIs to integrate DALL-E image generation into your apps
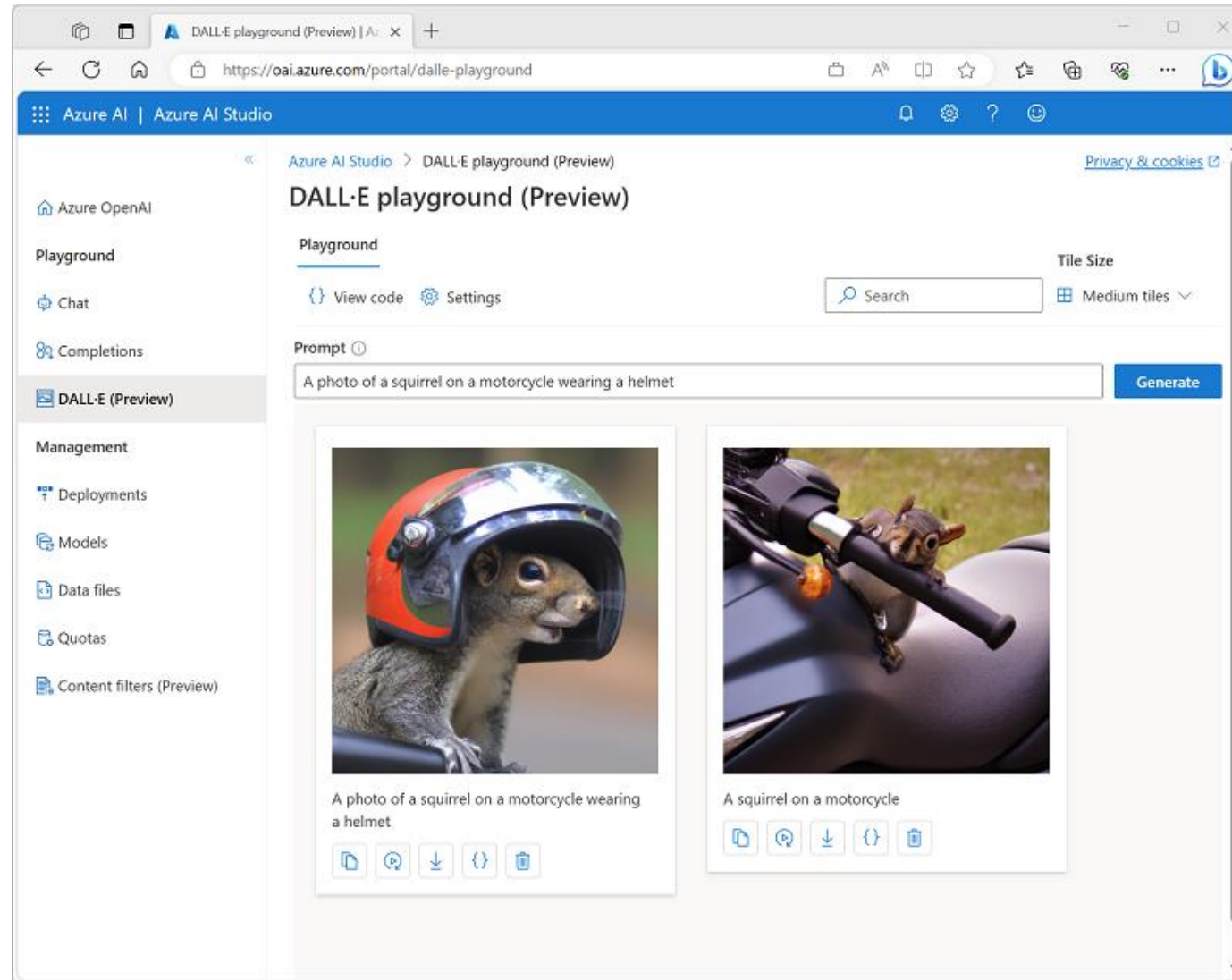
What is DALL-E?

Generate images with a description

- Neural network based model for generating images
- Use natural language to describe what the image should be
- Specify content and style

Prompt:

```
a highland cow in a field on the coast of
Scotland, digital art style
```

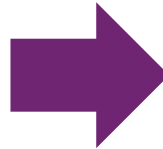# Using DALL-E in Azure OpenAI Studio

Using the Azure OpenAI REST API
DALL-E Endpoint

https://*endpoint*.openai.azure.com/openai/images/generations:submit?api-version=*api_version*

```
{
    "prompt": "A badger wearing a tuxedo",
    "n": 1,
    "size": "512x512"
}
```

```
{
    "created": 1685130482,
    "expires": 1685216887,
    "id": "088e4742-89e8-4c38-9833-c294a47059a3",
    "result":
    {
        "data":
        [
            {
                "url": "<URL_to_generated_image>"
            }
        ]
    },
    "status": "succeeded"
}
```

Using the Azure OpenAI SDKs for DALL-E

Language specific SDKs are available for use in your applications, in both C# and Python.

Code structure follows a similar pattern for both languages.

The response content comes in the form of an image URL, for both REST and SDKs. The image can be downloaded or viewed directly from that URL.

Pseudo code structure:

```
<include library>

<create client>

<define image generation prompt and
options>

<send request (can include options and
prompt in request)>

<extract response content>
```

Exercise - Generate images with a DALL-E model

Use the hosted lab environment if provided, or view the lab instructions at the link below:

https://aka.ms/mslearn-openai-dall-e

Knowledge check

1 **You want to use a model in Azure OpenAI to generate images. Which model should you use?**
- ☑ DALL-E
- ❑ GPT-35-Turbo
- ❑ Text-Davinci

2 **Which playground in Azure OpenAI Studio should you use to explore image generation**
- ❑ Completions
- ☑ DALL-E
- ❑ Chat

3 **In an API request to generate images, what does the n parameter indicate?**
- ❑ The description of the desired image
- ☑ The number of images to be generated
- ❑ The size of the image to be generated

Learning Recap

In this module, we:

Described what DALL-E is

Explored using DALL-E in the Azure OpenAI studio playground

Generated images using APIs

Resources

Generate images with Azure OpenAI Service

https://aka.ms/mslearn-image-gen-module

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Thank you.